

Using Android to develop mobile applications

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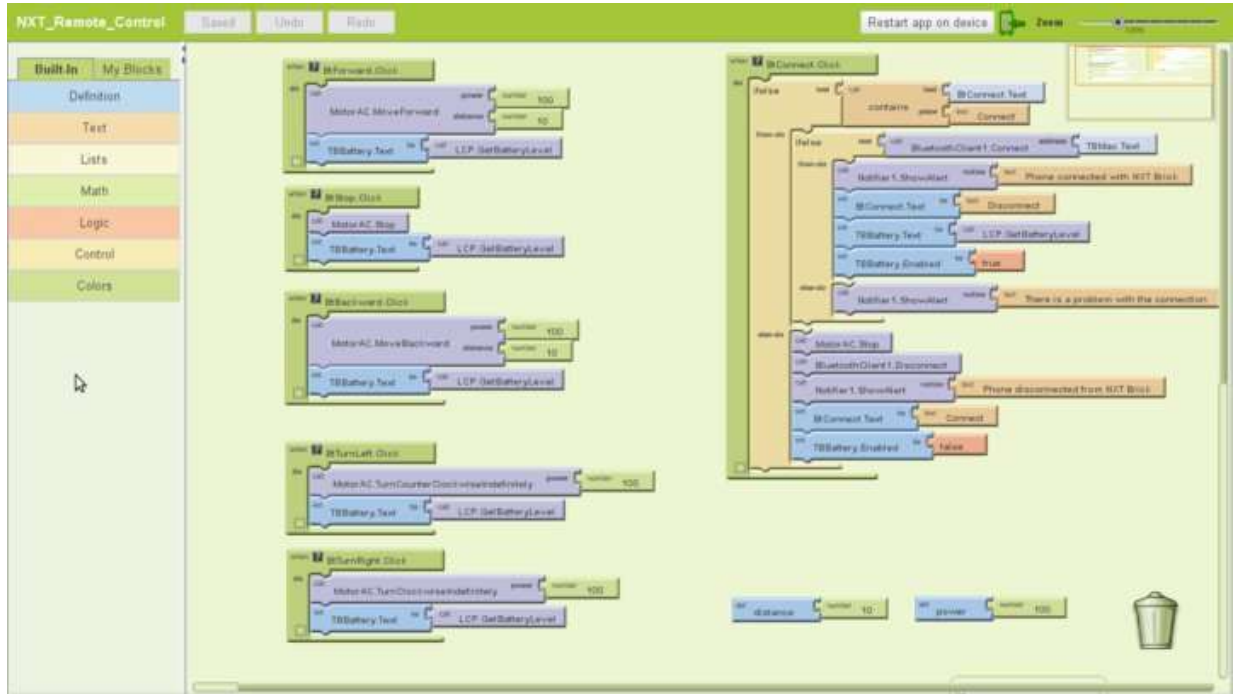


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Introduction

This document has been written to learn App Inventor in 90 minutes in a easy way. Android is a operating system for smartphones. App Inventor is an internal project from Google to learn in a graphical way how to develop basic applications for Android.

Further information about App Inventor

<http://appinventor.googlelabs.com/about/>

How to install App Inventor?

To install the platform App Inventor, it is necessary to install the following software. In order to complete the installation, try to finish the following tasks:

1. Install software in your system
 1. Install Java SDK
 2. Install a package about App Inventor
2. Make operations on Internet
 1. Create a Google Account

Install Software in your system

App Inventor is a platform which it runs in a web browser but when a user has to define a logic for the application it is necessary to use a graphical editor based on Java's technology so the user has to install a package about Java and App inventor.

Install Java

Java is a programming language used with App Inventor and it is necessary. In Java terms, exist 2 ways to install Java, Using Java JRE or using Java JDK. In our case we will install Java JDK because we will use Java JDK to develop software for robots using Java.

To install Java JDK6, execute the following instructions on Ubuntu 10.04:

```
sudo add-apt-repository "deb http://archive.canonical.com/ lucid
partner"
sudo aptitude update
sudo aptitude install sun-java6-jdk
```

Install packages for App Inventor

Once you have installed Java on your system, it is necessary to install a package from the following website: <http://appinventor.googlelabs.com/learn/setup/setuplinux.html>

The package is:

http://dl.google.com/dl/appinventor/installers/linux/appinventor-setup_1.1_all.deb

Once you have downloaded the file, execute the following command in a shell:

```
sudo dpkg --install appinventor-setup_1.1_all.deb
```

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Creating a Google Account to use App Inventor

Finally, it is necessary to create a Google Account to use the service App Inventor from Google.

Using App Inventor

Introduction

To begin to use App Inventor it is necessary to visit website about App Inventor:

<http://appinventor.googlelabs.com/>

The main screen allows the user to select the project to develop or a way to create a new project.

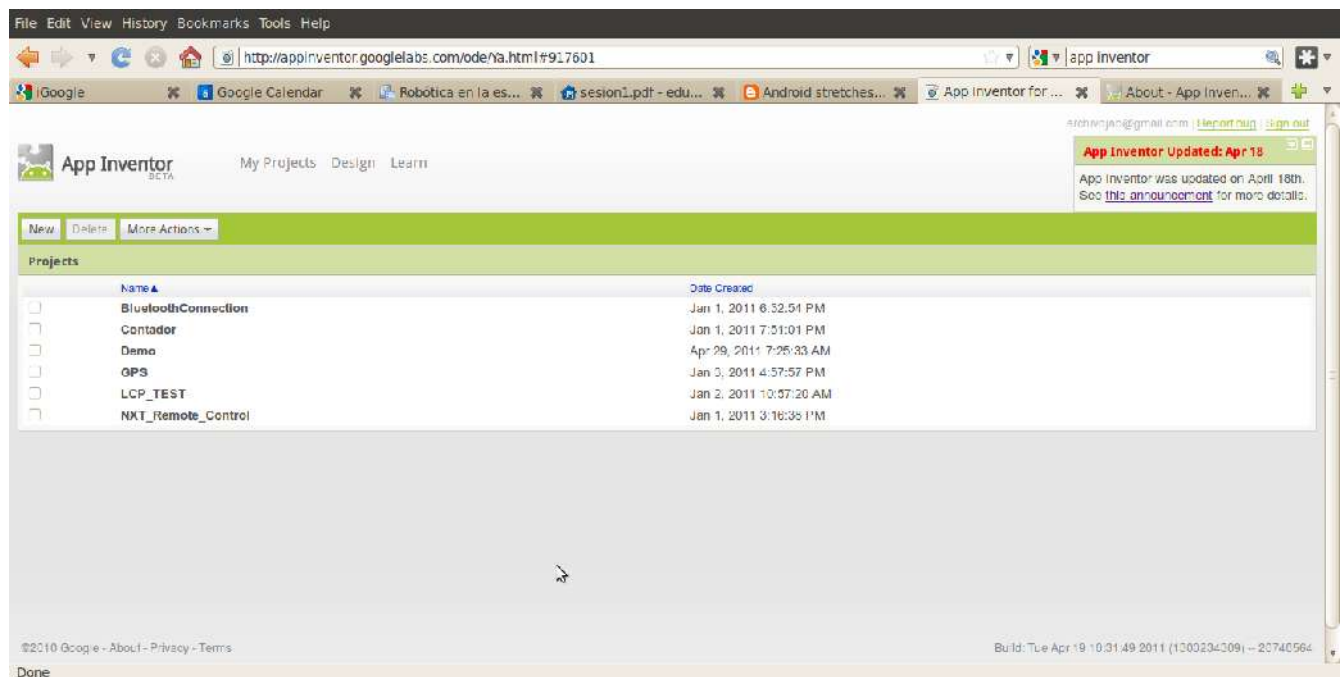


Illustration 1: Main Screen. Select the project to continue developing

Creating a new project

When you create a new project, it is necessary to give a name for the whole project. Once you have started a new project, the user interface is the following one:

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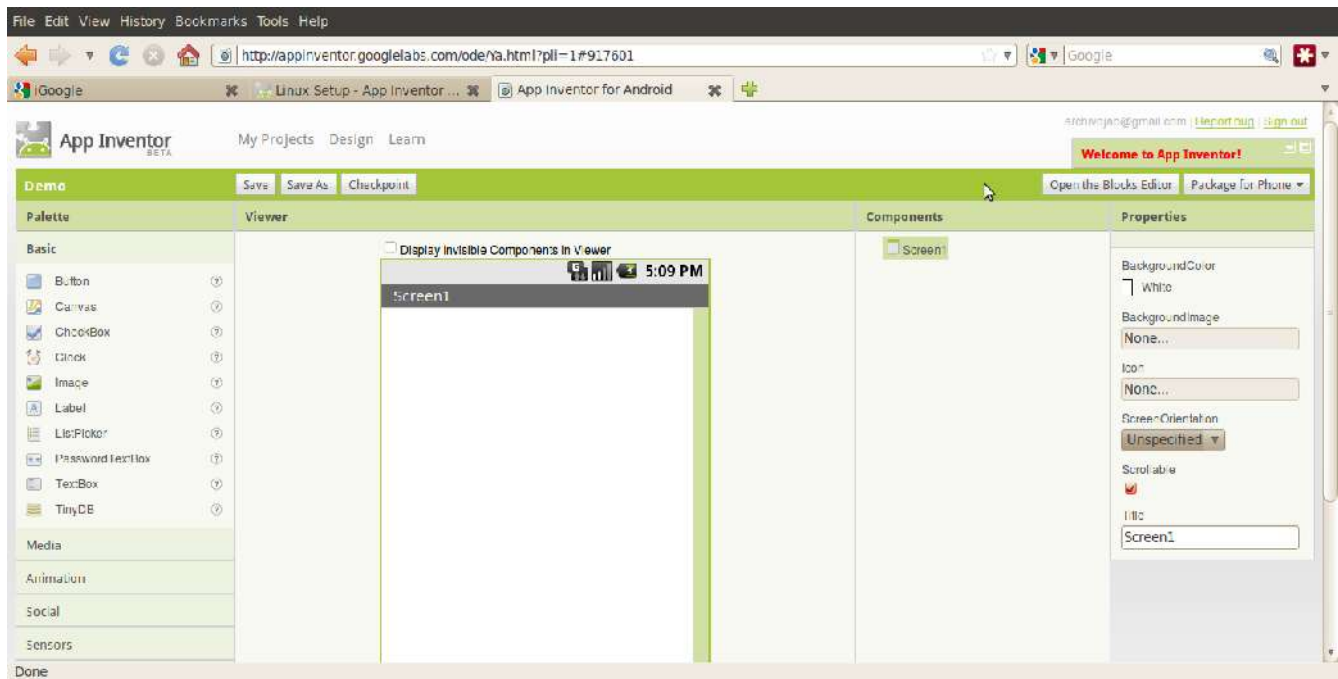


Illustration 2: Creating your first project

The user interface organizes the work in some areas. The areas defined are:

1. Objects available in any Smartphone
2. Visual interface to emulate the screen.
3. Properties about a selected object
4. Block Editor to define logics for events in active objects.

Objects are organized in libraries and they are organized in the left side of the screen. When you edit an object, his properties are located in right side of the screen. Web editor is useful to add objects and edit some properties. Once you have added some objects, it is time to develop a logic so click in the button named “Open the block editor”.

Once the application has been downloaded in your system, execute it to see the editor.

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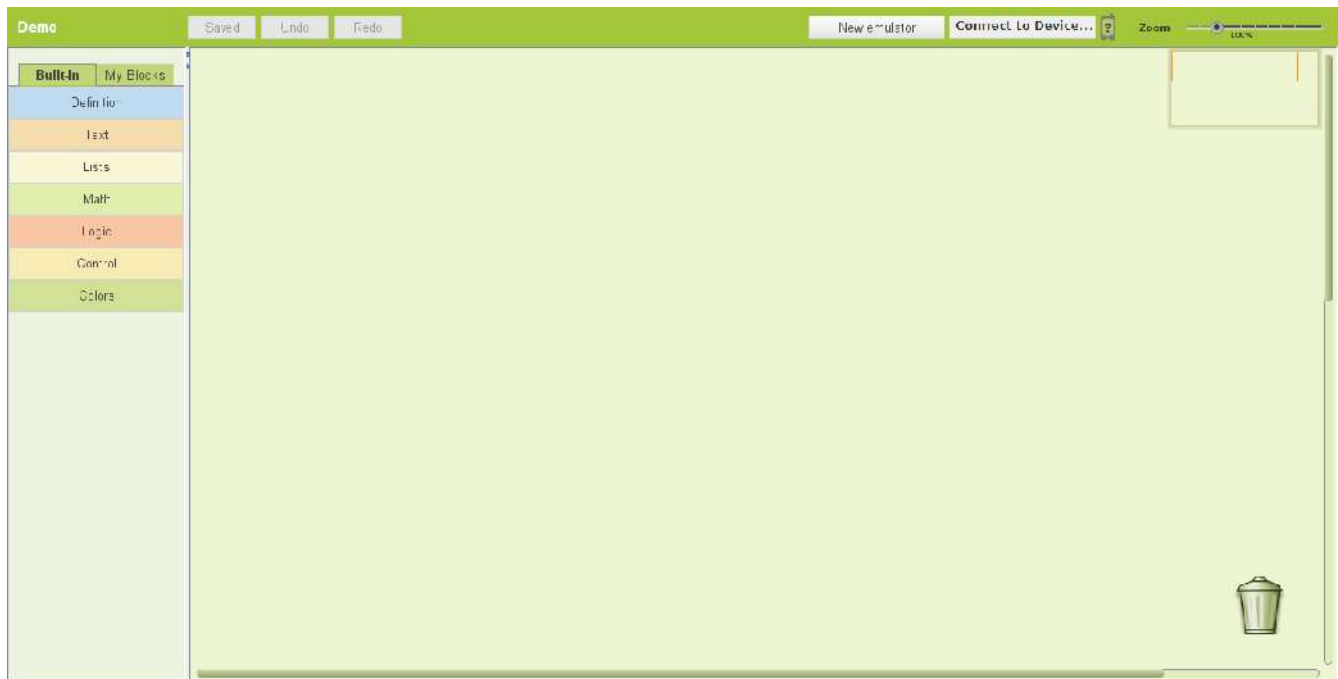


Illustration 3: The block editor

Block editor is an excellent tool to begin to understand the concepts about programming. The editor on the left side of the screen organizes the way to model any logic in areas. Besides, the editor allows to develop logics for objects added in the editor in the web browser. The way to develop any program is using a Drag-Drop technique with the objects defined in the object palette. When you have finished to develop, launch an emulator to evaluate the results.

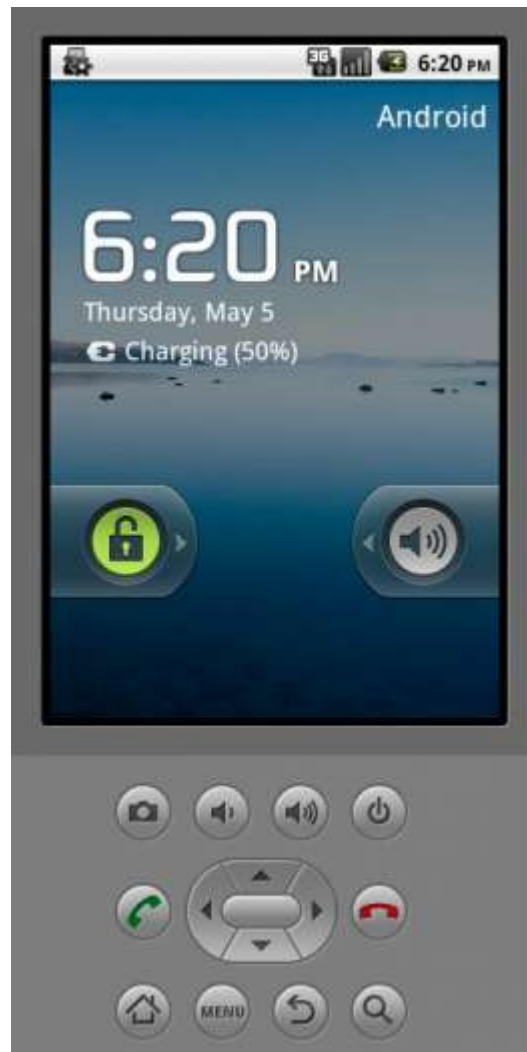


Illustration 4: Android emulator

Creating a the example “Hello World”

In any project is necessary to define a name to begin.

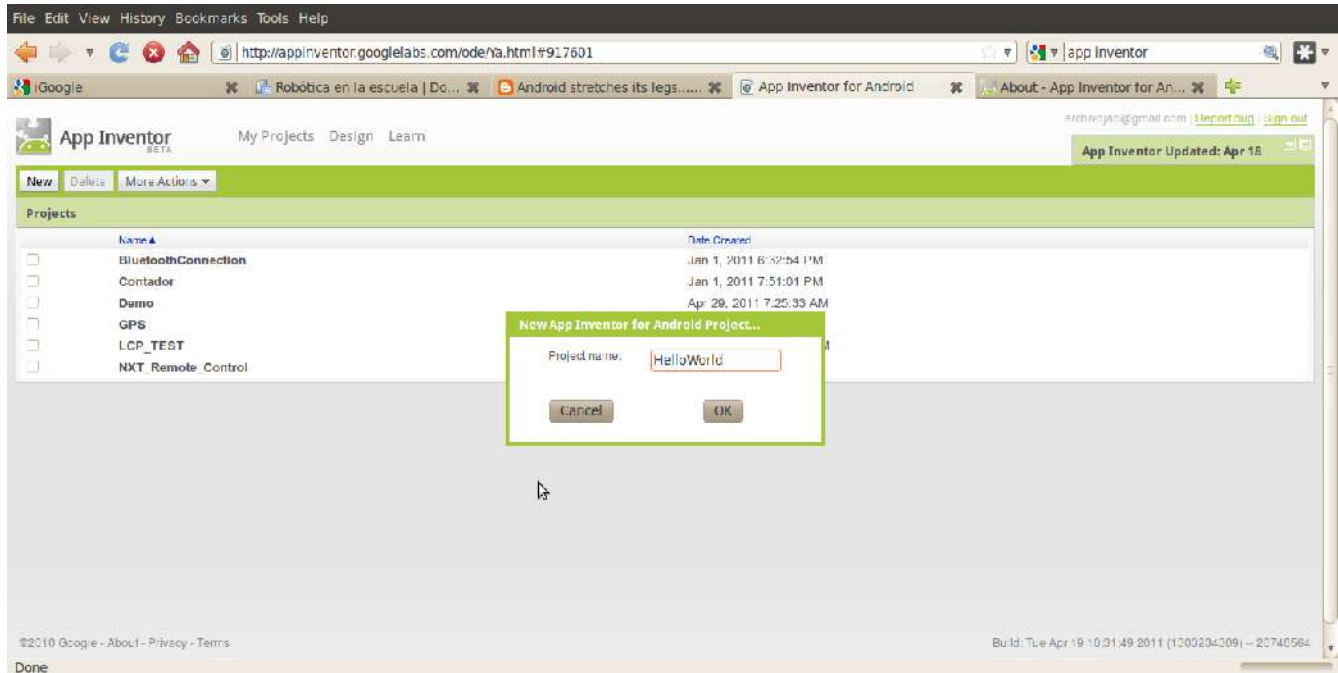


Illustration 5: Your project needs a name

Once you have created the project and you see a blank screen, try to add the following objects:

1. Image
2. Textbox
3. Button
4. Label

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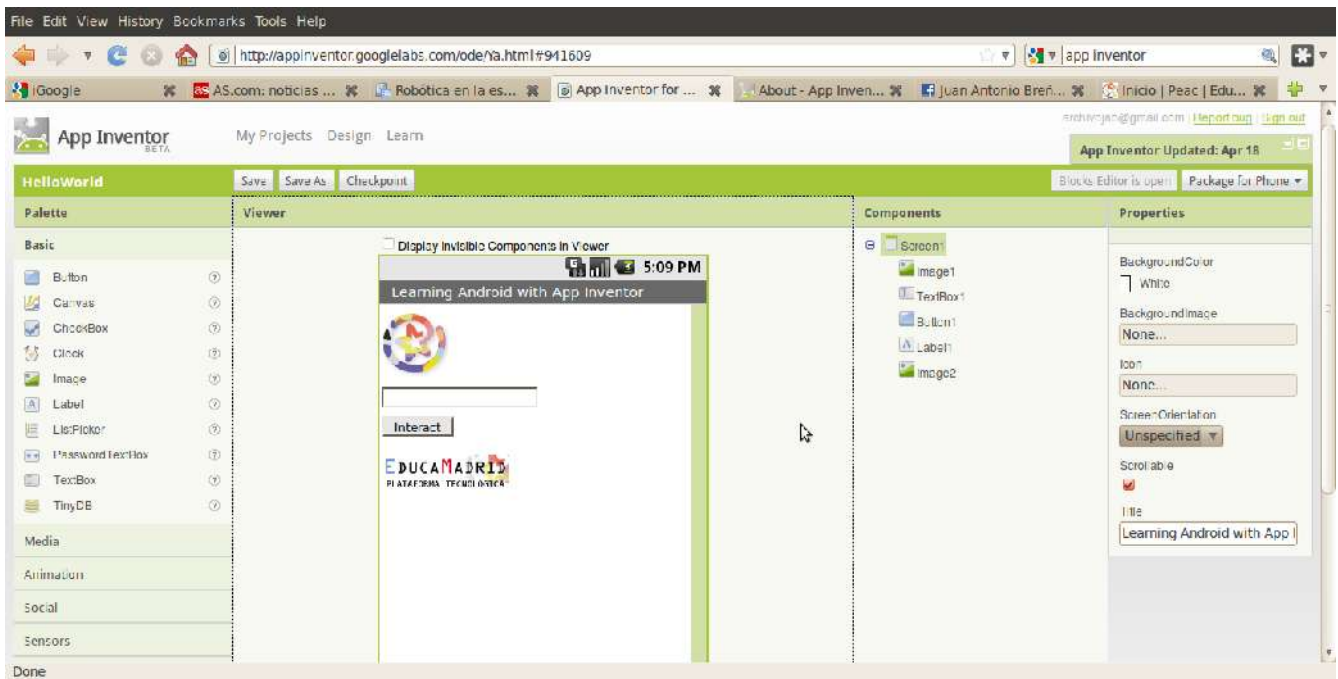


Illustration 6: Adding some objects to interact

In this moment, open block editor to generate a simple logic to understand the concepts:

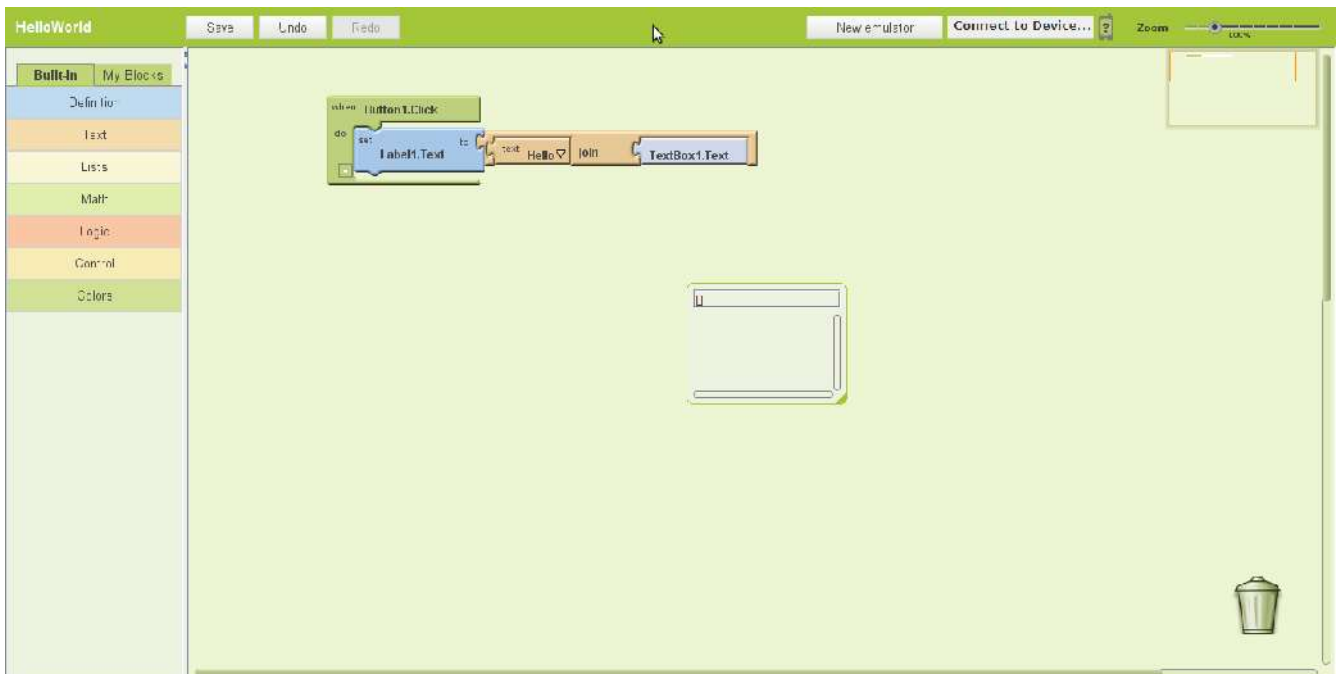


Illustration 7: A simple Logic with app inventor

If you have finished the logic, tries to send the application into your emulator:

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Illustration 8: Transfer the program to the emulator

Finally, you will see the application running in the emulator.



Illustration 9: Hello World

Summary

In this chapter, you should have learnt the following concepts:

1. How to create a project in App Inventor
2. How to add objects in a screen
3. How to configure objects with the editor
4. How to add interactions to events for every object added into the screen
5. How to launch an emulator
6. How to transfer the project to the emulator

Exercises

To reinforce the knowledge shown in this document, here are other exercises to do:

1. Create a calculator which sums 2 numbers
2. Test sensors mounted inside the smartphone
3. Create a connection with an NXT brick

References

Some references used to write this document.

<http://googlecode.blogspot.com/2010/12/android-stretches-its-legs-errr-wheels.html>

<http://appinventor.googlelabs.com/ode/Ya.html>

<http://d.android.com/guide/developing/device.html#setting-up>

<http://code.google.com/p/app-inventor-for-android/wiki/ReportingBugs>