Pre-Conference Workshop

Do-It-Yourself (DIY) Android App Development
Hands-on Workshop on MIT App Inventor2

Venue:
Open University Malaysia (OUM)
Block B, Zon C, Jalan Tun Ismail
50480 Kuala Lumpur, MALAYSIA

Dates: 24-26 November 2016

Who should participate?

- Lecturers, Teachers and Trainers
- Educational Technologists
- Students (IT, Computer Science, Education, Educational Technology, Engineering, Business, Sales, Marketing etc.)
- Entrepreneurs and business owners looking to build their own Android mobile app
- Anyone interested in learning mobile app development on the Android platform

Important Note:

- No prior programming or IT experience required
- The workshop is **limited to 25 persons** only based on first-come, first-served basis.
- Each participant must have
    - A personal Google or Gmail account
    - Personal laptop computer with WiFi (optional)
    - Android Smartphone or Tablet with Wifi or USB cable (*preferable but not a must*)
    - Appropriate Device drivers (optional)

Objectives:

At the end of the three-day workshop, participants are expected to be able to:

1. Describe the features of MIT App Inventor2 (AI2) platform.
2. Use the Designer and Blocks Editor.
3. Implement basic components of App Inventor2 in mobile applications.
4. Design rich user experiences (UX).

5. Use at least 4 instructor-led tutorial activities to develop apps.
6. Explain and use advanced concepts of Android programming.
7. Perform packaging and distribution of applications.

Workshop Overview

The Android operating system (OS) is arguably dominating the modern day smartphone and tablet market. The Free and Open Source (FOSS) frameworks and their ease of use have made Android the most sought after OS by manufacturers such as Samsung. With thousands of apps available through the Google Play store, Android provides a feature rich experience to the user where there is an app for just about anything imaginable. As such, Mobile Business (mBusiness), Mobile Learning (mLearning) and Mobile Government (mGovernment) have become among the fastest growing areas that allow users to access information and services anywhere, anytime though their mobile devices.

Traditionally, Android app development is a highly specialised field reserved only for software engineers and programmers. However, the concept of 'Visual Programming' has democratised this space and allows non-programmers to build powerful applications using logical building blocks. It can best be explained as constructing a jigsaw puzzle using fitting virtual puzzle pieces. App Inventor (AI2) platform developed by the Massachusetts Institute of Technology (MIT) is the leading visual app development platform. It harnesses the power of Google to provide a robust solution for customised app development for the Android OS.

This workshop is specifically designed to focus on the basic and some intermediate concepts of Android app development on the AI2 platform. By following the hands-on activities and tutorials, you will learn to use the Designer and Blocks Editor components of AI2 to create apps which can be readily downloaded and used on Android smartphone or tablet. Furthermore, the hands-on sessions will guide you to use features such as text-to-speech, accelerometer, speech recognition, drawing, video, games and music playback. You will also create six intermediate applications during the tutorials that will give you a solid foundation to develop more complex apps in future. Finally, you will learn how to package and distribute the apps you have developed. Your workshop facilitator, Dr. Ishan Abeywardena, has successfully conducted several workshops on the topic at Sukhothai Thammathirat Open University (STOU), Thailand; The Open University of Hong Kong (OUHK); the Open University of Sri Lanka (OUSL); and the Commonwealth Educational Media Centre for Asia (CEMCA), India.

Facilitator: **Dr Ishan Abeywardena**
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Workshop Schedule:

TIME	GETTING STARTED WITH ANDROID APP DEVELOPMENT
	Day 1 – 24 November 2016 (Thursday)
8.30am – 8.45am	Registration
9.15am – 9.30am	Ice-breaking
9.30am – 9.45am	Objective and expected outcome of the workshop Learning outcomes of Day 1
9.45am – 10.00am	Introduction to Visual Programming and MIT App Inventor
10.00am – 10.15am	*Morning Tea Break*
10.15am – 10.30am	Introduction to Visual Programming and MIT App Inventor Cont'd
10.30am – 11.30am	Device setup for App development and debugging
11.30am – 11.45am	Introduction to the development environment (designer and blocks editor)
11.45am – 12.15pm	Introduction to available modules for App development
12.15pm – 1.00pm	Using basic components: 1. TexttoSpeech App: *Loud Mouth* 2. AccelorometerSensor App: *Shivers* 3. SpeechRecognizer App: *Speak to Me*
1.00pm – 2.00pm	*Lunch*
2.00pm – 3.00pm	Using basic components: 4. Canvas App: *Scribble* 5. Ball App: *Ball Bounce* 6. Orientation Sensor and Clock App: *Move the Ball* 7. Camera App: *Say Cheese!* 8. Camcorder and VideoPlayer App: *Action Capture*
3.00pm – 3.15pm	*Afternoon Tea Break*
3.15pm – 3.45pm	Q&A Session
3.45pm – 4.00pm	Recap and wrap-up

TIME	INTERMEDIATE CONCEPTS
	Day 2 – 25 November 2016 (Friday)
9.00am – 9.15am	Learning outcomes of Day 2
9.15am – 10.00am	Tutorial 1: Pet the Kitty
10.00am – 10.15am	*Morning Tea Break*
10.15am – 11.15am	Tutorial 2:
11.15am – 12.30pm	Tutorial 3: Swat the Mosquito
12.30pm – 1.00pm	Q&A session
1.00pm – 2.00pm	*Lunch*
2.00pm – 3.00pm	Tutorial 4: Virtual Chemistry Experiments
3.00pm – 3.15pm	*Afternoon Tea Break*
3.15pm – 3.45pm	Tutorial 4: Virtual Chemistry Experiments *(contd…)*
3.45pm – 4.00pm	Recap and wrap-up

TIME	Advanced Concepts
	Day 3 – 26 November 2016 (Saturday)
9.00am – 9.15am	Learning outcomes of Day 3
9.15am – 10.00am	Using advanced concepts: 1. Built-in Blocks 2. Functions 3. Variables 4. Arithmetic and Boolean Algebra 5. Control Structures 6. Exception Handling
10.00am – 10.15am	*Morning Tea Break*
10.15am – 11.15am	Tutorial 5: Scan and Learn
11.15am – 12.45pm	
12.45pm – 1.00pm	Packaging and distribution
1.00pm – 2.00pm	*Lunch*
2.00pm – 3.00pm	Storyboards and prototypes Tutorial 6: Voice Note
3.00pm – 3.15pm	*Afternoon Tea Break*
3.15pm – 3.45pm	Publishing Apps on Google Play
3.45pm – 4.00pm	Reflections and feedback