UCSD StudentTECH 2020

Advanced App Creation for Middle School

Sponsored by the San Diego Supercomputer Center,
University of California, San Diego

Create Awesome Apps with MIT App Inventor

Monday- Friday, July 27--31, 2020

Class meets on the campus of UC San Diego from 8:30 am - 3:00 pm

Course Overview:

How to create advanced mobile apps using MIT App Inventor 2, utilize databases to expand mobile app capabilities, work in tandem with team members to build, test and evaluate mobile apps, export app files to share with family and friends.

In this course students will discover and use the advanced features of MIT App Inventor. The course begins by reviewing the foundational principles of App Inventor. Students will then learn how to apply App Inventor extensions, merge projects, and connect to external sensors. Students will be able to program their apps to make decisions using conditional blocks and learn how to use “getter” and “setter” blocks. Students will learn how to use custom databases and find out how databases can dramatically boost app capabilities. They will also learn how to store data through App Inventor’s TinyDB components.

Students will create two or three of their own apps from design stage, build stage, testing stage to finished product learning from each experience as they share, reflect and receive constructive feedback. Students will be able to export and share their app files with others.

What you can expect from this workshop:

- A review of the basic functions of MIT App Inventor 2
- How to design and program mobile apps for an Android device
- A working understanding of the advanced features of MIT App Inventor 2
- How to merge projects when working in tandem with team members.
- Learn how to enter the App of the Month competitions
- Take home your own custom app files so others can try out your app

Class Structure and Learning Goals:

Each day includes follow-along instruction on how to use the advanced features of MIT App Inventor 2 and ample time for students to work individually or in teams so they can apply the concepts they learned in the class to make actual mobile apps of their own. Students wrap up each day with a group reflection on what they have learned and share what they would like to learn the next day.

Prerequisites:

- Must be a current student in grades 5-8
- Have some experience using MIT App Inventor 2
- Have an interest in learning how to make mobile apps for Android devices
- Eager to ask questions, share ideas, and help others in the class

Each day will consist of instruction and ample time for students to work on their own apps.

Topics to be covered each day include:

Day 1:
- Review of designer and programming modes
- Review of user interface components, layout options, media
- Practice using canvas and image sprits for animations
- Introduction to sensors
- Begin to brainstorm Ideas for apps
- Examples of apps using advanced features

Day 2:
- Present/Pitch app ideas to classmates
- Create draft of app user interface
- Practice using sensor components: 1-6
- Introduction to TinyDB and extensions

Day 3:
- Display app user interface to classmates
- Practice using sensor components: 6-13
- Follow along phone contact app using TinyDB
- Practice importing extensions
- Introduction to CloudDB, file export and file storage

Day 4:
- More advanced features
- Debugging of apps
- Testing each other's apps
- Feedback on each other's mobile apps

Day 5:
- Revisions of final mobile apps
- Presentation of all final mobile apps

All about Advanced MIT App Inventor
You will gain the skills to create mobile apps with advanced features that will boost the app's capabilities. By utilizing extensions, databases, and sensors your apps will truly amaze your family and friends. You will have a hands-on computer experience in this class so be prepared to be creative and have fun!

About Ruth Maas

Ruth Maas taught middle and high school computer science for nearly a decade. She has presented at numerous technology workshops and conferences. She teaches online courses in technology including topics such as artificial intelligence, the impact of social media on society, and computer programming. Students from Mrs. Maas' summer courses have won the MIT App of the Month Award.

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