

CAS 703 Final Project Usage Guide

A Simple Walk Speed Detector

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ABSTRACT

This walk speed detector application is developed with MBSE technologies. The development process is driven by model, which involves ADT as the development tool. This simple guide is written to explain how to build and configure tools and how to run/repeat the study.

Keywords

MBSE; MDE; ADT; Android; model; meta-model

1. INTRODUCTION

I developed this Android application by using the MBSE technologies. The tool I used is ADT (Android Development Tools), which is based on Eclipse. The application is adopted MVC pattern. Firstly, the Android models will be created. Then the layout editor designs the interface while is automatically transformed into Android-specified XML code. Finally, ADT will generate the java code from the models and XML code. The java code will drive the runtime environment to produce an Android application. This usage guide will explain how to build and configure the ADT tool and how to run/repeat the walking speed detector project.

2. SETUP ANDROID DEVELOPMENT ENVIRONMENT WITH ADT

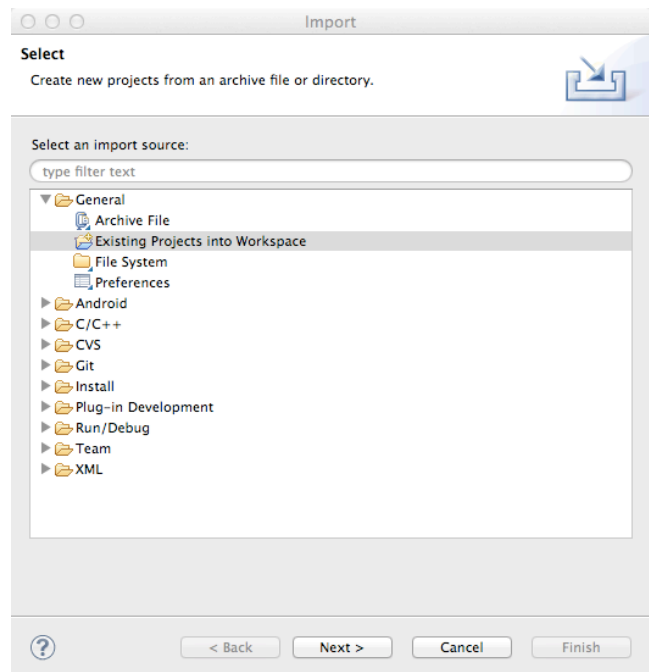
A. Download and Install ADT

ADT (Android Developer Tools) is a plugin for Eclipse that provides a suite of tools that are integrated with the Eclipse IDE. We can download it from Android official website at:

<http://developer.android.com/sdk/index.html>. The ADT Bundle provides everything you need to start developing apps, including a version of the Eclipse IDE with built-in ADT to streamline your Android app development. Make sure the JDK (version above 1.6) has been properly installed on development computer.

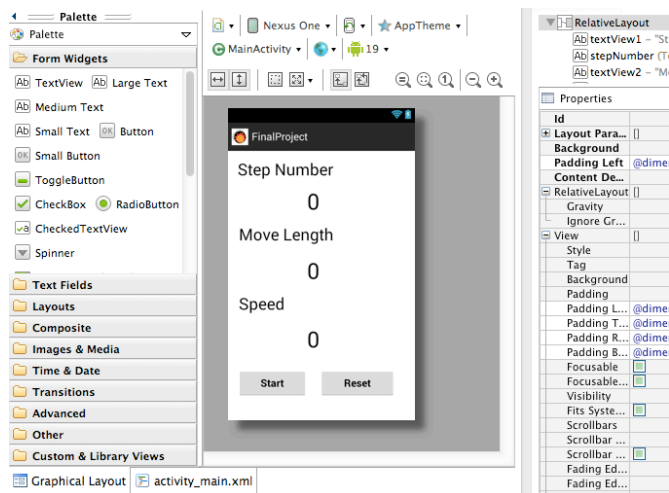
B. Import the Study Project

Start ADT and choose “File->Import...” A dialogue appears in the center of screen.



Select the “Existing Projects into Workspace” and click **Next**, then choose the folder where the project is in. click **Next** until the end. Then the project is loaded.

From the “Package Explorer” find “res->layout->activity_main.xml”, the graphic layout editor will be opened. You can design the interface here.

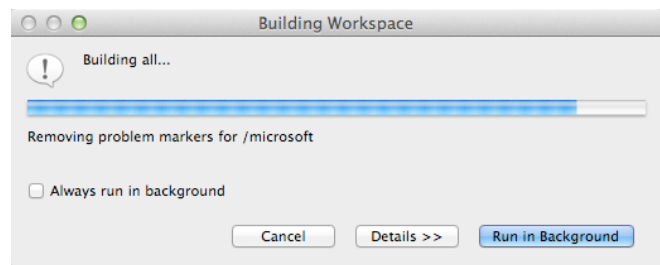



The Android models can be automatically generated to xml code which will also be transformed into java code when build the Android app as shown in the next picture.

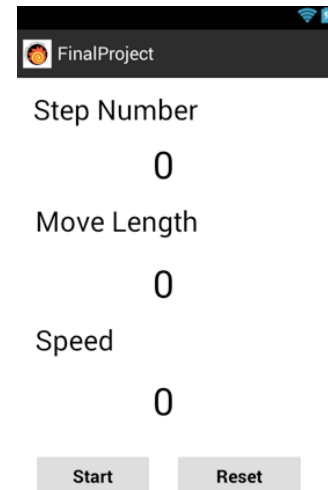


3. Generate and Run on the phone

To generate the application, first we need to connect an Android mobile to the laptop. Then choose “Project->Build All”.

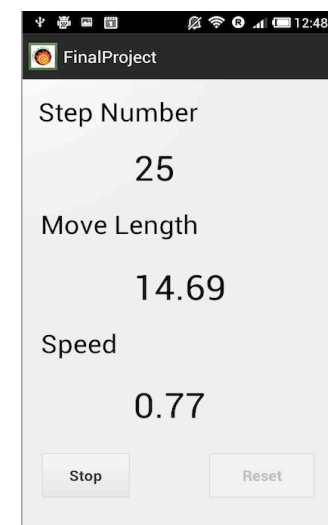


If there are no problems reported, we click the green run button  then choose our device, the application will be installed on the phone.



4. Use the application

Hold the mobile in your hand, and then press the start button. After the app is started, walk as normal as you do and the application will detect the step numbers you take, your walking distance, and your walking speed.



If you want to stop just press the Stop button and the detector will stop running. If you want to try again, first press the Reset button to clear the former data, then press Start button.

5. Acknowledgement

For more information about this application, please see the final project report. If you have any questions, please feel free to contact me with email.