Graduation Project Topcis for Fall 2015

Proposed By Faculty

Department of Information Systems

College of Computer Sciences and Information Technology

April 2015

Important Notice for Students

This document contains Graduation Project topics proposed by the faculty member of IS department. If a topics inspires you, please talk to the faculty member who has proposed it to check availability of the topics, fill the Project Pre-registration form and get it signed from the supervisor. The female students are required to submit the pre-registration form to to Ms Janice Dela Vega and male students to Dr Qazi Mudassar Ilyas.

The students are strongly encouraged to propose their own topics for graduation projects. The students should read Graduation Project Handbook for guidelines for an acceptable graduation project. This handbook is available for downloaded from college website at http://www.kfu.edu.sa/en/Colleges/Computer_Science/Pages/graduation_projects2.aspx. The students should use the following template for proposing ideas and send to Dr Qazi Mudassar Ilyas

Project Title	
Proposed By	
Brief Description	
Expected Outcomes	
Available Resources	
Required Resources	
Specialized Tutoring/Help required from the Supervisor	

Contents

Project Title	**Domain Specific Wikipedia**
Proposed By	Dr Abdelgaffar (ahali@kfu.edu.sa)
Brief Description	Wikipedipedia provides rich content and quick access for information in different domains history ,science , public issues, etc. using internet facilities. In this project a domain specific wiki will be established and a computer science filed will be used as a case study. There is a catalog for courses delivered for many years in the college, will be used as a base to the content, for example terminologies and concepts and for building the hierarchy of knowledge in computer science field. This is expected to contribute to students fast and easy accessibility of domain related knowledge. In addition, Future statics on the body of knowledge could be generated where would be valuable to the college administration
Expected Outcomes	Web site in form of wiki enables : publishing a filed content updating content generating some statistics about content searching the content
Available Resources	Database Technology Web Technology

Skills Required	Database design and normalization
	  Web and interent technology like HTML,CSS.
	  Programming using 3 tier-archietcture , like php, appache server, database connections.

Project Title	**Online Book Order System (OBOS)**
Proposed By	Mr Abdelrahim E. Abdelraof (khatayeb@yahoo.com)
Brief Description	Design, develop and test an application for ordering books. The system will consist of two main subsystems: administration system and user system. The administration system provides: budget administration, email management to send notifications to people involved in a purchase, log of purchased books and support for statistics. The user system is a web application system that permits the creation of book orders. Every time a book is ordered, the order appears in the administration system so that the administrator confirms the order. When a book is ordered, budget information should be kept updated. Statistic information will report figures about types of books that have been purchased. Challenges presented by the project: The challenges of this project can be found in the following areas: • Design and development of distributed systems • Specification, design and development of an application with several subsystems • Data mining techniques for showing statistics
Expected Outcomes	The student will learn: • Carryout a detailed requirements analysis and specification of the problem. • Produce an object-oriented design of a software system to implement development of distributed systems • Produce informative reports and statistics
Available Resources	
Required Resources	
Specialized Tutoring/Help required from the Supervisor	
Skills required	A good understanding of OO-programming and web applications and RDMS.

Project Title	**Web-based Internet Cafe Management System (WICMS)**
Proposed By	Mr Abdelrahim E. Abdelraof (khatayeb@yahoo.com)
Brief Description	The objective of this project is to develop a web based pay-as-you-go cyber internet management system. The system should provide the following functionality • The capability to record the time spent on internet usage for every machine in the internet cafe. • Once a user is logged into the computer, the system should be able to trace every site visited by the user. • A billing system that presents the user with the amount to be paid, once the user logs out. The bill should include the exact times the user connected and disconnected. • Maintaining a database of all internet usage for a customer Challenges presented by the project: Connecting the server to the different client machines in the internet cafe, designing a web based user interface
Expected Outcomes	Knowledge of building real time web based applications and user interfaces
Available Resources	
Required Resources	
Specialized Tutoring/Help required from the Supervisor	
Skills required	Knowledge of DBMS, programming web based applications, programming distributed systems

Project Title	**Wally**
Proposed By	Mr Alaa Zaid Alhowaide (aalhowaide@kfu.edu.sa)
Brief Description	Wally is an application that keeps track of a household's budget. The user can add expenses, income, and recurring costs to find out how much they are saving or losing over a period of time. Furthermore, it allows the user to specify a date range and see the net flow of money in and out of the house budget for that time period. In addition it will be able to track each individual expenses. Wally will provide the reports and statistics in readable and understandable way. Wally will enable the user to store information about every item he/she purchase such as price, purchase date, expiry date. It will be able to generate purchases list based on user request, as it will notify the user when an item is consumed or its expiry -date getting closer.
Expected Outcomes	A graphical mobile or desktop application provide the user with the listed functionalities in the description.
Available Resources	
Skills Required	Knowledge in any high-level programming language Knowledge with any on DBMS (SQL,MySQL, Access) Good background in basic statistics

Project Title	**Patron**
Proposed By	Mr Alaa Zaid Alhowaide (aalhowaide@kfu.edu.sa)
Brief Description	With the increased competition in restaurant business a restaurant management system became crucial for ever restaurant. Patron is a bilingual (Arabic, English) application of restaurant management system that allows managers to manage the restaurant lounge. In which they can calculates the tables and seats that are free, "pushes" tables together, etc. Furthermore, it will provide an easier way to manage reservations and events through time-control, waitlist, table management and validation functions. In addition it enable the managers to track their customers' preferences and store their comments. Also, it will provide the ability to track loyal customers, and notify the user about the incoming events/occasions. Managers can analyze reservation trends and work towards future needs through a vast range of statistical reports. Report about managers, customers, and financials will be provided in the user-friendly interface.
Expected Outcomes	A graphical desktop application
Available Resources	
Skills Required	Knowledge in any high-level programming language Knowledge in any on DBMS (SQL,MySQL, Access) Good background in basic statistics

Project Title	**An Online Tool for Course Assessment**
Proposed By	Dr Amir Khwaja (akhwata@kfu.edu.sa)
Brief Description	Course assessment is a systematic collection and analysis of information to improve student learning. This project will develop an online tool to implement one such course assessment method that maps various grading components at the individual question level to the course outcomes and determines the level of class performance for each course outcome. The tool is expected to allow faculty to define course outcomes for each course, enter and track student grades for various assessment components at the individual question level, map various grading components at the micro level to each outcome, and compute coverage of each course outcome using the mapped assessment components. The tool should output results in a tabular and charts form.
Expected Outcomes	- Development of a prototype online tool - Output in the form of color coded tables and charts
Available Resources	- Details of the assessment method with computation formulas in the form an excel based tool
Skills Required	- Web programming - Database setup and programming - Excel or similar tools integration into web environment - Chart plotting tools integration into web environment

Project Title	**Brain Games**
Proposed By	Mr Awais Gondal (mgondal@kfu.edu.sa)
Brief Description	Research has shown that great benefits come from complex and challenging mental activities [1] [2]. In this era of technology, people demand automation for everything. From simple calculations to searching some information we are using technology and at the same time limiting our mental activity. 'Brain Games' is a smart application that would help users challenge their minds. It will support the users in increasing their mental activity in a fun way. Multiple games will be provided focusing on improving concentration, attention, memorizing, listening, vision and reactions. Along this, users can use 'Brain Games' to pass their spare time enjoyably. References: 1. Dan Hurley, New Studies Show Promise for Brain Training in Improving Fluid Intelligence, April 2014. 2. http://sharpbrains.com/blog/2013/05/22/does-brain-training-work-yes-if-it-meets-these-5-conditions/
Expected Outcomes	A smart application that can be published on a specific application store.
Available Resources	Development Tool Kits Literature regarding activities to challenge mind
Skills Required	Development experience with any programming language (Java, C#) Very good concepts of algorithms Good designing skills Willingness to learn new concepts

Project Title	**e-Diagnose**
Proposed By	Mr Awais Gondal (mgondal@kfu.edu.sa)
Brief Description	Almost all of us experience a situation where we search medical advice or guidance. Usually, we browse multiple websites on the internet to find possible remedies for specific symptoms. E-Diagnose is a handy tool that diagnoses healthcare problems (diseases) on the basis of symptoms provided to it. It provides a list of possible problems on the basis of analysis of symptoms and pre-loaded data, and also suggests possible remedies and cure plans. E-Diagnose is just a helping tool and it does not prescribe or suggest any medicines.
Expected Outcomes	A web based tool that diagnoses healthcare problems on the basis of symptoms.
Available Resources	Development Tool Kits Some data related to symptoms and diagnosis. Detailed data related to symptoms and diagnosis might be required.
Skills Required	Web programming experience Good command on database design and implementation

Project Title	**Office-Hour Broadcasting System for KFU**
Proposed By	Dr Maruf Hasan (mhasan@kfu.edu.sa)
Brief Description	KFU faculty members delivering courses are required to offer regular office-hours for students' consultation regardless of their genders. However, it becomes virtually impossible for female students to interact with male faculty members effectively after the classroom lectures due to cultural constraints. The utilization of office-hour among same-sex faculty and students is poor and often attributed to some cultural factors. In this project, we will investigate how to utilize new technologies including social media to leverage the cultural barriers and promote student-faculty interaction using an easy to use online system. With the help of this system, the faculty members will be able to broadcast themselves via WebCam to his or her students (both male and female students alike) by clicking a button in their Web Browser. Students will be able to ask questions (using audio and chat interfaces). The office-hour session will be automatically archived on the server for administrative and auditing purpose. Students who missed the live office-hour session will also be able to watch the archived recordings at a later time.
Expected Outcomes	A Web-based System to facilitate on-click broadcasting of office hour. Popular technologies currently being used include Google+ Hangouts On Air, Adobe Media Server and Skype TX platforms. We will use Google+ Hangouts On Air platform to develop a system that is easy to use for KFU faculty members and faculty administrators.
Available Resources	KFU faculty members are equipped with PCs and Web Cams on their office desk. With the help of this system, any faculty member will be able to go live on air and initiate an Office-Hour Broadcasting session with the click of a button. Students will be able to join the live sessions using their mobile devices to ask or type a question. The entire session will be automatically recorded on the server. Students who missed the live session will be able to use watch it offline. The university may use the archived office hour sessions for administrative purpose. We will develop a working system an conduct a detail user study after deploying the system at the College of Computer Sciences and Information Technology (CCSIT). [1] Start and Schedule your Hangouts On Air, Quick Guide https://support.google.com/plus/answer/4386744?hl=en [2] Google+ Hangouts On AIR API (Application Programming Interface, Developer's Guide), https://developers.google.com/+/hangouts/api/gapi.hangout.onair [3] Creating a video sharing web application using Flex, Flash Media Server, and Flash Media Encoding Server, http://www.adobe.com/devnet/adobe-media-server/articles/video_sharing_web_app.html
Skills Required	Interested students are advised to try out Google+ Hangouts On Air and broadcast themselves live to their friends first. They must study the Hangouts On Air API to understand how it works. Before agreeing to supervise a group of students I need to check the ability of the students in programming a web-based system.

Project Title	**A Web-based Community News System**
Proposed By	Dr Maruf Hasan (mhasan@kfu.edu.sa)
Brief Description	Running a community news site online with volunteers contributing to news stories valuable to the community is a rewarding experience. There are some commercial and open source systems available for this purpose. However, most of these systems require a cumbersome process to install and configure a news site on a server. In this project, students will develop a news system that asks a few questions to the user through a web browser; and based on the answers, automatically sets up a custom news site for any desired community on a news server.
Expected Outcomes	A Web-based System
Available Resources	Scripting Language (PHP) and Database (MySQL)
Skills Required	Programming (Scripting Language such as PHP) Database Driven Web Application Development Interested students are advised to try out relevant systems PHP Enter (www.phpenter.net) and NEWSCOOP (https://www.sourcefabric.org/en/newscoop/) throughly to understand how the existing news systems work. Install and configure these systems on a local computer and try.

Project Title	**Local File Sharing and Collaboration using OwnCloud Platform**
Proposed By	Dr Maruf Hasan (mhasan@kfu.edu.sa)
Brief Description	We often use Dropbox or similar file-sharing software to share files among people using cloud-based platform. This is rather costly and inefficient since file shared among students and faculty at KFU/CCSIT travels thousands of miles even though we are just a few rooms apart. OwnCloud is an open-source file sharing platform that allow us to connect a few local computers to share file locally but using the power of cloud computing. In this project, students will investigate and develop a file-sharing and collaboration system using ownCloud open-source platform that satisfy the needs of CCSIT/KFU students and staff – preferably using under-utilized resources on the computers we use on daily basis. For example more than half of the hard disk space of many KFU computers are not used by their users.
Expected Outcomes	A file-sharing and collaboration system powered by ownCloud
Available Resources	ownCloud Open Source System
Skills Required	Programming (understand ownCloud API and implement system using those API) Interested students are advised to try out ownCloud from http://owncloud.org/ A quick starting point is to watch this YouTube video https://www.youtube.com/watch?v=xA3tfBTvH0c&feature=player_embedded Interested students are advised to install and configure ownCloud at home to facilitate file sharing among family members to build confidence

Project Title	**Design Patterns for Dependable Systems**
Proposed By	Dr. Md Maruf Hasan (mhasan@kfu.edu.sa)
Brief Description	Software engineers face an uphill struggle over the increasing size and complexity of systems they are expected to develop, a problem only exacerbated by the increased use of software to control safety critical functions in automobiles, aviation and the rail industry to name a few. When developing such systems from scratch, the process can be highly error prone. Safety is critically influenced by architecture, an aspect of software development that has previously seen successful application of the patterns concept where design expertise is captured in a way in which it may be systematically reused. In this project, students will develop a pattern catalogue for real-time, embedded systems. Strong background of system analysis and design is necessary.
Expected Outcomes	Design-patterns for safety-critical system in various domain; Comparative analysis of existing design patterns; recommendations
Required Resources	Literature on recent development in Design Patterns, Dependable system and traceability, safety-critical system; CASE tool
Skills Required	System Analysis and Design, Object-Oriented Software Engineering, knowledge of OO programming, UML and CASE tools
Specialized Tutoring/Help to Be Provided by the Supervisor	Tutorial and lecture on dependable system and design pattern and CASE tool

Project Title	**Error-Driven Foreign Language Learning**
Proposed By	Dr. Md Maruf Hasan (mhasan@kfu.edu.sa)
Brief Description	Learning a foreign language is painstaking. Foreign language learners with different background (different mother tongue and different level of proficiency, etc.) are prone to make different types of mistakes. In an error-driven foreign language learning framework, learner's errors are identified and annotated from a large number of people into a database. This collection is known as learner corpus. Patterns of errors and association of errors with learners can be easily identified using the annotated corpus and data mining algorithms (as it is done with shopping basket analysis in e-commerce to predict who is likely to buy which products). It is possible to teach foreign language effectively by identifying error-patterns in a learner and presenting the most relevant learning materials based on the mistakes a learner makes and likely to make. In this project, students will be required to collect and annotate errors in Arabic Speaker's English followed by subsequent error analysis using machine learning and data mining algorithms. The students will also develop a prototype to demonstrate the effectiveness of error driven learning. Strong background in AI, XML and programming is necessary.
Expected Outcomes	Preparation of data (corpus), Data Analysis, Prototype Applications
Available Resources	
Required Resources	Data Mining and Machine Learning Software (open source or free)
Skills Required	XML, AI, Data Mining, Algorithm development; data analysis, experimentation
Specialized Tutoring/Help to Be Provided by the Supervisor	Tutorial and lecture on natural language processing and data mining

Project Title	**Taxi Dispatching System using Smartphone**
Proposed By	Dr. Md Maruf Hasan (mhasan@kfu.edu.sa)
Brief Description	This project aims to develop a GPS-based application to facilitate Taxi dispatching (in Al Ahsa) using smartphone. An android application will send the caller's location to a web server and the server will find the nearest available taxi from its pool of registered taxi drivers using the driver's real-time location and status. Strong programming skill is necessary. Students will be given necessary training on location- aware smartphone application development.
Expected Outcomes	Andriod App and a Web-based system
Available Resources	Smartphone Application development Toolkit
Required Resources	
Skills Required	Strong programming skills, Database and algorithm design. AI techniques
Specialized Tutoring/Help to Be Provided by the Supervisor	Tutorial on location aware system development for android will be provided

Project Title	**Designer Asset Manager**
Proposed By	Dr Misbahuddin (mmisbhauddin@kfu.edu.sa)
Brief Description	Every design project, be it front-end user interface for a web application / mobile app or an advertisement banner, requires the designer to reuse some of the assets they have in the database. Assets range from stock photos to vector graphics and illustrations. Each asset has its own set of license which restricts its usage without fulfilling those requirements in projects. An important part of designers workflow is to allow him to search his database of assets in an effective and intuitive way. In this project, you are required to develop a desktop-based web-aware asset management system. You are required to use API to accomplish the task of backup, micro-asset selection and other usability issues.
Expected Outcomes	A desktop application connected to the web for downloading assets from the web. The asset manager should provide a usable interface for the designer to search for available assets based on new project requirements.
Available Resources	
Skills Required	HTML / CSS JavaScript (Most APIs to be used extensively use JavaScript) JQuery and AJAX NodeJS (For building a web-aware desktop application)

Project Title	**Brainwaves Authentication System**
Proposed By	Dr. Mohammed Misbhauddin (mmisbhauddin@kfu.edu.sa)
Brief Description	Different ways to authenticate users have been around, the most common being passwords. In this project, you are required to develop an alternate authentication method using brainwaves. Use of specialized equipment allows us to measure certain aspects like focus, concentration and so on from our ECG while doing a certain task. In this project you are required to develop and validate an approach where you record the brainwaves of a person performing a set of tasks and use those tasks to authenticate themselves in the future.
Expected Outcomes	A set of questionnaire with a set of tasks that can be used to authenticate a user. An application to record and recall the brainwaves of a person while he / she performs that task. A set of tests that validate that the approach works on 25-50 different subjects (users).
Available Resources	Neurosky MindWave Device for Brainwaves Detection
Skills Required	HTML / CSS (Front - Interface) JavaScript NodeJS (JavaScript library to interface with Neurosky)

Project Title	**Smart Home Control Using Gesture Control**
Proposed By	Dr. Mohammed Misbhauddin (mmisbhauddin@kfu.edu.sa)
Brief Description	A number of devices have been introduced in recent years that help us making our environment smarter and aware including the PHILIPS HUE light switch, smart door locks, smart electric sockets and many more. There should be a smarter way to interact with theses devices too. In this project, we are going to use gesture control to interact with a web-based panel that controls all these devices. The gesture control device to be used here is called Myo armband that allows users to control something using his arm muscles. It is better than using other gesture identification devices such as kinect and leapmotion as it does not work with an area / field of interest.
Expected Outcomes	A web-interface that connects with all the sensors and allowing the MYO armband to use these gestures to control the interface.
Available Resources	MYO Armband Sensors from smartthings (at least three)
Skills Required	HTML /CSS JavaScript NodeJS (The library to connect MYO to web).

Project Title	**Code Snippet Manager**
Proposed By	Dr. Mohammed Misbhauddin (mmisbhauddin@kfu.edu.sa)
Brief Description	Reusing code snippets is a popular practice among many developers. It is not copying or cheating when the author of the code snippet is the user himself or the code snippet is freely available on the web to be used by anyone under a GPL license. One major issue faced by developers when working with reusable code snippets is finding the right one at the right time. This project requires development of a cloud-based code snippet manager that allows coders to put in functions, classes or other snippets to save for later use. A major requirement is to identify and implement a framework that allows the coder to organize the code by type of snippet, language, interface availability and so on so that the coder can quickly look-up them in future. Tagging (like Delicious Bookmark Manager) can be used to enhance searchability of the code snippet. UI similar to that of web-board based websites such as Pinterest, Tumblr can be used to enhance the user experience.
Expected Outcomes	A complete web-based application with an aesthetic and easy to use and maintain GUI and a powerful backend that allows for fast searches.
Required Resources	The teams can make use of extensive HTML & CSS Frameworks available online (HTML5 Boilerplate, Twitter's Bootstrap) and JavaScript Libraries such as JQuery to accomplish the dynamism required by the application.
Skills Required	- HTML5, CSS3, JavaScript, Any Server-Side Scripting Language (PHP, Python, Ruby, ASP .Net) - Database Management System (MySQL, Postgre SQL)
Specialized Tutoring/Help to Be Provided by the Supervisor	None

Project Title	**Software Design Metric Tool**
Proposed By	Dr. Mohammed Misbhauddin (mmisbhauddin@kfu.edu.sa)
Brief Description	Metrics are popularly used to quantify aspects of a system to assess its quality. Numerous tools are available for defining and applying metrics to software code. But when it comes to design, only a handful of them fare well with major constraints and limitations. The main objective of this project is to design and develop a design metric tool that allows the user to define new metrics and evaluate models based on existing metrics. This involves studying the few available tools, identifying their shortcomings and proposing ways to overcome them and implementing it as part of a tool. This tool can be a desktop application or a web-based tools (which is more effective mainly due to the popularity of subscription based web-apps market). The choice of the model is left up to the team but since UML is a popular language learned by the students and widely used among practitioners, it is suggested to use UML.
Expected Outcomes	A desktop or web-based application (based on the option selected). Allows a simple design for user uploads and output (result) for the evaluated metrics. Also provides an easy way to define metrics (there are many choices – any one is acceptable here). Optionally, if a desktop application is developed as part of the project, an installer will add exceptional value to the developed tool.
Required Resources	Metrics popularly used by design models as a catalogue will be provided. Numerous XML processing libraries are available that can be used for the project.
Skills Required	• Unified Modeling Language (or any other modeling language used at design-level) • XML (or any other notation used to export graphic models for processing)
Specialized Tutoring/Help to Be Provided by the Supervisor	None

Project Title	**Project Versioning System**
Proposed By	Dr. Mohammed Misbhauddin (mmisbhauddin@kfu.edu.sa)
Brief Description	Code versioning is an important activity when it comes to professional software development. But this important activity becomes tedious when it comes to working on smaller projects such as senior projects. There many popular code versioning systems available such as Git, Subversion, Mercurial and so on. But understanding and using them is a challenge specially for smaller projects. But the need for a versioning system, even for smaller projects with a team of developers, is undeniable. This project requires the development of a simple versioning system for code files. Users are forced to check-out items and lock items during reading and writing so that a group of fellow programmers do not accidently overwrite code files on one another. Although this is handled in the present code versioning systems (through branching and merging) it is rarely a necessity when working on smaller projects.
Expected Outcomes	A complete web-based application with an aesthetic and easy to use and maintain GUI and a powerful backend that allows for multi-user collaboration.
Required Resources	The teams can make use of extensive HTML & CSS Frameworks available online (HTML5 Boilerplate, Twitter's Bootstrap) and JavaScript Libraries such as JQuery to accomplish the dynamism required by the application.
Skills Required	- HTML5, CSS3, JavaScript, Any Server-Side Scripting Language (PHP, Python, Ruby, ASP .Net) - Database Management System (MySQL, Postgre SQL)
Specialized Tutoring/Help to Be Provided by the Supervisor	None

Project Title	**Context-Aware Shopping App**
Proposed By	Dr. Mohammed Misbhauddin (mmisbhauddin@kfu.edu.sa)
Brief Description	How amazing will it be to get everything you have on your list while shopping. But most often, we find ourselves at the cashier with something left out. This is mainly due to either the unavailability of the item or not being able to get the item while shopping in that particular aisle or area of the shopping center. In this system, you are required to develop a context-aware shopping application using proximity aware device technology such as Bluetooth Low-Energy Beacons. Using this technology, we need to develop a mobile app that guides users by displaying the list customized to his position in the supermarket. Not only this, the app also reminds him that he forgot something using the same proximity-detection approach.
Expected Outcomes	A mobile application using iOS as the iBeacon standard for Bluetooth Low-Energy.
Available Resources	Devices required such BLE Beacons, custom-beacon development kits and other interface kits will be provided.
Required Resources	
Skills Required	• iOS Mobile App Development • Working with hardware networking devices and protocols
Specialized Tutoring/Help to be Provided by the Supervisor	The supervisor will provide state-of-art web-based tutorial access to learn about iOS mobile app development. Information and usage details about the BLE beacons will also be provided.

Project Title	**Predictive modeling for healthcare intelligence**
Proposed By	Dr Mohamad Elhassan (Seliamanme@kfu.edu.sa)
Brief Description	The aim of this project is develop predictive models for healthcare intelligence. Students will start by learning to use one or more of the trending BI and Analytics software tools such as R, BIRT, JasperReport, SAP BI. MS BI, etc. Then, they identify a potential application area within health care sector to develop the models. They can gather the requirement and data from any local organization to develop and test the models.
Expected Outcomes	Developed Predictive models
Available Resources	There are several software tools.
Skills Required	Analytical and data mining skills Programing

Project Title	**Videoconferencing Interface for Facebook Social Network**
Proposed By	Dr.Nasser Dardas (ndardas@kfu.edu.sa)
Brief Description	This application enables video conference for Facebook users (similar to Skype). The users should be able to login, check for online users, and start a video conference session with them. This requires the confirmation of the other party before the conference session starts. During the conference, the participants have control over the session (they can stop the camera, pause/resume, capture image, or record video). The possibility of having multi-user videoconferencing should also be considered. Check out: http://appears.in
Expected Outcomes	A complete web-based application with an aesthetic and easy to use and maintain GUI and a powerful backend that allows for a complete online learning portal.
Available Resources	All languages are open-source. Hence available. The team has the freedom to choose their own IDE for development. They can use open-source ones such as NetBeans, Aptana, Brackets or use SublimeText. Plugins for Real-time chat included with HTML5 (Web-RTC)
Required Resources	
Skills Required	HTML5,CSS, JavaScript, PHP, MySQL A sound knowledge of HTML5 is needed.
Specialized Tutoring /Help to be Provided by the Supervisor	

Project Title	**m-Catalog Browser**
Proposed By	Dr.Nasser Dardas (ndardas@kfu.edu.sa)
Brief Description	An effort that uses a user interface for web-based searching and browsing books through a mobile device (e.g., PDA, cellphone). The design of the user interface should resemble/exploit the traditional physical card catalog used in libraries.
Expected Outcomes	A mobile application using iOS or Android.
Available Resources	Andriod SDK using Eclipse
Required Resources	Mac OSX with XCode, iPhone
Skills Required	iOS or Android Programming
Specialized Tutoring/Help to be Provided by the Supervisor	

Project Title	**m-Cookbook**
Proposed By	Dr.Nasser Dardas (ndardas@kfu.edu.sa)
Brief Description	An effort that realizes a user interface that provides an avenue to information on how to prepare various delicacies through a mobile device (e.g., cellphone, PDA).
Expected Outcomes	A mobile application using iOS or Android.
Available Resources	Andriod SDK using Eclipse
Required Resources	Mac OSX with XCode, iPhone
Skills Required	iOS or Android Programming, XML, RSS feeds
Specialized Tutoring/Help to be Provided by the Supervisor	

Project Title	TV User Interface
Proposed By	Dr.Nasser Dardas (ndardas@kfu.edu.sa)
Brief Description	A user interface through which the viewer can have access to various typical TV services. A TV channel can be simulated by using an appropriate representative animated image/video file. The user interface should be developed as a standalone application.
Expected Outcomes	A desktop based application that allows you to simulate a television interface
Available Resources	All languages are open-source. Hence available. The team has the freedom to choose their own IDE for development. They can use open-source ones such as NetBeans or Eclipse.
Required Resources	
Skills Required	Java, GUI Programming
Specialized Tutoring/Help to be Provided by the Supervisor	

Project Title	**Travelog**
Proposed By	Dr. Qazi Mudassar Ilyas (qilyas@kfu.edu.sa)
Brief Description	We all love traveling and having smart phones in our pockets, we take hundreds of photos during vacation trips. A number of applications are available for sharing pictures with our friends but traveling is much more than merely pictures. This smartphone app attempts to capture a complete traveling experience in the form of a travel log. The user can take pictures, geotag and annotate them, recommend places to other users, capture their experience in the form of a diary/blog, share historical information associated with various places they visit and any other information such as bus routes, restaurants, places for halal food and hotels etc.
Expected Outcomes	A smartphone app
Available Resources	
Required Resources	No specific resources are required
Skills Required	Good programming skills, hand on experience of mobile development would be handy
Specialized Tutoring/Help to be Provided by the Supervisor	

Project Title	**Personal Classroom Assistant**
Proposed By	Dr. Qazi Mudassar Ilyas (qilyas@kfu.edu.sa)
Brief Description	Sadly, it is a common observation that few students in CCSIT are equipped with a pen and paper in the classroom. All of them, however, are equipped with smartphones and tablets. The proposed app can be used by a student to take classroom notes, add audio/video of lecture and annotate documents, presentations and audio-visual content. The app may also be used to record student's schedule and notification/alarms for lectures, assignments, quizzes and exams. It may also include GPA calculator, and extrapolation of result.
Expected Outcomes	A smartphone app
Available Resources	
Required Resources	No specific resources are required
Skills Required	Good programming skills, hand on experience of mobile development would be handy
Specialized Tutoring/Help to be Provided by the Supervisor	

Project Title	**Loan and Will Management System**
Proposed By	Dr. Qazi Mudassar Ilyas (qilyas@kfu.edu.sa)
Brief Description	Allah (subhanaho wata'ala) has emphasized two things in Quran, to which generally we do not pay attention; first documentation of loans and second having a documented will before we die. The loan management system should capture information about lenders, owners, witnesses and terms of loan etc. For will, a person should be able to state his liabilities, nominate the people along with their shares in his assets. The specific challenge of the project is how to make sure whether a person is still alive and a mechanism to disclose the contents of will. A will should not be disclosed just on the basis of a doubt that a person is no more alive and it should not be disclosed too late so that the assets are already divided among inheritors. The system may optionally include an awareness component to sensitize the people about importance of these things and related Islamic jurisprudence.
Expected Outcomes	A Web-based system or a smartphone app
Available Resources	
Required Resources	No specific resources are required
Skills Required	Self-motivation, good analytical and programming skills are required
Specialized Tutoring/Help to be Provided by the Supervisor	

Project Title	**Tool to reflect on shopping habits of consumers**
Proposed By	Dr Raj Kumar (rkaruppan@kfu.edu.sa)
Brief Description	The objective of this project is to develop an app that allows users to specify a goal related to their shopping habits (e.g. save money, buy healthy products and so on) and reflect on how their actual purchases match this goal. The app should work on a mobile device.
Expected Outcomes	Proof-of-concept prototype that will demonstrate and report shopping habits of customers
Available Resources	Open source information retrieval tools
Skills Required	Strong programming language in Python or Ruby

Project Title	**Tool to support learning by collaborative programming and group communication**
Proposed By	Dr Raj Kumar (rkaruppan@kfu.edu.sa)
Brief Description	Learning a programming language will be interesting in a collaborative programming setting. This project will develop a simple web service for supporting effective learning.
Expected Outcomes	Proof-of-concept prototype that will demonstrate and support effective learning by collaborative programming
Available Resources	Open source information retrieval tools
Skills Required	Strong programming language in Python or Ruby

Project Title	**Windows 8.1 Store Mapping App using Light Aware UI**
Proposed By	Rizaldy Rapsing (rrapsing@kfu.edu.sa)

Description

Computer, tablet and phone screens are more useful if their systems are reactive to lighting conditions.

Imagine driving or walking with your mapping app guiding you to the nearest restaurant but the sun flare disables you from seeing the screen. Using Windows Sensor API, we can create such programs.

By adjusting the font, the size, color contrast, and vector graphics rendering, contents can be seen legibly and clearer.

Expected Outcomes

1. design and develop a Windows Store Mapping app,
2. automatically use Windows Sensor API to alter UI in dark or bright areas, and
3. be able to encourage students to make apps implement light sensors

Available Resources

- Windows 8.1 OS
- Visual Studio 2013 update 4

•   Windows 8 Surface Pro
Required Resources
•   Laptop - I7, Qualified hardware-accelerated OpenGL graphics card, at least 8GB RAM, at least 1TB HD
Skills Required
•   Light Sensor manipulation •   App design and development using VS2013
Specialized Tutoring/Help to Be Provided by the Supervisor
•   App development using VS2013

Project Title	**"Somebody Help!" Messaging System using Proximity API**
Proposed By	Rizaldy Rapsing (rrapsing@kfu.edu.sa)

Description

In school, have you experienced needing a pen and no one in the room has a spare? In your house, have you experienced being locked inside and no one can hear your cry for help? Worst, have you experienced or witnessed an accident and no one is in sight? "Somebody Help!" can be the app solution for these small and critical emergencies.

Using PeerFinder, ProximityDevice, and PeerWatcher classes, this app will communicate to nearby devices to broadcast your post and locate you using a Map.

The application may be simple but its usefulness can be immeasurable.

Expected Outcomes

1. utilize proximity chips in devices,
2. utilize wireless chip that supports Wi-Fi Direct,
3. utilize wireless chip that supports Bluetooth,
4. utilize Near-Field Communication (NFC) radio,
5. design a WP App messaging system

Available Resources

- Windows 8.1 OS
- Visual Studio 2013 update 4
- Windows Phone
- Device with either proximity chip, wireless chip that supports Wi-Fi Direct or wireless chip that supports Bluetooth

Required Resources

- Laptop - I7, Qualified hardware-accelerated OpenGL graphics card, at least 8GB RAM, at least 1TB HD

Skills Required

• Socket programming
• VS2013 programming
Specialized Tutoring/Help to Be Provided by the Supervisor
• App development using Windows Phone SDK 8.0

Project Title	**Windows 8 App of KSA Driving Symbols Using Augmented Reality**
Proposed By	Rizaldy Rapsing (rrapsing@kfu.edu.sa)
Brief Description	Augmented reality is an old concept but only lately has it been a product of people's wide imagination. Some of its applications are in advertising, task support, navigation, industrial, military and emergency services, art, architecture, sightseeing, collaboration, entertainment and education, and performance. Dr. Khalid Al-Seghayer, in his article, "Carnage on Saudi Arabia's Roads", reports that around 7,100 people die and 38,000 others badly injured due to road accidents in the kingdom. There are many factors involved and one of them is a driver's inability to follow road signs. With this, the project intends to create a Windows App that will be able to assist drivers by scanning the roads with symbols and voice it out for the driver to hear.
Expected Outcomes	This projected is expected to: 1. design and develop an app that can be accessed by drivers, 2. scan, interpret and voice out road symbols, and 3. be able to encourage students to make other applications using AR.
Available Resources	Laptop - I7, Qualified hardware-accelerated OpenGL graphics card, at least 8GB RAM, at least 1TB HD Windows 8 OS Visual Studio 2012 Windows Phone SDK 8.0 Autodesk Maya 2013
Required Resources	Partnership with D-Fusion Logitech HD Pro Webcam C920 Sensors Accelerometer Head-mounted Displays Windows 8 Mobile Phone Windows 8 Tablet
Skills Required	3D animation using Autodesk Maya App development using Windows Phone SDK 8.0 Augmented Reality
Specialized Tutoring/Help to Be Provided by the Supervisor	App development using Windows Phone SDK 8.0

Project Title	**Atlas of Places in Quran**
Proposed By	Dr Shadi Ettantawi (saltntawi@kfu.edu.sa)
Brief Description	The aim of this project is to build an information system to provide users with information regarding all places mentioned in the Quran. The system may use a map to display all places, for each place some details are provided, including pictures, history, story, .. etc along with related verses.
Expected Outcomes	An IS, such as a Website or an app, that interacts with users to explore places mentioned in the Quran.
Available Resources	None.
Skills Required	1. Good command of programming. 2. Being comfortable with systems analysis and design. 3. Being both hard and smart worker.

Project Title	**Teaching Arabic for non Arabic Speakers**
Proposed By	Dr Shadi Ettantawi (saltntawi@kfu.edu.sa)
Brief Description	Learning Arabic language for non Arabic speakers can be a challenging task. Many solution exists to help people learn Arabic, however, there is still a room for improvement. This project aims to build an interactive information system that helps users to learn Arabic by covering the essential skills and providing needed information, e.g. Alphabet, Vocabulary, Common expressions, Grammar, .. etc. Moreover, the system should give users a chance to practice by providing a set of drills.
Expected Outcomes	An information system, Website or an app, that help users to learn Arabic.
Available Resources	1. Needed tools for the platform of choice. 2. Arabic language references. 3. Related resources for teaching Arabic, e.g. books, websites, video series, ..etc.
Skills Required	1. Good command of Arabic language. 2. Good command of programming. 3. Being comfortable with system analysis and design. 4. Being comfortable with HCI and GUI design. 5. Being both hard and smart worker.

Project Title	**Virtual Bank**
Proposed By	Dr Shadi Ettantawi (saltntawi@kfu.edu.sa)
Brief Description	The aim of this project is to build a mini information system for a virtual bank. The system has three main components: a database, a website, and an app. The website is used by various users, e.g. employees, and customers, to perform a predefined set of functions and reports, e.g. maintain customer list, maintain accounts list, money transfer, loans management, .. etc. The app is designated for customers only to allow them to perform a set of functions and queries. Both the interfaces, the website and the app, talk to each other thru the same database in both real-time and secured fashion.
Expected Outcomes	1. A database that supports a set of banking functions. 2. A website to enables users to perform needed banking functions. 3. An app to enables customers to perform some banking functions.
Available Resources	1. Web-based systems development tools. 2. App development tools. 3. Online hosting server for the DBMS.
Skills Required	1. Good command of programming. 2. Being comfortable with systems analysis and design. 3. Being comfortable with database design. 4. Being both hard and smart worker.

Project Title	**Arabic Morphological Analyser**
Proposed By	Dr. Shadi Ettantawi (saltntawi@kfu.edu.sa)
Brief Description	Morphology - التصريف اللغوي - aims to find the root for a given word, and to provide other forms or words based on the same root to give other meanings. This project aims to build a tool that:- a) Accepts a word and then return its root. b) Accepts a root and display all its derived words.
Expected Outcomes	⁻ Desktop Application, or ⁻ Web-based Application, or ⁻ iPhone/ iPad App.
Available Resources	⁻ Articles about building Morphology Analyser. ⁻ Objective-C courses.
Required Resources	- None.
Skills Required	⁻ Good command of a 3GL such as C or Java. ⁻ Ability to learn a new PL such as VB.Net or Objective-C. ⁻ Good command of Arabic Language. ⁻ Good command of Web-based languages such as ASP.Net, PHP, JavaScript, and HTML.
Specialized Tutoring/Help to be Provided by the Supervisor	- Guidance to survey related work and to tackle the problem can be provided by the supervisor.

Project Title	**The Holy Quran Application**
Proposed By	Dr. Shadi Ettantawi (saltntawi@kfu.edu.sa)
Brief Description	The system should provide the below list of functions: - Displays the Holy Quran for browsing (page by page) - Enabled users to jump directly to a certain chapter(Sura) using its name or a substring of the name, or using its chapter number. - Enables users to jump directly to a certain verse within the current chapter by a substring or by the verse number. - Enables users to search the holy Quran verses using key words or substrings, allowing for multiple words/substrings search within a verse. - Exports search results to an external file, e.g. txt, or html. - Enables users to perform statistical analysis to Quran text, i.e. to count the number of verses, words, characters within the Holy Quran, a certain chapter, or a certain range of text. - The application should deal with the issue of Discretization, that is to accept search words with or without discretization and to display the Quran script with or without discretization. Further advanced functionalities are as follows:- - The application may be enhanced to provide the search results with Ranking. - Another desirable functionality is to provide the ability to morphological search. - Yet, another enhancement is to apply semantic search. The Platform for this project can be either Windows or Mac OS/iOS.
Expected Outcomes	The final product can be either a Desktop application (Windows or Mac), or a smart phone application using one of the platforms iOS, Android, or Windows Phone. The application should be implemented with most of the basic functionalities and with at least two of the advanced functionalities.
Available Resources	The script for the holy Quran. Development environment such as Microsoft Visual Studio 2012 Express, or Apple's XCode.
Required Resources	
Skills Required	- High-Level Programming Language, e.g. C. - Ability to learn a new programming language such as Objective-C, C# or VB. - Ability to work with files, arrays, functions, GUI, and Databases. - HTML is optional. - Ability to work and utilize Data Structures and Algorithms to ensure that application performance is efficient enough. - The problem can approached using Databases, Sequential Files, XML Files, or using Information Retrieval approach. However, the recommended approaches are Files or Databases. - Ability to research and utilize new knowledge.
Specialized Tutoring/Help to Be Provided by the Supervisor	- Provide resources and guidance to learn C#, Objective-C, or VB. - Provide resources and guidance to NLP topics such Ranking, Morphology, Semantic, Ontology, and related concepts. - Provide resources and guidance for needed Data Structures and Algorithms.

Project Title	**Automatic Book Website Generator**
Proposed By	Dr. Shadi Ettantawi (saltntawi@kfu.edu.sa)
Brief Description	The task of building a library website can be both effort and time consuming if addressed manually. However, a tool can be created to aid the developer in building such a website. The tool to be build accepts as input a book script in a suitable format, e.g. text, xml, or document, and then creates a set of web pages to display the content of the input book.
Expected Outcomes	The required work is as follows: - Design a theme/ template page using HTML and CSS. - Develop a tool to accepts a script in a certain format, and produces a mini website showing the contents of the input book, a web page for each page of the book using the readymade template. - Develop a tool that compiles each book's mini website into the library's website. - Develop website search capabilities. - Develop a tool to provide statistical information about the contents of the website. - Develop a tool to correct common typing errors and linguistic mistakes.
Available Resources	
Required Resources	
Skills Required	- High-Level Programming Language, e.g. C. - Ability to learn a new programming language such as Objective-C, C# or VB. - Ability to work with files, arrays, functions, GUI, and Databases. - HTML and CSS. - JavaScript. - PHP or ASP.Net
Specialized Tutoring/Help to Be Provided by the Supervisor	

Project Title	**Automatic Database Schema Generator**
Proposed By	Dr. Shadi Ettantawi (saltntawi@kfu.edu.sa)
Brief Description	The task of writing a SQL script to create a database can be both effort and time consuming if addressed manually. However, a tool can be created to aid the developer in building such a database schema. The tool to be build provides a graphical interface to draw an Entity- Relational Model to serve as input, and then creates a file containing a set of SQL statements to convert that diagram into a physical schema.
Expected Outcomes	The required work is as follows: - Develop the tool's graphical interface to allow users to design their ERM using drag and drop with some text input. - Develop a function within the tool to analyze the diagram and discover any errors. - For correct diagrams, the tool converts the logical design into physical design. - The tool generates a set of SQL statements that represents the schema. - The tool can be linked to an actual DBMS such as Access, SQL Server, My SQL, Oracle and creates the schema. - Moreover, another function can be provided that is to read a set of data from a table, and generates a set of SQL statements to duplicate those data, i.e. to import and export data.
Available Resources	
Required Resources	
Skills Required	- High-Level Programming Language, e.g. C. - Ability to learn a new programming language such as C# or VB. - Ability to work with files, arrays, functions, GUI, and Databases.
Specialized Tutoring/Help to Be Provided by the Supervisor	

Project Title	**Typing Errors Checker**
Proposed By	Dr. Shadi Ettantawi (saltntawi@kfu.edu.sa)
Brief Description	It is common for user to commit typing error while typing an email or when performing any kind of text input, therefore it is useful to build a tool that aids in discovering and correcting such typos.
Expected Outcomes	The work needs to be done is as follows: - Build a Corpus of valid words in a certain language, e.g. English or Arabic. In order to do this, a tool can be developed that accepts as feed a script of correct words in common formats (txt, doc, html, pdf) and extracts words from it, add those words to the corpus, and so on. - The Corpus can be enhanced by applying rules such as "Morphology" rules to form new words. - Another tool should maintain the corpus to keep it sorted and to remove duplicates. - The spelling checker uses this Dictionary to check for each word in a script whether it is correct or not and suggests a number of correct words instead.
Available Resources	
Required Resources	
Skills Required	- High-Level Programming Language, e.g. C. - Ability to learn a new programming language such as Objective-C, C# or VB. - Ability to work with files, arrays, functions, GUI, and Databases. - Knowledge of Data structures and Algorithms (Quick Sort and Binary Search).
Specialized Tutoring/Help to Be Provided by the Supervisor	

Project Title	**Design and development of Mobile application for providing basic Islamic education to Kids.**
Proposed By	Dr Amna Asif
Brief Description	The smartphones are becoming necessary parts of our lives. In addition, kids are showing their interest in using the smart phones. Sometimes it is very hard for Muslim parents to find such mobile application that provides Islamic knowledge to their small kids in entertaining way. Therefore, they end up in downloading the application, which contains nursery level learning material. Aim of this project is to design and develop a mobile application that will provide a child with Islamic education in entertaining way such as but not limited to: 1. Islamic stories (SeratulNabi, Messenger's life, Quranic stories, Sahaba stories etc) 2. Islamic rhymes (Arabic and english) 3. Learning and writing basic Arabic alphabets (e.g. Norani Qaeda, test quizzes) 4. Recitation and learning of short Quranic chapters or Duas 5. Training of kids trough pictures or simulations (e.g. How to visit someone according to sunnah) 6. .. In this project, students will analyze the existing applications (if any). The design and implementation will be done based on requirements. The prototype will be evaluated with users.
Expected Outcomes	Mobile application for kids.
Available Resources	Will be provided on demand.
Skills Required	Students should have expereince in Mobile development. Designing or prototyping tools

Project Title	**CCSIT Student Academic Advising System (SAAS)**
Proposed By	Ms Janice Dela Vega
Brief Description	College students need to determine the courses or major they should take. A student has a study plan given at the first semester to follow for the rest of the eight semesters, but more often students do not follow such study plan. To come up with a more effective and feasible study plan, one factor is to consider the students' different abilities and skills. They need to examine their performance in different courses, identify their skills and those they want to develop. Students should have an assistance via an automated tool as well as academic advisers. The CCSIT Student Academic Advising System (CCSIT-SAAS) is a web-based system aimed to provide academic advising and guidance to students. It should store the students' mark, generate the GPA (both by term and accumulative) and units earned, which will be used as the basis of generating the study plan of individual student for the next semester. The study plan is still based on the structure of the study plan given in the first semester. Furthermore, the system should be able to consider all factors (prerequisites, GPA to determine study load, student capability, academic affairs policies and the like) in generating the study plan. The system should also have the capability to help determine the appropriate major of the student, once she finishes the fourth semester. Even with the presence of an automated SAAS, it is still encouraged that there will still be assigned academic advisers who will help the students with any academic advising problem. The system should also provide to the students a way to set an appointment (face-to-face) with the academic advisers. It should also provide an access to the academic advisers where they can view their advisee's academic record. The adviser will have the capability to record the summary of mentoring and advising session. The students will also have the ability to view notes from the appointment. The system should also provide other means where the student can communicate with their advisers (e.g. instant messaging). Ideally, there should be a connection to the enrolment system to ensure the students cannot register without the authorization of the academic adviser.
Expected Outcomes	The CCSIT Student Academic Advising System (CCSIT-SAAS) is a web-based system aimed to provide academic advising and guidance to students. The main function of the system is the generation of the individual student study plan. It will also provide a way for students to set appointment or communicate to academic advisers.
Available Resources	
Skills Required	

Project Title	**Pick up and Drop off Mobile App**
Proposed By	Ms Janice Dela Vega
Brief Description	The inadequacy of public utility transport in the Kingdom and the unavailability of male family members, necessitate the arrangement of transportation to companies/drivers providing transport service, especially to women. One of the major patron of such arrangement are female students who are travelling almost on a daily basis on a predetermined time. The Pick up and Drop off Mobile App is school transportation system, where the students can indicate their pick up and drop off schedule as well the respective location, and the system will be able to generate the daily schedule for the driver. The mobile app will be able to determine the best route possible in picking up and dropping off. Such system is expected to be more reliable than the usual calling of drivers, since aside from the daily schedule it generates for the drivers to use as a reference, it will also provide some alert functions (e.g. when it is time for pick up or drop off and who). It should accommodate changes made by the student in their schedule. Alerts are also provided for the students (e.g. the driver is on or near her location already). Instant messaging should also be included as one of its functions. The use of GPS technology is considered in the development of this system.
Expected Outcomes	The Pick up and Drop off mobile application is a school transport system that can store the students' pick up and drop off time, as well as respective location, which will be the basis of generating the daily transport schedule of the driver. It can generate the best route possible, provide alerts, and a way to communicate through instant messaging.
Available Resources	
Skills Required	

Project Title	**Android Application to Hire a Car**
Proposed By	Saira Muzafar (smali@kfu.edu.sa)
Brief Description	The main goal of this project is to develop an accessible and comprehensive Eclipse structure application, can potentially assist individuals to hire a car by phone and for the company to maintain a database for booking and sending driver details.
Expected Outcomes	This application provides a real time car rental reservation with enhanced location search, detailed map views etc
Available Resources	Almost all resources are available.
Required Resources	No special resources required.
Skills Required	Following skills are required, • Java • Eclipse • Android development • Android OS concepts • SQL Lite and • Additional helping tools during project proposal.
Specialized Tutoring/Help to be Provided by the Supervisor	• Domain knowledge and guidance • Existence problem statement information • Required literature review guidance • Software requirements modeling and specification • Software architecture and design

Project Title	**Graduate Students Management Solution (GSMS)**
Proposed By	Dr Shaheen Khatoon
Brief Description	Management of graduate students is currently distributes across different systems. The aim of this system is create a web based solution that seamlessly manages the entire lifecycle graduate from admission to Alumni. It could have different module that help graduate student to perform different task. Possible module could be following and further potential module could be identified: • Attendance Management • Leave management • Finding Student advisor • CO Op from registration to completion • Graduation project management • Degree clearance • Timeline Management (Interactive visualizer of major and minor • milestones and deliverables deadlines for each Graduate Student's program at KFU • Transition of status into Alumni, including post-graduation professional tracking • Any potential module related to graduate student. System sound big and not suitable to be taken by one group as a graduation project. It could be decomposed into module and each group can take one module. Supervising faculty members can supervise this project in group and each supervisor need to make sure module is going to complete and compatible tools are used for later on integration purpose. For student purpose some module are proposed below to take in group.
Expected Outcomes	A web based single interface for students to manage their entire program lifecycle
Available Resources	
Skills Required	Web development and Database tool C#, ASP.NET, HTML, CSS MYSQL Server Visual studio 2012 JavaScript (If needed)

Project Title	**Degree Clearance System**
Proposed By	Dr Shaheen Khatoon
Brief Description	Existing system of degree clearance in KFU is manual. The student eligible to acquire the degree go through different departments manually to get the clearance done. This is wastage of time and student get pretty much upset because of the manual job of clearance. There is no automated system that is applicable to handle the different modules related to the degree clearance. A web based system is required which facilitate the student as well as the administration in order to go through the clearance process. System could have different modules in form of first step to last step and student could be able to monitor at which step currently their degree is. Main features for this system could be: User Account Management • Library Clearance • Fee Clearance • Academic Clearance • Degree Section • Any other potential module which is link with degree could be identified.
Expected Outcomes	A web based interface for students and administration. Where student could be able to register and submit application for degree. Admin could be able to receive and process degree according to their policies and processes
Available Resources	Web development and Database tool
Skills Required	C#, ASP.NET, HTML, CSS MYSQL Server Visual studio 2012 JavaScript (If needed)

Project Title	**Graduate Advisors Management**
Proposed By	Dr Shaheen Khatoon
Brief Description	Assist graduate advisors in ensuring graduate students make appropriate progress through their degree requirements and assist graduate students in understanding and meeting their program's milestones. This solution could improve student retention through clarity and communication of deadlines.
Expected Outcomes	A web based interface for students, advisor and administration.
Available Resources	Web development and Database tool
Skills Required	C#, ASP.NET, HTML, CSS MYSQL Server Visual studio 2012 JavaScript (If needed)

Project Title	**Search Engine based on SMS**
Proposed By	Dr Shaheen Khatoon
Brief Description	User with low end mobile device submit the search through SMS. Server finds the search and forms a meaningful SMS as result, its then sends the result back. The SMS search system could consists of a query server that handles the actual search query and results, and an SMS gateway that is responsible for communication between the phone clients and the query server. The client is a user with a mobile phone who sends an SMS message to the short code (a special telephone number, shorter than full telephone numbers used to address SMS and MMS messages) which arrives at the SMS gateway and is then dispatched to o server for processing. Query will send to general search engine and result will be downloaded. The query server extracts the results from the downloaded pages compose SMS of specified length and send back to client
Expected Outcomes	A web based interface for receiving questions through SMS and sending answers .
Available Resources	Web development and Database tool
Skills Required	Very good knowledge of Query construction and Information retrieval algorithms

Project Title	**Intelligent Telecom Marketing System**
Proposed By	Dr. Shaheen Khatoon (ssyed@kfu.edu.sa)
Brief Description	An intelligent marketing and sales system is the basic need of any telecom company to start its business and help them to capture its customer and target market efficiently. The system is based on data analysis methods which will suggest sales and marketing policies to grow the telecom business. It will generate personalized best Offers/services based on real time data analysis of customer social network. It can help to identify the potential customer for a telecom company; normally it can be classified potential customers into 3 different categories. 1. Ready to switch one telecom to other (Current telecom problems) 2. Need suitable offers/packages to switch telecom 3. Group based offers (Normally within company friends/colleagues) The system will not only provide benefits and profit to the telecom company but also help its customers to create social group on one network with low cost and reduced problem set. It can also analyze the customer behavior e.g. call timing, duration of calls, network usage etc. and the telecom can plan and design the new polices to attract the potential customers. The system would an important part of any telecom to start and expand its business.
Expected Outcomes	A web based system having telecom and customer interface. The customer interface will be used for data collection and feedback from the customers. Telecom interface will analyze their customer social data and provide the list of 3 different types of potential customers along their trends and targeted offers for telecom services.
Available Resources	
Required Resources	Telecom data, Software development and Database tool
Skills Required	1. Knowledge of C# and web development 2. knowledge of SQL Server 2005 and Reporting , Crystal reports 10 3. Study the marketing approaches and strategies of telecom
Specialized Tutoring/Help to be Provided by the Supervisor	Any kind of help and material will be provided to explore the system features and its analysis methods. Help will be provided to generate synthetic dataset incase not getting dataset from telecom company. To develop state of the art system's latest trends and research methods will be encouraged and provided.

Project Title	**A Automatic Tool to Generate Programming Rules**
Proposed By	Dr. Shaheen Khatoon (ssyed@kfu.edu.sa)
Brief Description	Program usually follows many implicit programming rules, most of them are not documented and violation of these implicit rules introduces many bugs. There is highly need of such tool which automatically identify programming rules that can be used by programmer during coding. The tool should be able to accept the source code file as input and analyzes the code sample statically by constructing the Abstract Syntax Tree. The analyzer uses the set of heuristics and data mining method to identify interesting patterns from the code. The set of rule will be generated from identified patterns which can be documented for future reference.
Expected Outcomes	The Tool should able to input a source code file and perform following tasks: 1. Apply data analysis method 2. Identify patterns from source code data 3. Generate rules from identified patterns 4. Document identified rules for future use.
Available Resources	
Required Resources	Literature on source code data analysis methods, open source or free tools for data analysis, Programming and database tools, Program source code repository
Skills Required	Data mining concepts, Database design and development, programming skills
Specialized Tutoring/Help to be Provided by the Supervisor	To develop state of the art application, latest trends and research methods will be provided.