بوليتكنك البحرين

Bahrain Polytechnic

Database Systems

Management Information Systems

Networking

Programming

Web Media

Semester 1
2017/2018

SCHOOL OF ICT AND WEB MEDIA

PROJECT EXHIBITION

17 Jan, 2018 | 9:00am - 2:00pm | Building 12

Agenda

9:00	Registration
10:00	VIP Tour
10:30	Opening Remarks
11:00	Debate on IP
11:30	Appreciation Awards
12:00	Projects Awards
12:30	Group Photos

Welcome Note

Dear Valued Guests

Welcome to the ICT and Web Media Project Exhibition.

The School of ICT and Web Media partners with industry and members of the society on employing technology to develop working solutions. The Project Exhibition presents more than fifty ICT (Web Applications, Mobile Apps, Games, Database Systems, Cloud-Based and Networking Infrastructure) and Web Media (Corporate Identity Design, Mobile Apps and Web sites, and Multimedia) Projects. Supported by academics and industry mentors throughout the semester, senior students developed their solutions in one of the following pathways:

1. ICT Project at the Innovation Lab
2. Web Media Project at the Multimedia Lab
3. CLP at Industry Partners

During the first semester of their final year, students work at Bahrain Polytechnic Multimedia and Innovation Labs; supported by subject-experts to deliver innovative solutions that conform to industry standards. This model prepares them to move to our industry partners during the second semester in the form of CLP. While working with industry professionals and business owners on real-world projects, students remain supported by academics to ensure delivery of quality products according to contract terms. A panel of industry experts and faculty members evaluate the projects before presenting them to the public. The best projects are selected based on the evaluation results and announced during the Exhibition Awards Ceremony.

Much of the work expected by our senior students is to automate procedures and make substantial enhancements to standard processes at lowest costs. Moreover, our academics expect to see working solutions developed at high standards. To compound these requirements, students are expected to develop their solutions in isolated environments subject to strict security policies. To overcome the development challenges, students leverage the Polytechnic's state of art datacenter dedicated for teaching and learning. Several students utilize cloud computing (private and public) services as a development and testing environment. Using Microsoft Azure, Amazon aws, and vSphere private cloud on the BICT Datacenter offered opportunities for the capstone projects development on an economical, a flexible, and a secure platform. Most of the projects present the students' proposals and ideas demanding a flexible and ubiquitous infrastructure to unleash their innovation.

This academic year is marked with the provision of state of art technology infrastructure and services. The BICT has acquired more than hundred computer machines placed at our specialized labs, ten high specification machines added to the Innovation Lab, a data centre equipped with more than sixteen rack-mount servers and a compact bundle of network storage attached to blade servers. Moreover, the Engineering Design and ICT Faculty has joined aws Educate Programme manifesting the use of cloud services along Microsoft Azure and VMWare Academy.

We are proud of collaborating with industry and the society at large embodying a robust academic infrastructure to deliver solutions developed by Bahraini Caliber. You are most welcome to join us discussing with students' ways of employing technology and innovative processes to enhance and expand their proposed solutions.

Dr James Egan
Head of School: ICT and Web Media

Debate on Capstone Projects' Intellectual Property

Debate Host:

Raghda Zahran is a Lecturer and a Programme Manager (Management Information Systems) at Bahrain Polytechnic. Raghda received Masters of Science in Networks, Computers and Information Security and Bachelor of Science in Computer Science, and Masters of Arts in Educational Research. As part of her duties, she is the Bachelor of ICT Programme Committee Chair, Capstone Projects Coordinator, and Curriculum Advisory Groups Coordinator. Before joining the Polytechnic, Raghda worked in academic institutions and lead a range of projects in Middle East and the US. Currently, she is an active member of the Association for Computing Machinery (ACM), Institute of Electrical and Electronics Engineers (IEEE), and Project Management Institute (PMI). She is also an Information Systems Audit and Control Association (ISACA) Academic Advocate and a reviewer for the Computer Teacher Association (CSTA). Raghda supports entrepreneurship programmes in developing ideas into working solutions.

Introduction:

Parallel to promoting innovation and encouraging students to develop their ideas, developing an ICT and Web Media solution could raise issues related to students, higher education institution and business partners' rights. The proposed debate aims to discuss the issues and implications of developing a Capstone Project comprising an ICT Solution within an academic degree or during an internship at the industry. Given that projects are initiated by faculty, industry partner, or students, the final product could be replicating current business processes or re-engineering the processes with a new innovative solution.

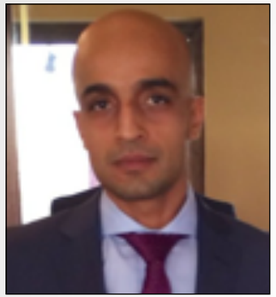
Panelists	**Dr Hanan Almawla** Managing Editor – Journal of Law Director of the Legal Clinic Assistant Professor – IP Law College of Law - University of Bahrain	**Eng. AbdulGhani Al Dhuferei** Head of IP Complaints and Issues Bahrain IP Office	**Mrs Raghda Zahran, MA, MSC., PMP** BICT Programme Manager: Management Information Systems BICT Capstone Projects Coordinator Bahrain Polytechnic
Time	11:00 am		
Date	17th Jan 2018		
Venue	Bahrain Polytechnic Isa Town Campus, Hall 12		
Target Attendees	Students, Academics: Supervisors and Teachers, Business Owners		
Aim	Discuss the issues and implications of developing a capstone project comprising an ICT and Web Media solution within an academic degree or during an internship at the industry		
Learning Outcome	By the end of this session attendees will be able to build awareness of issues related to developing a product as part of a capstone project within academic contexts		

Debate on Capstone Projects' Intellectual Property

Visiting Panelist:

Dr. Al-Mawla holds a PhD in intellectual property from Queen Mary University, UK, in 2013, a Master›s degree from Manchester University in 2008 and a BA from the University of Bahrain in 2006. Dr. Al-Mawla joined the academic faculty at the College of Law in 2006 as a research and teaching assistant. She has contributed to many committees in the College of Law, including disciplinary violations, academic counselling and curricula. Dr. Al-Mawla has done several researches and studies published in specialized journals, such as a study under the provisions of Bahraini law entitled «Does Copyright Perform the Same Function in Attributing the Work to the Author as Does the Trademark?» And «Parody in the Copyright Laws of the GCC Countries». Dr. Al-Mawla is also participated in a paper entitled «Intellectual Property Rights Insurance: A Possible Solution to the Problems of Investors in the GCC Countries» at the 1st research conference held at the American University in the United Arab Emirates in November 2017. The Legal Clinic Director is also active in community service by participating in activities to serve children with special needs.

The University of Bahrain launched the Legal Clinic in 2013 in cooperation with the America Bar Association to provide a useful platform to train law students and hone their skills as lawyers. The clinic raises awareness amongst faculty members and students and provides legal advice on issues related to creative ideas and practice.



Visiting Panelist:

Engineer Abdulghani Aldhuferei holds 9 years of experience in supporting executives, managers, and private sector in IP disputes, Trademarks applications formalities, Nice classification. Mr. Abdulghani Aldhuferei completed his Master›s Degree in Intellectual Property from University of Turin, Italy and Bachelor of Mechanical Engineering from University of Bahrain. He currently Head of Industrial Property Complaints & Issues in Industrial Property Control Section in Bahrain IP National Office. “Motivator, Professional in handling complex works issues». First regulation in the Industrial property was issued in 1955 for patents, design & trade marks through Bahrain Industrial Property Office, which is considered as one of the oldest IP office in the Gulf, and it gained a good international reputation, considering the enforcement it has taken to protect the IP rights.

The important policy of the Industrial Property Directorate in Ministry of Industry, Commerce and Tourism is to continually develop, and trace the international changes relating to IP. From that vision, IPD (Industrial Property Directorate) has a mission to implement it to reality, which is, keeping the commerce environment in Kingdom of Bahrain healthy for innovation for dealers and customers.

Capstone Project Evaluation Industry Partners

The School of ICT and Web Media actively engages with industry to produce work-ready graduates equipped with the required skill-set. Input from industry partners with specialized expertise in one of our strategic fields is highly valued and considered in our capstone projects development and evaluation process. Every semester we extend invitations to those who have proven successful track in the ICT field seeking their input on capstone projects. The evaluators' input contributes to the projects' overall grade. Our academic team benefits from the feedback on the students' development methods, justifications of used technologies, and evaluation methods. The capstone projects evaluation criteria assess the systems' development according to a joint academic and industry standard.

The panel members score individually then discusses the evaluation jointly. The final score is an average. Therefore, each panel member is free to stipulate the score they see appropriate for each criterion. The panel discussions extend Curriculum Advisory Group (CAG) and Curriculum Advisory Committee (CAC) roles in evaluating the courses and maintaining a contemporary structure and content. As such the programmes and courses reviews give account to technical discussions and comparisons with the followed practice by solutions providers and the needs of the market.

Mr. Mohammed Abdul Aziz
Acting Director, eService &
Channel Development Directorate
Information & eGovernment Authority

Mr. Mohamed Adel Abu Hassan
Director, Information Systems
Ministry of Works, Municipalities,
Affairs, and Urban Planning

Ms. Pakiza Abdulrahman
Manager Business Development – ICT Sector
Economic Development Board

Mr. Fabio R. Caetano, MBA CBAP®
Chief Solution Architect
MMEA ITC NW Apps & Cloud Infra Solutions
Ericsson

Mr. Husain Hameed, M.Sc.
Integration Engineer
Ericsson

Mr. Ammar Ali
Founder
Maroonfrog

Mr. Ravi Jayasundera
CEO
Sysprove Consulting W.L.L.

Bachelor of
Web Media

Interactive Physics Exhibition
Amal Alashoor

The interactive physics exhibition is a 3d game created and developed by myself using Unity software. The mission of this exhibition is to show gamers how physics surrounds us and how individuals use it in their daily lives without even knowing. It will also explain some basic theories and history about the five subjects through experiments, videos and charts. The five subjects are waves, spectrum, electricity, magnetism and astronomy. By playing this game, users will explore the physics mysterious maze and by the end of the experience, they should find many answers to their questions and know that physics is not all about equations but it can be fun too. It might generate the desire in users to discover more about it and build on their knowledge to invent or discover something useful for humanity in the future.

3D Room
Maryam Malalla

We were required to develop a 3D room modeling video project. I have chosen to model the Mac Lab room for my project. All room objects were modeled and textured. I have also added a camera animation to the video to showcase the room objects modeling. The mission of the video is to stimulate initial interest in viewers and to provide them with a 3D visualization experience.

Music Museum
Ahmed Mohamed

This museum will demonstrate some of the iconic artists that came from older generations. To be exact, from the 50's to the 90's. It will be similar to a walkthrough, first person type of game. The museum will consist of four rooms and serves to educate the player/viewer as well as entertain them. Each and every room will contain interesting information in relation to the specific artists that are designated to their specific rooms. In addition, there will be some interactive elements and that will hopefully give the player/viewer a realistic sense of gameplay.

3D Room
Reem Chehade

The project is to create a 3D room. The room was chosen from inside the Bahrain Polytechnic campus. The modeled room should be as realistic as possible, and also should be identical to the original room, which means that all the objects in the room should be modeled and add the same materials in the original room to them. In addition, it was required that some of the models should be animated. For this project, I chose a tutor's office from Bahrain Polytechnic, and modeled all the objects in the office and the image on the boards, as well as animating the cupboards and the drawers in the office.

Middle Ages Lifestyle Exhibit
Shurooq Juma

This project was part of our studies in the Advanced Interactive Application course. We made an interactive exhibit that the player can explore in a first person view. It was required that the player can interact with different objects inside the exhibit such as display points and doors. For my project, I chose the middle ages as the topic of my interactive exhibit. I have also decided to make the exhibit take place in the future to create an interesting contrast between the time periods.

It Dances! - 3D Robot Dance
Maryam Albuainain

This project was created as part of the “3D Modeling and Animation” course. The purpose of it was to express a story through the Robot’s dance and the atmosphere of the surrounding area it is in. The robot had to be sketched, modeled in 3D and then animated. This project was developed using Blender software.

Website and Infographic Design
Maheen Nazir

This website was created for the course ‘Advanced Design for the Web’. It incorporates all the appropriate design elements and is heavily influenced by the Jazz music genre. The content created for the website is carefully constructed to appeal to the visitors of the site. It was designed using Adobe Illustrator, Adobe Photoshop, and Adobe InDesign. Some of the elements designed specifically for the site included the logo, infographic and social media icons.

Medication Awareness Videos
Hawra Alekri

In this project, two motion graphics videos were produced for Dar Alhayat Medical Center’s social media accounts, with the aim of tackling two health phenomena surrounding the taking of medications, that are prevalent in the Bahraini society. The videos serve the purpose of raising awareness about the issues in question, all the while promoting good practices in the realm of health care in Bahrain. Adobe Illustrator, Adobe After Effects, and Adobe Premiere were used to illustrate the graphics, create the animation, and add audio, sound effects and produce the final animation video respectively.

Frontier Organic
Mohamed Alzayani

Frontier Organic is a start-up website and mobile app that include menus from different restaurants that serve healthy food in Bahrain. It focuses on specific food categories, where users are capable of viewing, choosing and ordering healthy food. It targets people who are self-conscious and self-aware about their eating habits. Frontier Organics aims to change the habits of eating for a better lifestyle.

Animated video
Sara Ateeq

The video is a display of a success story of a job website. Its aim was to encourage people to use the website rather than regular job advertisements.

National Day Video
Khaled Aldoseri

For Bahrain's national day. The video features social media influencers speaking about Bahrain. The video starts on a wall with pictures on it, videos on the social media influencers or time-lapse videos of Bahrain's landmarks. The pictures shape the flag of Bahrain, and are framed with lights. The video is 1 minute long, created using Adobe After Effects, Adobe Premiere, and Adobe Audition. Video masking and tracking techniques have been used throughout the feature.

Video commercial
Hamad Alyassi

This video commercial was shot and produced by me for a makeup artist. It was shot, produced and edited in one day.

Animation Video
Shaima Koohiji

The animation video is part of the Web Media Project course, it was done for a company called Bab Saudi. The video is an instructional animation video that helps the users to upload their CV to Bab Saudi's website easily. It was implemented as a group by using Adobe After Effects and Adobe Illustrator. The main purpose of the video is to engage with the users of the website and increase the number of users/uploads and give the visitors a reason to stay for a longer time on the website.

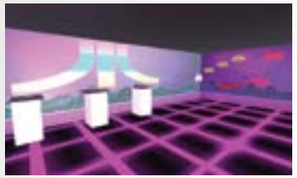
Irish Football Event
Mohamed Alkaabi

These videos are from the 2017 Arabian Celts GAA Festival. As part of a team, we were tasked with shooting the event and creating four videos. The first two videos were short videos for their social media. The third video focused on one of the competing teams. The fourth video was an eight minute highlight of the event that contained interviews, action shots and celebrations.

Major Video
Muath Ateeq

The short video shows a fresh high school graduate who is confused over which major he should choose in Bahrain Polytechnic. It is basically an advertisement for the university showcasing all the majors they have to offer. During the video, he imagines himself participating in all these majors, and at the end of the video he finally happily decides which path to take.

History of Videogame Consoles
Khalid Alkhaja



The project is an interactive application created using Unity. It is an interactive museum or an exhibition of videogame consoles. It is made for gamers and non-gamers who are interested. Non-gamers can use this to educate themselves about its industry and understand the hard work that companies go through to provide the best form of entertainment. The main purpose of this museum is to give gamers an engaging experience. Not all gamers, especially young ones, know the history behind those consoles. This museum will provide them with this information. The museum is also for adult gamers that lived through the early days of videogames. This will be a fun, nostalgic trip for them. It will showcase gaming from 1977 till 2017.

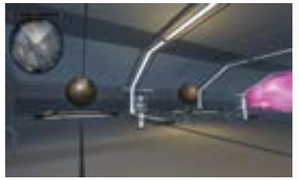
Interactive Museum Exhibition
Sanad Jameel

An Interactive Visual Museum Exhibition created using Unity. The chosen Museum topic is Retro Games. Users are able to explore the exhibition by solving a puzzle then proceeding to the display room in which knowledge can be obtained about successful retro games history. The project is a combination of design, interactivity, planning and organizing all done through Problem Based Learning.

Anatomy Game
Sayed Ahmed Ali

The game's purpose is to teach young children about the human organs. The game helps children learn the function of each organ and the relationship between different organs. In each room the users will be able to learn a new thing about anatomy. In the first room I focused on teaching the names of the organs and what they look like. When the user goes to the next room they have a quiz with an organ in front of them along with a few names and they have to choose the correct organ name. When they pass and go to the next room, they get to learn about the organs' functions and they get another quiz afterward. I've tried to avoid making it complicated since the game is for children so I focused on basics which will help the users to go forward on their own if they find themselves interested in anatomy which was my goal in the first place.

Interactive Space Museum
Hamad Aljawder



The Interactive Space Museum is a virtual museum designed to teach the basics of astronomy and introduce people to the subject.
It features an accurate representation of terrestrial planets, natural satellites, dwarf planets, gas giants, galaxies, as well as other objects found in our universe and beyond. All objects are meticulously designed to be as close to their real-world counterparts as possible, giving the player an experience that is both fun and factually correct.

Cooperative Learning Projects (CLP) Introduction

Bahrain Polytechnic aims to produce graduates who are competent and confident employees, with a reputation for being work-ready, flexible and adaptable with a strong commitment to teamwork and lifelong learning. The programme seeks to align with this aim in its structure, assessment, and teaching. A key component of this aim is the Cooperative Learning Project (CLP) which is a traditional work placement, with the requirement that students learn not only workplace skills, but also deliver a project of suitable academic and industry level.

The work placement specifications are as follows:

- Placements are 15 weeks duration
- Can be allocated individually or in groups
- Bahrain Polytechnic will assign an academic project supervisor
- The project should be directly related to the student's major specialization.
- Projects should be completed at the host organisation's premises
- Projects should be of benefit to the host organisation
- Payment for work completed is not expected and is at the discretion of the employer

Adding Value to your Organisation

Students applying for work placements study in one of the BICT Programmes majors (Database, Management

Information Systems, Networking, or Programming) and have completed three years of studying ICT courses including:

- Computer Systems and Infrastructure
- Operating Systems and Platforms (Unix, Windows client and Windows Server)
- Networking, Network Security and Wireless Communication
- Programming (Desktop Applications, Web-Based Applications Mobile Apps,)
- Systems Analysis and Design
- English and Communication for ICT

As there are four majors in the Bachelor of ICT, students will have completed courses including the following:

- Mobile Programming (iOS development)
- Advanced Programming (Development of IT solution with. Net, C#, XML, ASP)
- Infrastructure for eCommerce
- Cloud Computing
- Network Security (based on the CISCO security certification)
- Ethical Hacking (countermeasures and technologies to stop security breaches)
- Database Programming (development of web – enabled databases using Oracle technologies)

Also, students have completed a major semester-long project where they implemented project management techniques and developed industry standard documentation.

The CLP enables the recruiting organisation to:

- free up your employees as you utilize short term talent at no cost
- engage in social responsibility, ensuring that the experience a Bahraini student gains at your organisation will be invaluable to their career join us in developing the human capital to realise the Bahrain 2030 vision

Work-Placements this semester:

Bachelor of

Information and Communication Technology

Information Technology Project (Innovation Lab)

The IT Project is a course in the Bachelor of Information and Communications Technology (BICT) programme structure. Students enroll in this course in year four semester 1 to plan, design, develop, test, deploy and present an ICT solution to given business problem. Students are supported with weekly supervision, Project Management, Technical Writing, and English communication workshops. The IT project course prepares the students to undertake the cooperative learning project at industry with the flexibility of handling any ICT project role.

Project Management

Project management provides a solid grounding in the principles and practice of ICT products' development with the overall aim of increasing the student's ability to contribute to business effectives. The Project Management module provides a general introduction to project management, ranging from the planning processes – setting up project aims and objectives and budgeting – to development and testing.

It uses a variety of useful planning and management steps though a substantial hands-on experience using tools and techniques of Project server and Web App for collaboration among stakeholders.

The Project Management module is designed to provide students with the advanced project management skills needed for hands-on management of projects and is an ideal complement to prepare them of final semester CLP (Co-operative Learning Projects) in a wide range of sectors and environments. This course fully follows the PMI (Project Management Institute) standards.

It equips the student with the fundamental methodologies, modeling and analytical techniques of the design and implementation of Information Technology product. It also provides students with the advanced ability to lead or act as part of a team progressing project issues from initiation through to completion. Students can expect to be prepared with ICT project management skills in any industry.

Cyril Anthoni
Project Management Tutor

Technical Writing

'Communication' is one of the eight key skills that are inherent in all programmes taught at the Polytechnic. In particular, ICT organisations have a need for skilled report writing. In the Technical Writing module of the IT Project course, students have to write a Thesis Document. This technical report is required as part of assessment. A Thesis Document is a formal report designed to convey technical information in a clear and easily accessible format.

Specialize

Students may specialize in one area of ICT – Databases, Management Information Systems, Networking, or Programming. Each of these areas has its jargon, its diagrams and tables, and its methodologies for developing a product. A product has a development life cycle that starts with understanding the requirements of the client. Development can take place in earnest, followed by implementation. Finally, the product is tested to ensure that it is fault-free, and also matches the client's requirements. The Thesis Document provides an opportunity to describe an actual project to reflect the particular ways of describing development in the chosen major. Students lean heavily on what they have learnt in the courses that they have attended before their final year. The appearance of a report is just as important as its content. Presentation guidelines are recommended by the tutor. For example, it is often the case that technical information is most clearly and concisely conveyed using diagrams, graphs or tables. In the main text, a student must always refer to any figure or table which the student uses. When the first draft has been written, the student's report will start to take shape as a professional, technical document. Towards the end of the semester, the student's report should be nearly complete, with an abstract, the main text in sections, a bibliography, and appendices. The title, with the abstract, should indicate the scope of the report and give the main results and conclusions. The main text should start with an introduction and end with a discussion and a section stating the relevance of the project to Bahrain. The bibliography should list correctly formatted references. Finally, there is the task of checking everything, from the content to the layout, and this is an essential part of the writing process.

Upon completing this module, students will be able to undertake technical writing tasks for ICT products, producing literature and manuals in electronic or paper form for computer hardware and software products.

Dr. Alan Oxley
Technical Writing Tutor

Eventi - Events Management System

Zainab Hasan

Event planning market in Bahrain is expanding as it is mainly used by companies as a promotion strategy. Event management employs project management concepts to the large-scale construct events such as conferences, formal parties, and ceremonies. Organizing events can have a positive impact on the community, and it can lead to economic, cultural, political and social developments. The main objective of this project is to provide organizers with a solution to manage events for various organizations and businesses in Bahrain. Based on the problem analysis results, the project team concluded that an information management system would benefit in handling conferences for multiple business sectors, alongside managing other social events. Different methods and strategies were used to find the gap in the market that the project has been structured on, these methods are feasibility analysis and research studies to understand the procedures. The project aims to improve the overall event management satisfaction. The proposed solution is a centralized event system with a front-end and backend, using PHP and MySQL. The solution will enable event organizers to create packages, collaborate and track the logistics of their events. This project employs the systems development life cycle (SDLC) for producing the final product.

Project Supervisor
Cyril Antony

Where Information Reaches Employees (WIRE)

Roaya Bubshait

Human resource information management is the backbone of any organization. It is particularly critical for expertise organizations like educational institutions. Ensuring the consistency of procedures and centralizing information, is equally important to maintaining the confidentiality and integrity of data. Public schools in Bahrain are struggling in tracking their employment details and progress. Currently, the tracking system in most Bahraini schools is manual, which makes it difficult to use. It is prone to errors, causes a delay in processing requests and generally, leads to decrease of employees' efficiency and performance. This project aims to develop an application that will help in managing the human resource departmental information in an academic context. The application is a digital solution that consists of a front end and a back end to achieve the maximum of workforce management. This project follows SDLC methodology. It is used to construct and provide software applications from start to finish. Also, the project employs Unified Modelling Language, it provides multiple diagrams that offer easiness of understanding the structure and behavior of the application, it is developed using Enterprise Architect software. Furthermore, conducting a formal standardized interview is a technique to gather the client requirements.

Project Supervisor
Momir Radicevic

Industry Portal

Walaa Radhi

Bahrain Polytechnic (BP) has established enduring relationships with companies to fulfil its mission of producing work-ready graduates. Currently, posting job advertisements and internship opportunities are handled by staff members using a range of manual tools. This approach affects the collaboration between students, graduates and local companies. As a result, data in the system can be duplicated or lost, leading to data redundancies. This project aims at facilitating BP's Career Employability Centre (CEC) operations. The CEC offers career services including managing job posting, job application, student and graduate profiles, and organizing career fairs. The proposed solution is a web-based application that is part of an industry portal. The portal consists of three modules namely Career Services, Industry Cooperative Learning Project (CLP) work-placements, and CLP Search Engine. Hence, a web-based system was designed and implemented to address these demands. The Model-View-Controller (MVC) architecture was used to simplify future maintenance of the website. The system has a front-end developed using PHP, and a backend comprising of a centralized MySQL database to ensure data integrity. In addition, due to the sensitivity of the information stored in the database, advanced encryption was employed to maintain high levels of security. A prototype of the website was developed and fully tested. Results from evaluating the user experience indicate that the prototype is an improvement over the current system.

Project Supervisor
Dr. Philippe Pringuet

Crochet Club VLE

Banan Adwan

The ability to produce one's needs contributes to societies independence. Knitting is an essential skill that serves the needs of the communities. However, knitting requires systematic procedures and techniques for producing final products. Crochet knitting, particularly, is a skill that is lost in the generation of technology. This project primary aim is helping knitting communities of practice pass their craft to new generations and develop materials of use for others. The proposed solution is a cloud-based online shopping system. The solution facilitates buying and selling knitting products online. It also provides means for communication and collaboration between the knitters. Centralizing the proposed solution in a cloud environment provides an on-demand resource provisioning environment. This project follows the multi tiers infrastructure technique to always be online and to support the expected number of users in one time.

Project Supervisor
Ancy Cheriyan

Single Sign On

Mariam Sulaibeekh

Identity management in a multi-server architecture is a security issue that concerns organizations. Authorized users are often required to use different credentials. Tolerating users' accounts using brute force and dictionary mechanisms necessitates creating strong passwords. This requirement results in difficulties in retaining passwords for several services. In addition, users are usually locked out and have to place a request to unlock their accounts with the helpdesk department. This project aims at minimizing authorized users' time and efforts in managing their credentials across multiple software and platform services. The proposed solution is an integrated cloud-based Single Sign-On (SSO) service deployed within an educational context. The project entails configuring a user account management service by creating virtual servers, using Microsoft Azure and Windows Server operating system's (OS) Active Directory services (AD). The SSO solution is tested on the configured services that have been installed in the servers. The project employs Bahrain Polytechnic (BP) educational systems or resources as an example. Project management tools and techniques and System Development Life Cycle (SDLC) is the primary approach followed to produce the final product.

Project Supervisor
John Ross

Smart Mirror

Sajah khonji

Parallel to checking updates on social media, perhaps the next most frequent thing we do is to consider a mirror. Recent advances in the Internet of Things (IoT) facilitate the convergence of simple gadgets to provide us with useful information. This project aims to provide helpful information to users without having to manage multiple devices. The proposed solution is a smart application that is integrated with a mirror that is often available in our natural settings. This full-fledged solution displays information such as time, date, news, weather, Email and it also receives voice commands. A Smart Mirror is versatile as it eliminates the need for purchasing many other household items, such as clocks, calendars, newspapers, etc. The solution detects the presence of a face with the use of an embedded computer. Users can customize the visual interface of the Smart Mirror by accessing the smart mirror's web application using any smart device connected to the same network. Informational displays use a web service communication to extract data available through different Application Program Interfaces (APIs). The proposed solution is implemented using a Raspberry Pi as the embedded computer to accent the simplicity of the smart mirror's exterior design.

Project Supervisor
Omar Fayyad

Smart Office Hub

Mohammed Raikhy

Power consumption and Energy Usage are global issues. Particularly very intolerable in countries with high populations, when the population density is high, there is little done to control the utilities consumption. Therefore, electricity cost is a national burden. In Bahrain, Despite the Electricity and Water Authority (EWA) efforts to reduce the national cost of consumption, the citizens' initiative is a key factor in making a change. This project proposes an internet-based remote-control solution that consists of a web page and Raspberry pi. The solution employs the internet of things (IoT) concept to an existing infrastructure. With the use of simple electronic devices and material the proposed solution allows accessing onsite physical devices via the internet. The system works by sending infrared signals that are configured by the users initially and this is done through the internet. Not only does it make it easier for the users to not worry about leaving their devices on, it also makes it easier for people to control the devices from their Smartphones without the need of a specific device.

Project Supervisor
Ali Shahbazali

Tawleti

Aysha Alhajeri

Tawleti is a project created to serve a better dining experience to the locals in Bahrain. Service industry including many fine dining outlets in Bahrain are mostly committed to enhance customer experience. The availability of different cuisines and continental food outlets, adds to Bahraini authentic touristic features. While restaurant businesses are growing exponentially, there are few that are mostly favored by customers due to their exquisite food quality. Coco's, located in Adliya, excels in providing an awesome dining experience for its customers. However, Coco's faces high demand increases in waiting time. This highly impacts on the restaurant's reputation between the locals when it becomes famous with its running waiting list. Therefore, the restaurant needs an online table reservation system for improving the dining experience and achieving effective customers handling process. The purpose of this project is to provide Coco's restaurant manager with a solution that helps in overcoming this issue to increase customer satisfaction. The proposed solution is a web-based application built with a content management system and a reliable infrastructure that ensures the system availability, security and reliability. This project follows the system development life cycle (SDLC) methodology which is commonly adopted for deploying and testing customized ICT solution.

Project Supervisor
Ali Shahbazali

Donate

Jumana Darwish

Donation has an enormous impact on cultures, regions, societies and even the entire world. It is not just about giving; it is about contributing to making a positive change across different societies. Solving one of the biggest problems that the world is facing "Poverty" classifies this project as high impact. Parallel to its worldwide humanitarian potency, donation is an integral part of Islam, the Bahraini primary religion.
The purpose of the project is to contribute to reducing the implications of poverty. The proposed solution is a web-based application that automates donation process. The solution is expected to encourage people to donate, help third-party organization collect and manage donation transactions. In addition, the solution will help in reducing the issues caused by using the physical containers. The project follows the System Development Life Cycle (SDLC) to develop a robust Content Management System (CMS) infrastructure and build an interactive web-based application. The web-based application will be developed through "agile" methodology using various levels of prototyping to build a User Experience Design (UxD) and Interaction Design (ID). The complete solution is validated and tested using World Wide Web Consortium (W3C) Validator. The automation of security controls adheres to Amazon Web Services (AWS) framework.

Project Supervisor
Cyril Antony

Containerized Software Platform

Husain Ali

Infrastructure deployment is a critical aspect of software development. The success of any application depends on building a robust supporting platform. Because different software frameworks have different requirements, it can be very challenging and time consuming to configure the required environments on different developer machines as well as different servers. Application containers are the major technology that has risen to support application deployment and development. Containers are being utilized increasingly nowadays for development and production environments, and this has improved the overall software development process. Containers however, need to be provisioned, configured and managed in terms of networking, storage, replication, security, load balancing, and service discovery. This can be done manually although it is more efficient to automate such tasks. There are several existing solutions for automating container related tasks. This project explores the design and implementation of an infrastructure that will support the deployment of a containerized cloud PaaS (Platform as a Service) system. Said system will be used to host a developer workspace service which will automate development and testing environments for various software stacks.

Project Supervisor
John Ross

Hack a Bank

Reem Neama

Securing information and data is one of the main important aspects of any organization, especially if its classified. Banks collect personal and sensitive information about their client's holdings and accounts, thus leading hacker's attention. Due to this reason, it is always recommended to have a penetration test from time to time in order to prevent sensitive information leakage. This thesis focuses on the ways on how to protect a bank from being attacked by hackers and will provide different scenarios in which the bank can be hacked. According to the statistics, it has been proven that the amount of cyber-attacks has been increasing year by year, which makes the banking industry around the world in danger. Studying Ethical Hacking and understanding all the hacking types and concepts felt like a challenge to me. I must prevent hackers from hacking by thinking like them. There will be a detailed explanation on each hacking scenario including the steps taken in order to execute the attack. The website that I will be using in this project was developed by me for testing purposes and the data inside are not authentic. The result will help the banks in Bahrain to be secured from hackers.

Project Supervisor
Muhammed Ateeq

Memoirs

Amira Tallaq

Escape rooms are locked areas that contain puzzles which players must solve to unlock it and escape. These are a popular form of entertainment, not only between friends, but also in the workplace as a form of teamwork building and communication between co-workers. However, the underlying issue is that the cost can be expensive for casual players. Popularity of escape rooms in Bahrain is slowly decreasing due to this problem. Therefore, this project aims to provide a more cost-effective alternative to escape rooms with the same experience that one would find at a physical room. This is done by developing the project in Unity3D game engine and Mono-develop IDE, using C# object oriented programming. The chosen title revolves around the game's theme and storyline, giving it a feel of mystery and induces anticipation for the player as they slowly discover the title's meaning by progressing through the gameplay.

Project Supervisor
Paul Farrell

Industry Portal

Husain Saeed

Integrating work experience within the curriculum is proven to bridge the gap between industry and academia. The collaboration between higher education and industry contributes to producing a work ready graduates. Since its inception in 2008, Bahrain Polytechnic (BP) have been developing partnerships with Industry. This project is part of BP mission of producing graduates equipped with 21st century skills necessary for the needs of the community. Currently, several departments in BP track Industry Partners' details and potential projects and placements requests in excel spreadsheets. As such, inconsistent or redundant information created issues. This project aims to facilitate the communication between those departments, students, and industry. The proposed solution is a modular web-based application with a front-end and centralized back-end that serves multiple users and automates the current processes. The solution maintains industry partners and projects information, helps Industry Project Coordinators allocate students to work placements and archive related. The web interface is developed using HTML, CSS, and PHP to create and present the website. The backend is designed using MySQL on Microsoft Azure as a cloud platform.

Project Supervisor
Dr. Philippe Pringuet

Envoy

Maleeha Muzafar

Advertising is an essential element of marketing that is adopted by industry for promotion purposes. It is majorly used for capturing the target audience's interest, raising awareness, and promoting new products and services. Mass advertisement in Bahrain uses a range of tools including printed content such as newspapers and billboards. Once advertised, the content becomes obsolete and requires another cycle for replacement. Hence, many industries reduce their promotional campaigns by using social media accounts. This approach makes digital discovery sporadic and limited. This project aims at overcoming these issues by utilizing a standardized, cost-effective and easy to access platform for advertising services. The proposed solution is an Android App entitled "Envoy." The solution uses a range of technologies namely: Backend-as-a-Service (BaaS), NoSQL cloud database, Application Programming Interface (API), Java, and XML. The solution also utilizes Object-Oriented Programming in developing the front end. It allows advertisers to post, manage, and track their advertisements. Advertisers can also promote their events, and create registrations and tickets. The solution enables advertisers to generate useful reports for their advertisement. The target audience can register, search, rate, review and share the published content.

Project Supervisor
Paul Farrell

PanaceApp Self-Diagnostics

Fatema Hasan

One of the most significant issues in public healthcare centers in Bahrain is the human congestion. This issue is influenced by the patients' lack of awareness about the nature of their conditions. Patients are often unable to make informed decisions about whether they need to see a healthcare professional. Their lack of knowledge of their conditions and symptoms that are attached to it result in another issue that is inaccurate diagnosis and treatment. This cycle of faults calls for exploring new ways for reducing the large human congestion and validating the diagnosis process. This project developed through the system development lifecycle aims at increasing the patients' awareness and promoting self-diagnostic strategies. The proposed solution is an integrated cloud-based mobile application that utilizes infographics and Application Programming Interfaces (API). The solution facilitates access to certified healthcare databases to bring data right to the users' hands. Patients then can make informed decisions on when to seek healthcare providers' assistance. Thereby, reducing the load on public clinics and improving the diagnosis process.

Project Supervisor
Dr. Alan Oxley

True Tourism

Sayed Mohamed AL Najjar

Tourism is a benefactor of many countries, it contributes to the gross domestic product. To attract tourists, it is required to have a means for raking sites based on tourist's experience. This project is about helping tourists make decisions about sites to visit in countries and locations with a rich history. Tourists find it difficult to visit important sites. This is due to their lack of knowledge about the existence and location of such sites. Most importantly, the language barrier makes it difficult to explore sites in foreign countries. People rarely reflect on their experiences of visiting sites, and if they do, they usually use their local language. There is also lack of descriptions about the importance and background of historical sites and people's experiences. Therefore, this project proposes a multi-lingual web-based application with a front end that allows users to reflect on their experiences in the form of metered reviews that are stored in a backend for data mining and profiling. Thus, this will help to notify and to guide the tourists to get their best experience in Bahrain. Results from this project support the hypothesis that using a web-based application provides means for finding information about touristic sites and help tourists make decisions. This product is expected to increase the touristic visitor rates and improve the visiting experience in Bahrain.

Project Supervisor
Abdulmonem Ali

Journey of Life

Omar Buhammood

The mobile gaming industry is on the rise. Most people use Smart Phones in their daily lives. Students usually find it difficult to make sound choices related to their academic future. The objective of this project is to provide the society with a tool that contributes to developing decision making skills among students. The proposed solution is a creative game that guides the players to make sound and informed decisions in their academic life. The game will give the player full control over what they want to do or what they choose to do, and it will affect their endings, so each player can see how their choices can and will affect them, both academically and socially. The game development follows (SCRUM), an Agile framework for completing complex projects, and is widely used in the game development industry to prioritize the players' game experience, emphasizing on the development and engagement of the users. Using this methodology enables the division of the project into manageable tasks. The development process will be done on Unity3D, a game engine that allows for 3D and 2D development for a wide selection of platforms, including Android which is the platform of choice for this project.

Project Supervisor
Abdulmonem Ali

Sawyer Academy

Lulwa BuAli

Flexible education has a critical aspect of teaching and learning. It empowers students by offering them choices in how, where and when they learn. Communicating with specific groups within an education institution is ambiguous. However, broadcasting nonrelevant information to users loses its intended objective and causes network congestions. The educational community (learners, administrators, and academics) is growing in need of specialized skills and knowledge. Therefore, stratifying the target audience into different groups based on specific criteria. This method ensures sending relevant information that would possibly contribute to enhancing the learning process in default of network congesting. This project realizes the needs of Ministry of education for a reliable, secure, and converged infrastructure. The proposed solution is a digital communication tool that employs multicast-based services for streaming multimedia educational content. The solution provides users with a flexible and convenient method that offers demand opportunity. The purpose of this project is to propose a solution to live streaming of lectures and online video-on-demand courses in universities. This solution is expected to facilitate the communication in educational institutions for both students and teachers.

Project Supervisor
Mahmood Al Hamad

LTE Backbone Routing Investigation

Mustafa Marhoon

The Long-Term Evaluation (LTE) standard, is the latest version of wireless generation. There is a salient shift worldwide towards LTE as the primary standard for communications. Failure to maintain the availability of the communication causes a massive loss for service providers. This project aims to compare between three routing protocols that are used to connect network devices. The three protocols are namely: RIP, EIGRP, and OSPF. In Addition to accentuating the characteristics of those protocols, a comparative analysis will reveal the one with the highest tendency to ensure mobile and computer network availability and convergence. This project entails a simulation testing by including a link failure and recovery process. The design of the network ensures an optimized and reliable topology using Optimized Network Engineering Tool (OPNET) simulator. The project endeavors to reach to the best choice that enables service providers to offer a continuous and highly available communication. All the results are documented to support the choice of the best routing protocol based in the 3GPP standard technical specification and the International Telecommunication Union Recommendations (ITU-R), which will be beneficial to the service providers.

Project Supervisor
Mahmoud Al Hamad

A Monitoring System for Detecting Abnormalities in Data Centers

Duaa Darwish

Monitoring assists operators to comprehend the performance of their networks. Companies regardless of their organizational backgrounds use computer networks to connect multi-servers to manage storage and digital services. Depreciation of those services due to failure, downtime, or security breaches affects employees' productivity and the overall revenue. The inability to detect the source or outcomes of these incidents within the network escalate these issues. Monitoring the overall performance of organizational networks ensures early detection of defects and warnings. This project aims to enhance the network monitoring and management operations, reduce financial losses, and increase network utilization. The proposed solution is a web based dashboard that queries a database to process and present statistics and reports to the administrator to allow the identification of issues. The final product is developed using Python Programming Language and ready modules. The information stored in the database is gathered from the network devices using Simple Network Management Protocol (SNMP). The project is developed following the Rapid Application Development (RAD) approach which emphasizes rapid prototyping and iterative delivery.

Project Supervisors
Dr. Christos Gatzoulis & Dr. James Egan

Programming Work-Placement

Any delivery of software/hardware products requires participation of individuals with strong programming skills during both development and maintenance. The Programming Major Programme focuses upon the design, implementation, and maintenance of software-based systems. Students learn to work with the most widely used programming languages and platforms in the global market.

Typical positions for the Programming graduate:

- Software Developer
- Software Engineer
- Apps Developer
- Games Developer

Technologies Bahrain Polytechnic Programming students are familiar with:

- Java
- C#
- XCode
- Android
- Swift

Project activities include:

- Analyse client needs and produce a set of requirements to initiate a process of system development
- Design solutions for a problem description based on a given set of requirements and taking into consideration the appropriate development tool.
- Implement systems based on a given design document
- Implement software using rapid prototyping
- Implement integrated systems that may use a graphical user interface, databases and sophisticated hardware.
- Prepare a test plan for a given project.
- Test and Debug existing programs based on a test plan.
- Provide a complete set of documentation for a range of audiences ranging from technical reports to user manuals.

Management Information Systems Work-Placement

The Management of Information Systems (MIS) Major Programme focuses on specifying, documenting and implementing a system which meets the needs of the customer.
The main focus of this major programme is on the role that technology plays in providing an individual or an organization with the ability to plan, design, configure and administer the appropriate information system.
The BICT degree - MIS Major provides the foundation for analysis and design of information systems, the various operating systems suitable for the tasks and the knowledge of applications to provide solutions to business problems.

Typical positions for the management of information systems major programme the graduate may lead to:

- Systems Analyst
- System Architect
- IT System Administrator
- IT Support Analyst
- Infrastructure Support Specialist

Project activities include:

- evaluate various operating systems, database management systems and network architecture and make recommendations based on these evaluations
- analyse user requirements and design an appropriate information system infrastructure
- design and develop an infrastructure for an information system that is fit for purpose
- develop an information system from concept to implementation

Bahrain Polytechnic Management Information Systems students are familiar with:

- Planning, requirements gathering, analysis and design for an information system
- Unix, Linux and Windows Operating Systems
- E-commerce and M-Commerce Infrastructure
- Enterprise Resource Planning
- Virtualization and Cloud Computing
- Data Center, Storage Management and IT infrastructure
- Multi-tier systems' Configuration, Installation, Deployment, Migration and Integration

Database Systems Work-Placement

The Database Systems Programme provides the students with the knowledge and skills necessary to design, implement, program and administer a database system. Database students understand the principles of database systems and can implement database projects using a range of technologies. The experience will be in a practical, real world context which will empower them with the skills required to work with databases in an industrial environment. Students will have knowledge of some different Database Management Systems, depending on their chosen major. Typical positions for the database systems major programme graduate include:

- Database Designer: Responsible for the production and design of a database from conception to physical design using modeling techniques.
- Database Developer: Involves design of the database as well as maintenance and development of the existing database in line with the needs of the business.
- Database Programmer: Will work with existing and new databases to implement the business logic of the database system using database programming techniques.
- Database Administrator: A DBA integrates several roles and tasks required of database professionals. They would design, implement, maintain and improve the performance as well as develop databases.
- Bachelor of Information Communication Technology - Year 4 Cooperative Learning Project

Project activities include:

- design a database suitable for the efficient storage of data, while conforming to industry standards and best practices.
- using query languages, store, retrieve and manipulate data.
- using appropriate tools to design, implement and maintain database web applications.
- plan, implement, maintain and troubleshoot database systems.
- use database programming to solve business problems.

Bahrain Polytechnic Database Systems students are familiar with:

- Database modeling techniques
- Data Definition, Manipulation and Control Languages
- Database Programming Languages
- MySQL Workbench, PHP, and Database Management System
- Oracle SQL Developer and Database Management System
- Microsoft SQL Server
- Oracle Application Express

Networking Work-Placement

The Networking Major Programme focuses upon the skills necessary to design, implement and maintain a computer communication network. All students in the BICT department learn about Computer Networking using the state of the art BICT server room. The server room allows all student activities and projects to be done in a hands-on way giving the students practical work ready skills.

Typical positions for the Networking Major Programme graduate are as follows:

- Network Administrator
- Network Applications Developer
- CCNA/CCNP Engineer
- Network/Information Systems Manager
- Information System Security Officer/ Cisco Security Specialist
- 2G/3G/4G Mobile Telecommunications Engineer

Bahrain Polytechnic Networking students are familiar with:

- CCNA Exploration: Network fundamentals, TCP/IP, IP addressing and sub-netting, static routing, routing protocols
- (OSPF, EIGRP, RIPv2) VLANs, Inter-VLAN routing, wireless access point configuration, WAN technologies (HDLC, PPP,
- Frame Relay), NAT CCNA Security: firewall implementation, AAA (Authentication, Authorization and Accounting), access-lists, intrusion prevention, site to site VLAN, Remote VLAN
- Wireless Networking: 2G (GSM, EDGE, GPRS), 3G (UMTS, HSDPA) 4G LTE (HSPA)

Project activities include:

- configure and troubleshoot network devices.
- design and build a scalable internetworking enterprise network
- use Wide Area Network (WAN) technologies.
- implement secured network infrastructure and security policy.
- perform a risk analysis on the company's network with respect to network architecture security, authentication, encryption, network security applications and appliances, firewalls, virtual Private network and intrusion and detection systems
- apply knowledge of wireless and mobile data communication technologies to design and implement mobile communications solutions

Cooperative Learning Project (CLP)

Database Systems

Restaurant Reservation System

Fatema Alansari
Elephant Media

The Restaurant Reservation System is a web application commissioned by Elephant Media. It is an online system allowing users to make table reservations at participating restaurants. They can browse available restaurants, view their information, and choose their location, party size and time slot for the booking. The restaurant employees and manager can review these bookings. They can manage the bookings, and cancel or edit if needed. They can review their restaurant's analytic data, which is updated live with every new booking or change. The system is built using the MEAN stack (MongoDB, express, AngularJS, Node.js) technologies. It is built in a three separated layers format. It uses MongoDB for the Data Layer, Node.js and the express framework for the API layer, and AngularJS 4 for the front-end web layer. The API layer and the Web layer are two separate applications, communicating together. The API communicates directly with the Database, while the web application communicates with the API. This structure increases security, reliability and makes it easier to develop other front-end applications, such as mobile applications. This application serves as the foundation for a much larger system being developed by Elephant Media.

Project Supervisor
Malcolm McKenzie

Mentor
Omer Rana

Management Information Systems

IT Helpdesk Support System

Adam Haroon
Silah Gulf

The aim of this project is to create a solution that supports and enhances the IT help desk and asset process at Silah Gulf (Silah) and replacing their old system of using papers to raise tickets. The solutions will provide the end user with all the information, services and support to ensure quality improvement, reduce cost, process efficiencies and accessibility. The system has been developed by using Microsoft System Center Service Manager 2016 (SCSM). By utilizing the service manager, incident, create request and change request offerings will all be deployed. Also, managing the software and hardware of Silah users will be done through the system. Each request offering contains the necessary information and questions for the end user to resolve any request. Moreover, custom reports can be created at any time if needed.

Project Supervisor
Osama AlAbedallat

Mentor
Humood Abdulla

Hala Bahrain Airport Hospitality System (AHS)

Bashayer Alsadadi
Bahrain Airport Company

Bahrain Airport Company (BAC) was looking to develop an ICT business solution that supports online meet and greet service for its new subsidiary Hala Bahrain. The aim of this solution is to increase the efficiency for booking services along with maintaining the core operation's level through a single platform maintaining the integration to all other BAC systems. Hala Bahrain Airport Hospitality System (AHS) has been developed as a web-based application that is hosted in a cloud-based stack. It enables passengers to select, book and modify services they require, along with enabling a back-end office to monitor bookings and payments in a web-based back-end system. This system has been deployed in a cloud environment to produce a highly available system through servers' redundancy.
Hala Bahrain AHS has been implemented following an MVC (Model View Controller) framework. The user interface has been designed using XHTML and CSS3 mark-up languages. The body of the system has been developed using ASP.NET C# programming language that interacts with a SQL server. The final system has been deployed on a cloud platform.

Project Supervisor
Malcolm McKenzie

Mentor
Ali Humaidan

KFH Workflow Management System

Fatema Husain
Kuwait Finance House

The aim of this project is to create a solution that improves the current paper based processes at KFH-Bahrain. The current issue includes inefficiency of managing the paper based processes and the long duration it takes to process which causes delay in employee's tasks. The solution will increase the efficiency in managing the processes by digitizing them. The system allows end users to perform several tasks based on their role in the bank which also minimizes the process duration. By using SharePoint 2013, employees at KFH-Bahrain are authorized to manage forms and business workflows. They are also able to add comments, generate reports, fill quality surveys and add system feedback. The administrator is able to manage the forms, upload quotations, search forms and change a form's status. Using Windows Server 2012 R2, which provides centralized management and configuration of operating system and applications, group policy has been implemented to restrict certain functionalities.

Project Supervisor
Bassam Bokhowa

Mentor
Mohammed Yateem

Nass Software Deployment System

Fatema Muhausien
Nass Contractor

Nass Contracting Co W.L.L is a company that has many of staff working off-site on constructions projects with other big companies such as Alba. The IT department is experiencing time constraint with the process of installation of PCs. They are therefore seeking a system that would replace the time-consuming manual installation of operating systems and software to set up each PC and instead provide a management process for a large group of computer and network devices. This project was developed to solve the problem by building a server with a virtualized environment in Hyper-V that focuses on deploying Windows 10 OS and multiple numbers of software to a group of PCs connected to the company's network. The project has been implemented using System Centre Configuration Manager 2012 R2 (SCCM) software, the market leader system management product for managing a large group of computers and network devices. It provides operating system deployment (OSD), software distribution, license information, remote control, patch management, hardware, and software inventory. The project uses windows server 2012 R2 for the server platform, SQL server 2012 R2 to store the client PCs data, Windows Assessment and Deployment Kit (Windows ADK) and Windows Server Update Services (WSUS) as a prerequisite for SCCM.

Project Supervisor
Bassam Bokhowa

Mentor
Maryam Shafiey

IT Assets Management System:

Khadija Hasan
Silah Gulf

The aim of this project is to create a solution that handles the IT Asset and Helpdesk management at Silah Gulf Company. The solution will save time, reduce cost, increase the quality and efficiency of work as it will provide better support and allow faster implementation of changes. The system was developed using the latest release of Microsoft System Center Service Manager (SCSM 2016) which provides an integrated platform that could automate and adapt the IT service management of any organization. The product consists of service manager console, database warehouse, and orchestrator to automate the management process to Silah users.

Project Supervisor
Osama AlAbedallat

Mentor
Humood Abdulla

Management Information Systems

Intranet for Royal Hospital for Women (RHW)

Yusuf Hussain
Azimuth

The aim of this project is to provide the staff of Royal Hospital for Women a central point of reference, where the staff can find each other as well as important information virtually. This solution will reduce the time it takes for paper-based information to get around the hospital, while also increasing efficiency by implementing and using a 21st century technology in a professional manner. Using SharePoint 2013 SP1, staff at the hospital will be able to request leave, add comments, share documents, post notifications, and suggest changes to particular practices at the hospital. Users will be able to contact each other and share important information instantaneously. Also, considering how hospital staff are always on the move rather than stationary, they will be able to access SharePoint through mobile devices, which will further reduce the time taken for paper-based information to reach them. This project provides the administrator the ability to monitor the health report such as the delay time to access contents on a site, inbound and outbound traffic, as well as most popular items on the site. Also, the users can view the status of their request through the three-state workflow work from the time they file for a request, up until the response has been given. SharePoint will allow the users to manage daily operations, view clinical policies and information relevant to their department, while also having a section acting as self-help for leave requests, rules and regulations, and filing a complaint.

Project Supervisor
Dr. James Egan

Mentor
Husain Alaam

Networking Projects

Royal Diwan new headquarter Network Design

Abdulrahman Althawadi
Royal Diwan

The aim of this project is to create a new network design for the Royal Diwan new headquarter. The old network has a lot of gaps that could put much sensitive data at risk. The solution has raised the cyber security and protected the network from any threat. Also, it provided a high quality of service network to be used by Diwan's employees efficiently and effectively. The new network offered redundancy to avoid any obstruction during working hours. Finally, the solution has been designed and developed using Cisco equipment and it has been simulated using Cisco simulation tool, Packet Tracer.

Project Supervisor
Mahmood AlHamad

Mentor
Amr Mahmood

CUCM Implementation for Telephony System at Bahrain Airport

Ali Falamarzi
Civil Aviation Affairs - Meterological Directorate

The Project CUCM Long Range was developed for Bahrain Civil Aviation Affairs. It was created to serve Bahrain International Airport current Terminal 1 and the future Terminal 2. It is a product that operates using VOIP technology on CUCM and CUPS version 11 servers, which reduces cost and adds more features to the telephony service. It was developed to eliminate some of the problems in the telephony service such as the inability to monitor telephone lines. It also enhances the telephone service by enabling instant messaging features. What makes this project unique is that the employees of the company can use their mobile phones to send/receive calls or messages instead of using fixed lines. The project was implemented in Cisco Jabber software which supports many features such as voice/video calls, instant messaging, and presence detection on the end devices.

Project Supervisor
Mahmood AlHamad

Mentor
Ali darwish

Management Information Systems

VIVA ITO

Sakeena Alkhabbaz
HUAWEI

An ISP network was simulated and configured with various technologies and protocols to provide secure internet connectivity to end users and to perform daily business functions. The simulated network has been configured with external routing protocols to exchange reachability information between Autonomous Systems (AS) as well as internal routing protocols to exchange information within the network. Also, advanced switch features are configured to provide scalable, redundant and secure networks. Moreover, a connection is established between the network and other ISPs using site-to-site VPN. The network is designed and configured to provide the ability to employees to connect remotely to the network through a VPN client, as well as sharing files using FTP server. The network is monitored and managed using Network Management System (NMS) which also uses Simple Network Management Protocol (SNMP) to collect information about devices. The network simulation is configured through GNS3 network emulator and has an integration with VMware Workstation to add virtual machines, configure them with systems and technologies which enhance the network functionality.

Project Supervisor
Mahmood AlHamad

Mentor
Samir Grashi

IP Telephony Services Deployment in the Royal Hospital for Women (RHW)

Zainab Alhammar
Azimuth

In a medical setting, handling time-critical decisions and facilitating immediate consultations require doctors, nurses and other healthcare professionals to be in touch and accessible regardless of their location in the facility. As a result, RHW chose a proposal by Azimuth which contained the variety of IT solutions required by the hospital and included the telephony system based on Cisco's advanced network architecture. RHW worked with Azimuth's team to develop a plan, design, and deploy modern IP telephony system to ensure a seamless cutover of the new phone systems across the hospital network. The new solution was built on the RHW's existing network infrastructure. It incorporates Cisco Call Manager IP telephony platform and integrates with other systems via Cisco Unified Communications Manager (CUCM) and Unity Connection for voice mail. In particular, CUCM solution improves collaboration and allows RHW's end users to communicate more effectively using either internal or external connectivity. The new system meets RHW's urgent need for IP telephony, while providing a scalable platform.

Project Supervisor
Dr. James Egan

Mentor
Husain Alaam

Programming Projects

MYS Admin eService

Ali Alabbasi
MYS

The aim of this project is to develop a solution that enhances the process of requesting Admin Services at The Ministry of Youth and Sports (MYS). The automated Admin Services follows the process of MYS and notifies users when a request and approval is due. The solution has been developed using SharePoint 2013, Nintex Forms 2013 and Nintex Workflow 2013 which allows the system to send email notifications to the concerned parties allowing them to follow up with the request process, retrieving data from the data lists, filtering and updating them. The solution provides the admin with real-time Business Intelligence (BI) reports that show the performance of the specialists assigned to each request and provides quality report for each specialist. It features a dashboard that the admin employees can use to keep track of their requests in the system and a timeline that shows the progress of each request individually.

Project Supervisor
Dr. Philippe Pringuet

Mentor
Shaikha Eid

Students' and Graduates' Achievements 2017

Best of Nation:

BICT student Maleeha Muzafar Ismail has been awarded "Best of Nation" representing Bahrain Polytechnic during the World Skills Competition that took place in Abu Dhabi, UAE from 14th to 19th Oct 2017.

Best eConcept:

4th Oct 2017, Batool Sabt (BICT Graduate) has been awarded Bahrain Best eConcept for her ICT Project entitled «Automating Driving Training School», developed for Bahrain Traffic Department.

Students' and Graduates' Achievements 2017

Work Experience:

Alumnus Ali Talahi completed Sales Training Programme in Cisco Amsterdam Area, Netherlands and Joined Cisco Middle East Head Quarter in Dubai as Virtual Sales Account Manager

Industry Engagement Experience:

BICT students engaging with industry during Bahrain 6th Annual SMEs Day - Cloud Commerce Session.

Students' Experience

Abeer AlRumaidh

The Cooperative Learning Project is a semester-long course. It was one of the most exciting and challenging semesters during my studies at Bahrain Polytechnic. It was a fantastic opportunity to work on a commercial programming project. I was able to implement it by using the knowledge and programming skills that I gained throughout my degree. This work placement helped me improve myself as an ICT developer. Working with a challenging team who was supportive and helpful as well gave me the confidence to apply my skills to a real project.

Ebrahim Hassan

My work placement was at the Ministry of Information where I have been working for five years while studying. It was an enjoyable opportunity to undertake this semester long course at my job. Using new technologies and employing the best business practices to meet the ministry's standards was my ultimate goal. I enjoyed this experience in which I received full support from my academic supervisor and mentor. I got the chance to have them both collaborate on a real product that will be used by the ministry.

Husain Ali Moosa

The last two semesters were very helpful in improving and applying my skills to different projects. I worked on two projects at Huawei. This project allowed me to explore the competitive world of industry. I was able to cooperate with a team of professionals as a team player. I improved my employability and technical skills learned during the academic period in Bahrain Polytechnic. Being Responsible for my assigned tasks was stressful, but I was able to manage myself and the allocated tasks by following the scientific approaches we have learned at the Polytechnic.

Hawra Albahrani

This semester was the most challenging yet exhilarating one. Working on a real-world project and real client on developing a solution that will be used by the public was very exciting. I put my development skills under stress test and learned new programming techniques and language in a new environment. I found that implementation with a team of professionals is as important as gaining knowledge in an academic environment. I feel that I need to genuinely develop my employability skills as a programmer who will pursue this field as a career.

Muna Ali Ahmed Kadhem

During the Cooperative Learning Project, I have gained valuable skills on top of my degree. I had the opportunity to apply my database programming and software development skills in a real-life project. The technical obstacles I faced during the planning and execution phases were challenging but enjoyable. I am delighted to see a living benefit from applying the scientific approaches and methodologies we have learned throughout my studies at the Polytechnic. Not only I got to finish my bachelor degree, but I was also offered a full-time job with the same inspiring team. I am glad that I had this great experience.

Alanood Mohamed Saad Isa

The Cooperative Learning Project (CLP) is one of the most exciting courses. I wrapped a real life experience, and it was a tremendous learning! I have used all of the knowledge that I have gained from my studies to successfully implement the project. Working with a real client has helped me improve my employability skills, and now I believe that I am ready to undertake a full-time job.

Graduates' Testimonial

BICT graduate Ahmed Mohamed Jawad Atshi
Information Technology Analyst
Bahrain Flour Mills Company B.S.C.

"I worked in the IT department at the Bahrain Flour Mills Company B.S.C., the most important aspect is that I was given responsibilities with right guidance and directions which prepared me for the job market. I was given the "Network Infrastructure Analysis" as my project at the company. The experience profoundly enriched my knowledge. I feel more confident now, having had a work exposure that has certainly improved my chances very highly by equipping me with the employability skills I need. The guidance from B.ICT faculty along the mentoring from the Flour Mills team contributed to my success."

BICT graduate Husain Hameed
Integration Engineer
Ericsson AB

"I am working in the Business Support Solutions (BSS) domain at Ericsson AB. The most important aspect of my job is that it offers the opportunity to learn and develop my competence besides working. It is also very inter-related to my Bachelor degree in Bahrain Polytechnic."

Work-Placements' Testimonial

Andy Doubin
HR Director
Huawei Bahrain

In the new era of digitalization, the youth will play a big role in the success of the ICT industry. Huawei Bahrain is committed to work with the academia to develop the skills of the future ICT leaders and nurture their talents. This will help enable them to fulfil their future position. We are very happy with the mind-set that the undergraduates demonstrated during the internship period. Their working attitude, professionalism, and enthusiasm to learn shows us that they are eager to develop their ICT skills. Huawei looks forward to further partnering with Bahrain Polytechnic to create more value to the young generation of the Kingdom of Bahrain.

Work-Placements' Testimonial

Reza Memari
IT Technical Superintendent
Information Technology and Knowledge Department
Gulf Petrochemical Industries Co. (GPIC)

It was a pleasure and a truly remarkable experience to attend the exhibition and interact with Bahrain Polytechnic students. The Projects on display – in a very well-organized venue – were full of innovative ideas and interesting subjects. Several Projects even had the potential of realization and having commercial viability.

What was very noticeable indeed, was that the talented students there demonstrated extraordinary confidence and presentation skills in addition to the technical capabilities required for achieving their goals. It was apparent that considerable efforts were exerted by the university faculty supervising their projects and guiding the students.

Moreover, the enriched panel discussion by experts from the industry that concluded the day added a lot of value to the event. The experienced individuals discussed some very important topics, and shared great views about the future of partnership between the industry and the education sectors.

Ramzan Alnoaimi
Director Of Judicial & Legal Studies Institute
Ministry of Justice & Islamic Affairs and WAQF

The Judicial and Legal Studies Institute (JLSI) is mandated with providing training for members of the judiciary and public prosecution, as well as public sector legal staff and lawyers in private practice. JLSI is also tasked with conducting research in areas that have a high impact on judicial and legal practice in the Kingdom of Bahrain and the region.

This is the first year that we accommodate an intern from Bahrain Polytechnic. It was a pleasant and remarkable experience to have Reem Alattar as part of our family here at JLSI. She showed a strong motivation and commitment in developing a Mobile Application that will help us with implementing our strategic plan to improve our electronic services. It will bring our services right to the hands of our clients.

We are gladly looking forward for receiving more interns from Bahrain Polytechnic in the future for what we had felt in this three-months experience of achieving required objectives with such a talented student.

Work-Placements' Testimonial

Denzil Ayan
Application Developer at BIPA

Mohammed Ehsan has been one of the most hard working and focused interns that have worked with us; he has a phenomenal work ethic and is ready to take on challenges. In BIPA, he developed the BIPA Helpdesk System, which was a major requirement of ours, and finished it to perfection. He will be an asset wherever he works. We wish him all the best for the future and hope that his internship experience will help him in his future endeavors.

Maroua Ouerghemmi
Reliability Engineer
APM Terminals Bahrain

It's a pleasure for me to inform you that the management of the company has recognized BICT Cooperative Learning Project (CLP) Student Husam Yusuf outstanding efforts. The company has vigilantly monitored and evaluated his performance the past three months. It was analyzed that he showed persistent efforts and self-driven qualities. His performance was exceptional. Employees like him who work with sheer dedication are an asset to the organization.

I feel very proud of the project he submitted. It was excellent, he showed dedication, perseverance and willingness to complete in the given period. He is highly motivated and would be appreciated in any company as he was a great attribute to our organization in such a short time.

Work-Placements' Testimonial

Ameer Yousif
Founder & CEO
Tree Projects

At Tree Projects, we are delighted to collaborate with Bahrain Polytechnic to prepare work-ready graduates. This is aligned with our strategy to engage fresh Bahraini talents in our innovative true e-commerce projects. In addition, it comes as part of our social responsibility to give back to the community.

Over the past two years, we successfully engaged several CLP students in our projects, where in addition to gaining the basic knowledge and hands-on experience, they had the chance to experience the working culture.

The students had the opportunity to learn more about us as a potential employer, while we learned more about them. Our internship opportunities enable the students to use what they have learned, expand their knowledge and benefit from invaluable on-the-job experience. The program is a great way to explore the career choices that lie ahead of them.

Our experience with most of polytechnic students that they have better understanding of the market needs with high professional standards and simulated work experiences. This gives the polytechnic a high reputation of great quality students. We are proud that most of our staff are Bahrain Polytechnic graduates.

Ammar Z. Ali
Founder and Managing Director
Maroon Frog

Our relation with the program was always successful, and we have received the best of polytechnic students that have professionally developed their skills while working at our company as interns to develop fully-fledged solutions and later were recruited for full-time positions within maroonfrog.

Recruiting the students was proof that they are ready to take direct responsibility and accomplish tasks. Because Students were well oriented, we can complete our projects efficiently.

My advice to students: Develop your strengths and discover what you are good at; learn to work with others; embrace criticism and lose your ego; collaborate with the problems, tools, and people you have at hand; learn something new with each project. My last advice is to have developer friends and become an active member of the developer community and join your local meetup groups to discuss problems you are facing, learn from others and sharpen your skills.

Game Jam

During 1st to 3rd March 2018, an exciting opportunity will emerge with Bahrain Polytechnic hosting the “GCC Game Conference” and the “2nd GCC Game Jam” in collaboration with INFINITEWARE.

A Game Jam is a 3 days intense game development event, during which participating teams are required to develop a game from scratch on a given theme. This is the 3rd Game Jam organised by our consortium. Building on the success and experience of the previous events, we decided to extend the impending Game Jam to include a full-day Game Development Conference and Exhibition, that will bring together talents from the region for professional networking and sharing of success stories.

The GCC Game Conference and Game Jam is a vibrant part of developers here in Bahrain and in the Region and one that we wish for your company to be involved in. I look forward to your reply to discuss our sponsorship opportunities for this exciting event.

Dr. Christos Gatzoulis
BICT Programme Manager, Bahrain Polytechnic
www.gccgamejam.org

Partners

Batelco

البحرين EDB
مجلس التنمية الاقتصادية

فرصتي

THINKSMART

تمكين
Tamkeen

START UP BAHRAIN

Bahrain Polytechnic
PO Box 33349, Isa Town
Kingdom of Bahrain
+973 1789 7000
+973 1789 7009
info@polytechnic.bh
www.polytechnic.bh