HOW TO BUILD APPS FOR THE CLASSROOM

Teacher: João Garrido
Course Duration: one week, from Monday to Saturday, 30 hours
Number of Participants: Min. 6 – Max. 20

DESCRIPTION

"MIT App Inventor is an intuitive, visual programming environment that allows everyone – even children – to build fully functional apps for Android phones, iPhones, and Android/iOS tablets. Those new to MIT App Inventor can have a simple first app up and running in less than 30 minutes. And what's more, our blocks-based tool facilitates the creation of complex, high-impact apps in significantly less time than traditional programming environments." (Source: https://appinventor.mit.edu/about-us)

Technology has expanded the field of education by introducing mobile educational apps, which greatly help teachers and students. The use of mobile devices and tablets was once restricted in classrooms; however, these gadgets now have the power to transform monotonous lessons into fun and exciting lessons. With MIT App Inventor, learning isn't just limited to the use of apps to learn some subject, students can plan, create and debug their own apps. In addition, these apps creation enhance student engagement, improve their group work skills through trial and error, and the development of entrepreneurship.

When it comes to teachers, they can easily use this educational app inventor to develop students' computational thinking. They can also extend the learning process outside the classroom. This opens the door to an ocean of knowledge for students. Students can work on these applications anywhere and anytime, and teachers can thus keep students always connected to their classrooms.

If you are a teacher, this is a course for you. In this course you will learn how to use MIT App Inventor to develop classroom activities and learning experiences.

The course will be very practical, combining theory with practice, group work and discussion with hands-on phases in which the participants will have the opportunity to create their own apps.

LEARNING OUTCOMES

Participants to the course will learn to:

- Interact with MIT App Inventor to understand their usefulness and applicability for teaching in different situations of learning.

- Acquire skills using MIT App Inventor to create their own apps:
  - Create apps to build drawing, animation, and games;
  - Build apps with texting and location sensing;
  - Build Quizzes and Informational Apps.

- Apply learned skills creating an app in groups.

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PROGRAM

Monday
Introduction
- Introduction of the course and the external activities.
- Icebreaking activity to introduce the trainer and the participants;
- Introduction to AI2 and Event-Driven Programming.
  - What is App Inventor?
  - Setup App Inventor;
  - Creating the first App.

Tuesday
Build Drawing, Animation, and Game Apps
- Building apps that let the user draw on a canvas;
- Creating variables to remember information;
- Program an app to do Math (e.g., incrementing a score);
- The basics of animation and how to use the Clock component and ImageSprite properties to animate objects;
- The basics of coding randomness.

Wednesday
Build Apps with Texting and Location Sensing
- Building apps that send texts and process incoming texts;
- Using a "for each loop" to process a list of data items;
- Use of GPS to obtain the device's location information;
- The basics of persistent data and the TinyDB component;
- Show web pages, including maps, within an app;
- How URLs work and how to show dynamic information.

Thursday
Build Quizzes and Informational Apps
- Index variables and how they are used to traverse a list of information;
- The ListPicker component: let a user choose an item;
- Basic understanding of complex data like lists of lists.

Friday
Practical Application Work
- Creation and Presentation of an App developed through group work project.

Saturday
Course Closure & Tour
- Course evaluation and awarding of the course Certificate of Attendance.
- 21st Century Skills – The Values of Art and Culture – Excursion Tour and external cultural activities.