PRACTICAL SKILLS DEVELOPMENT COMMITTEE

Activities during year 1434 (2013-2014)

Workshops and Competitions

WORKSHOP 1

Title of the Workshop: Motivating Academic Research at Undergraduate Level: Participation in the Scientific Conference for Saudi Students

Date: 22th October 2013

Duration: 1 hour

Location: Male Campus, CCSIT

Description:

The main focus of this workshop was to help students come up with contributions for the 5th Scientific Conference. It discussed the types of submissions accepted and how to formulate a research problem.

Speakers

Dr. Mohammed Misbhauddin and Dr. Shakeel Ahmed

Workshop Related Links

Workshop Presentation URL:

http://www.slideshare.net/mohamis/motivating-academic-research-at-undergraduate-level

Note: The same workshop was delivered at the female section on the 29th of October 2013.

WORKSHOP 2

Title of the Workshop: Introduction to Cryptography and Information Security

Date: 19th November 2013

Duration: 3 hours (10:30am onwards)

Location: Male Campus, CCSIT

Description:

The data transmission over the public networks differs in its needs of security; some situations as in banks, hostile environments, companies, hospitals, and at the personal level too require the channel to be very secure, so that the secure transmission is on demands. The process of designing systems that are concerned with the study of communications over non-secure channels is called cryptography. Cryptography science include two main operations, one is executed at the sender's side before the transmission of the data and responsible for transforming the Plaintext into Ciphertext which is called Encryption. The other one is executed at the receiver's side after the receiving of data and is responsible for transforming the Ciphertext into Plaintext which is called Decryption. Encryption / Decryption methods falls into two categories: Symmetric key where the encryption and decryption keys are the same and shared between sender and receiver and public key cryptography where the encryption key (public key) is different from the decryption key (private key).

Biography of the Speaker

Mr. Qasem Abu Al-Haija' is a lecturer in the Electrical & Computer Engineering Department at the College of Engineering, King Faisal University. His research interest lies in Cryptography and Information Security and has published in renowned journals and conferences on this topic.

Schedule of the Workshop

Duration	Topic
20 min	Cryptographic Terminologies
30 min	Introduction Number Theory -Modulo Operation
50 min	Classical Cryptosystems

20 min	Public Key Exchange - Diffie-Hellman Algorithm
20 min	Public Key Cryptosystem – RSA Cryptosystem
30 min	Introduction to Steganography
10 min	Research interests of cryptography, Other Security topics

Attendance Record

73 Students attended

54 Students registered

Workshop Related Links

Announcement URL:
http://www.kfu.edu.sa/en/Colleges/Computer_Science/Lists/kfuNews/DispForm.aspx?ID=31

Classical
Cryptosystems

Classical
ryptosystems

Classical
Cryptosystems

Classical Cryptosystems
Very old cryptosystems that were primarily used in the pre-computer era.
Too weak, nowadays, too easy to break, especially with computers.
However, these simple cryptosystems give a good illustration of several of the important ideas of the cryptography and cryptanalysis's.
Cryptology (= cryptography + cryptoanalysis)
has more than two thousand years of history.

Classical Cryptosystems - Shift Cipher
Letters of the alphabet are assigned a number as below:
A B C D E F G H I J K L M
0 1 2 3 4 5 6 7 8 9 10 11 12
N O P Q R S T U V W X Y Z
13 14 15 16 17 18 19 20 21 22 23 24 25
Algorithm:
Let $P = C = K = Z_{26}$ and $x \in P, y \in C, k \in K$.
Encryption: $E_k(x) = x + k \bmod 26$.
Decryption: $D_k(x) = x - k \bmod 26$.

Classical Cryptosystems - Shift Cipher
Letters of the alphabet are assigned a number as below:
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Encryption: $E_k(x) = x + k \bmod 26$.
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WORKSHOP 3

Title of the Workshop: Android Application Development

Date: 26th November 2013

Duration: 2 hours (10:30am onwards)

Location: Male Campus, CCSIT

Description

The market share for Android Operating System has observed a tremendous growth capturing 39% in the last quarter of 2013 ranking top amongst all other mobile OS. This workshop was organized by CCSIT to give students a basic introduction to programming with the Android OS. It focused mainly on the basic skills for android app development such as programming buttons, transition between activities, user interface design and controls, text edititing, retrieval and validation. Also, it provided the students with the basic idea about how to create their own Google maps implementation using the standard API.

Biography of the Speaker

Mr. Mujtaba Ali Albinsaad is a student in the Computer Science Department at the College of Computer Sciences and IT, King Faisal University. He has experience developing mobile applications on the Android Platform and has applied his knowledge during his co-op training period assisting in the development of a commercial mobile app for the Saudi Food Bank.

Schedule of the Workshop

Duration	Topic
10 min	Introduction to Android Development Environment
20 min	Animation
30 min	Programming User Interface Controls
20 min	Activity Transition with Data Transmission
30 min	Integrating Google Maps using an API

Pre-requisite

Attendees were required to be familiar with Java Programming Language and has already or currently enrolled in the Object-Oriented Programming 2 course at the college.

Requirement

You are required to have the following items with you if you plan to attend the workshop

- Laptop with an active internet connection
- Android Mobile Phone with min. Android OS 4.1 running (for faster deployment)
- Installed Software: Eclipse, Android SDK and KIES Air Software (Instructions and Links will be provided on registration)
- A Google Mail Account

Attendance Record

31 Students attended

40 Students registered

Workshop Related Links

Announcement URL:

http://www.kfu.edu.sa/en/Colleges/Computer_Science/Lists/kfuNews/DispForm.aspx?ID=32

http://www.kfu.edu.sa/en/Colleges/Computer_Science/Lists/kfuNews/DispForm.aspx?ID=33

Android Application Development

by

Mr. Mujtaba Ali Albinsaad
Student, Computer Science Dept.
College of CS & IT, King Faisal University

Seminar Hall, CCSIT-KFU

Tuesday, 26th November 2013

10:30 am to 12:30 pm

Attendance certificates will be issued

REGISTRATION OPEN

mmisbhauddin@kfu.edu.sa
Ext. 9253
Office: 2078

OR

OR

http://goo.gl/hMZweh

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WORKSHOP 4

Title of the Workshop: Front-End Development Frameworks

Date: 11th February 2014

Duration: 2 hours (10:30am onwards)

Location: Male Campus, CCSIT

Description

Web is accessed by most people these days on their mobile and alternate devices than on a desktop computer. One of the primary strategies we use when we deal with unknown viewport/screen size is the so-called responsive web design. The technique of responsive web design is to serve a single HTML document to all devices by applying different style sheets based on the screen size in order to provide the most optimized layout for that device. This is where front-end development frameworks come into play. A front-end web development framework is simply a collection of production ready HTML/CSS/JavaScript components that we can use in our designs. In this workshop, a brief introduction to front-end frameworks was provided followed by hands-on work with the Twitter Bootstrap Framework.

Biography of the Speaker

Dr. Misbhauddin Mohammed is an Assistant Professor in the Information Systems Department at the College of Computer Sciences and IT, King Faisal University. He presently teaches Web-based Systems at the University. He was also the Chief Expert in the Web Application Development trade in Saudi Skills and the Country Expert in GCC Skills in 2011.

Schedule of the Workshop

Duration	Topic
5 min	Evolution of Front-End Development: From single device to multiple devices
5 min	Responsive Web Design (RWD)
10 min	Front-End Framework for RWD: Bootstrap Familiarity
20 min	Designing the Navigation Pane – Headers and Footers

20 min	Sliders and Hero Element
30 min	Multi-column Layout
10 min	Resposnive Images
10 min	Self-learning: Walkthrough Bootstrap Documentation

Pre-requisite

Attendees were required to be familiar with HTML and CSS and has already taken the Web-based Systems course at the college. Senior students enrolled for Project Implementation were encouraged to register for the workshop.

Requirement

You are required to have the following items with you if you plan to attend the workshop

- Laptop
- A web development application such as NetBeans, Eclipse or any other of your choice. The instructor will be using Brackets IDE which can be downloaded at www.brackets.io and download the framework at https://github.com/twbs/bootstrap/releases/download/v3.1.0/bootstrap-3.1.0-dist.zip

Attendance Record

15 Students attended

17 Students registered

Workshop Related Links

Announcement URL:

http://www.kfu.edu.sa/en/Colleges/Computer_Science/Lists/kfuNews/DispForm.aspx?ID=34

Presentation Slides URL:

https://speakerdeck.com/drmisbha/front-end-web-development-frameworks

Workshop on Front-End Development Frameworks

by

Dr. Misbhauddin Mohammed
Information Systems Dept.
College of CS & IT, King Faisal University

General Hall, CCSIT-KFU

10:30 am to 12:30 pm

Tuesday, 11th February 2014

REGISTRATION OPEN

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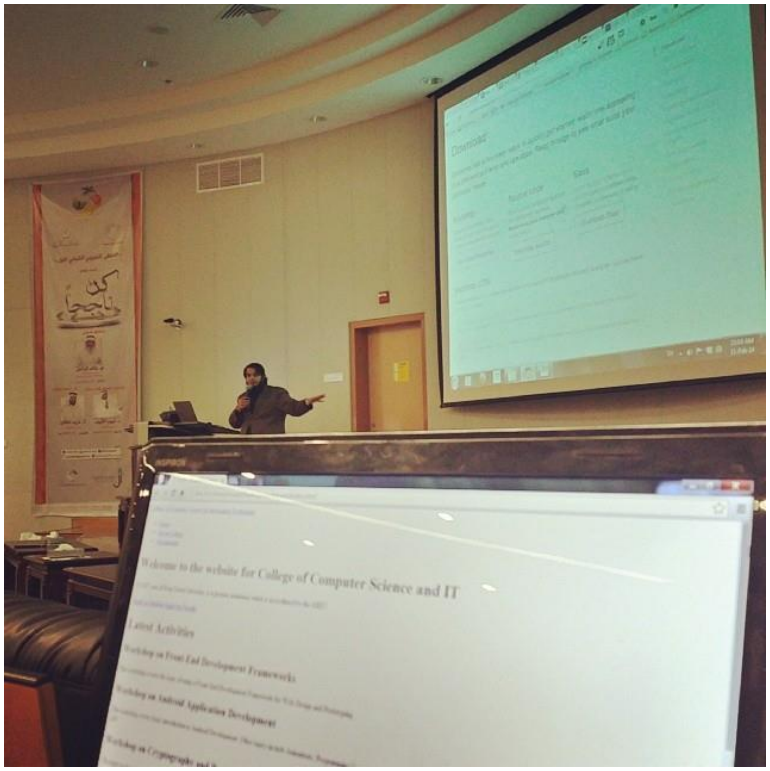

WORKSHOP 5

Title of the Workshop: Front-End Development Frameworks

Date: 11th March 2014

Duration: 2 hours (10:30am onwards)

Location: Female Campus, CCSIT

Note: The same workshop was conducted in the female campus by the same speaker.

WORKGROUP 1

Title of the Workgroup: MAC OS and iOS Application Development

Date of Start: 25th Feb 2014

Date of Stop (for the semester): 13th May 2014

Duration: Twice Weekly (01:00-02:00 on Tue, 12:00-01:00 on Wed)

Location: Male Campus, CCSIT

Facilitator: Dr. Shadi Et-tantawi

Description

The workgroup for Mac OSX and iOS Programming was established to learn and explore the Mac Operating System. This workgroup included selected students and volunter faculty members who will learn to program applications on Mac and iOS led by a faculty facilitator using his expertise and supplementary online resources.

Registration Record

30	Students applied	10	Students accepted	4	Faculty members

The 6th Local Programming Competition

كلية علوم الحاسب و تقنية المعلومات
COLLEGE OF COMPUTER SCIENCES & IT
مسابقة البرمجة
PROGRAMMING CONTEST 6TH

CCSIT annually organizes a programming contest under the banner of "Local Programming Contest". This contest is based on the ACM Collegiate Programming Contest held worldwide. Teams of two are given 5 problems to solve within 5 hours. They have the freedom to choose the programming language (C, C++ or Java). This is the 6th time this competition was held.

Updates on the Competition

1. **Problem Set:** The competition is trying to be similar to other national and international competition of programming. Hence, the number of questions this time had been increased from 5 to 8 questions to be solved in the same 5 hours.
2. **Team Size:** The team size was increased from 2 to 3 as the top three winners of this competition will be allowed to compete in the upcoming Gulf Programming Competition where the max team size is 3.

Pre-competition Workshop

In order to give the participants an idea about the competition, an event for discussing the contest's rules and regulations with all the teams involved was organized by the committee. This presentation was held on Tuesday, 6th May 2014 from 10:30am in the Seminar Hall (Beside the Student's Play Room (or Recreation Room). Female participants were able to participate in this presentation through video-conferencing.

Apart from this, the committee also maintained a blog where all previous questions from the LPC competitions were uploaded for the participants to see, discuss and practice. This was don't to ensure that maximum student groups could solve the problems in the competition. The blog can be accessed from http://www.drmisbha.net/lpc6/

Other resources shared with the partipants included questione from other local and international programming competitions.

1. Gulf Programming Competition
http://events.kustar.ac.ae/gpc2013/wp-content/uploads/2013/02/Problems_GPC2012.pdf

2. Arab Collegiate Programming Competition
http://acm-acpc.org/acpc/2010/

3. International Collegiate Programming Competition
https://icpcarchive.ecs.baylor.edu/

Rules of the Competition for LPC6

1. Electronic devices and peripherals (laptops, pocket calculators, mobile phones, CDs, flash memories, …) are not allowed in the contest hall.

2. Each team will be allocated a single computer and they need to that computer to solve their assigned problems.
3. Rebooting the computers under any special circumstances during the contest must be done with the presence of an invigilator.
4. Solutions are judged by running them using judges' test cases
5. The contest judges are solely responsible for determining the correctness of the submitted solutions; their decision is final.
6. Teams are ranked according to the most problems solved. Teams who solve the same number of problems are ranked by least total submission time.
7. Contestants requiring any kind of help should remain seated while being assisted by an invigilator.
8. Any team attempting to communicate with other teams, to tamper with the machines, or disrupt the contest environment in any way will be disqualified

Programming Environment

- Windows 7 Operating System
- NetBeans 8 with Java and C/C++ Plugins
- Eclipse with Java and C/C++ Compiler
- Turbo C
- CodeBlocks

Evaluation System

The PC^2 system that used by the ACM International Collegiate Competition was used for submissions byt the participants and the by the judging committee for evaluation.

Awards

The top three teams were awarded with the following prizes:

1. Cash Coupons from Jarir Bookstore (Varying amounts based on the team's position)
2. One iPad to each member of the winning teams (spomsored by CISCO)
3. Opportunity to be trained and to participate in the next Gulf Programming Contest.

Participation Statistics

12 Male teams

8 Female teams

3 Winning groups

Statistics

All teams used **Java** as the programming langauge

47 Solutions submitted

23 Correct submissions

24 Incorrect submissions

Problem Description	% solved	Total Solved	Correct	Incorrect
Twitter Wall	37.50	8	3	5
Date Palm	66.66	9	6	3
Second Order Rnge-Kutta Method	0.00	0	0	0
Back to Sixth Grade	60.00	15	9	6
P2 Calculate This!	0.00	0	0	0
Morse Code	33.33	12	4	8
Graph Theory	0.00	1	0	1
Pattern Matching	50.00	2	1	1
Totals	**48.93**	**47**	**23**	**24**

Fastest Solutions

Problem	Team	Time (in minutes)
Back to Sixth Grade	team4	20
Morse Code	team4	41
Date Palm	team7	75
Twitter Wall	team4	128
Pattern Matching	team5	275

Final Scorecard (Top 5)

Team	Solved	Points
Team 4	4	402
Team 7	3	471
Team 1	3	662
Team 9	2	293
Team 5	2	422

Winning Teams

First Place: Team 4	Second Place: Team 7	Third Place: Team 1
Yousef Al-Afaliq	Hussain Albaqshi	Hasan Al-Omran
Mohammed Al-Owa	Ali Almazidy	Mohammed Al-Nagdy
Abdulrahman Al-Omair	Hussain Althani	