

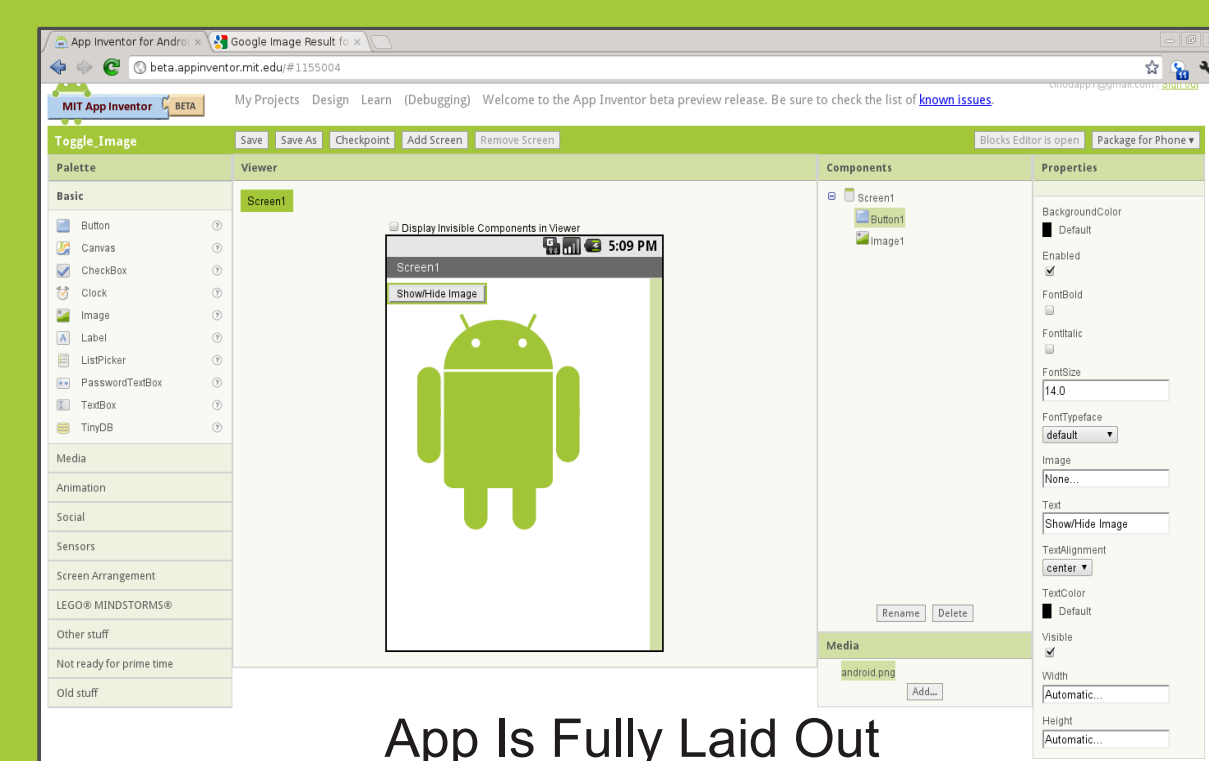
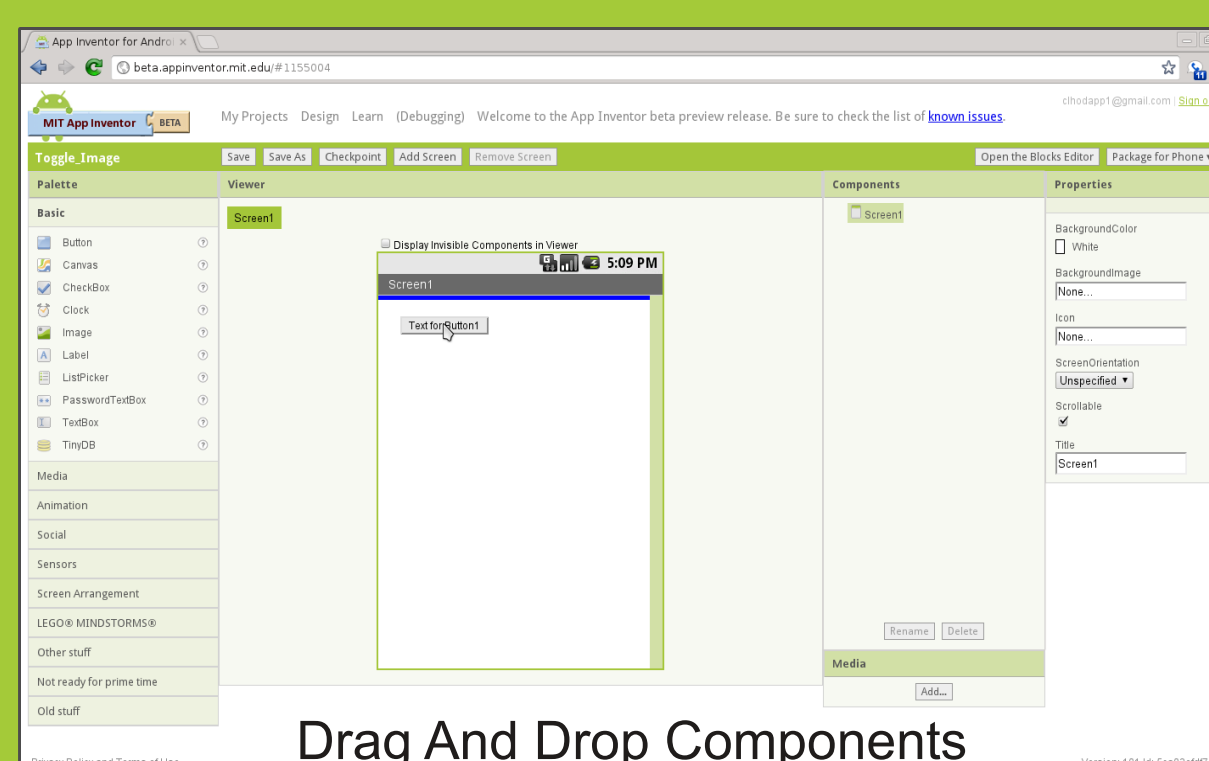
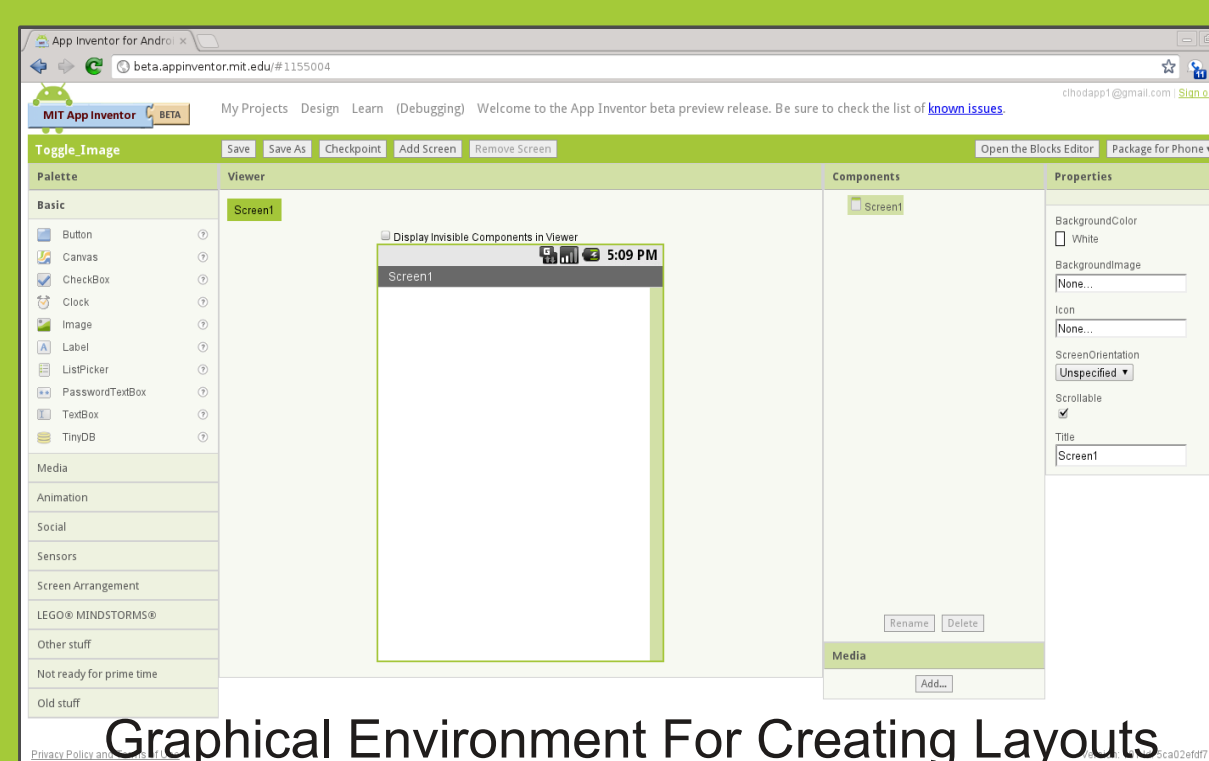
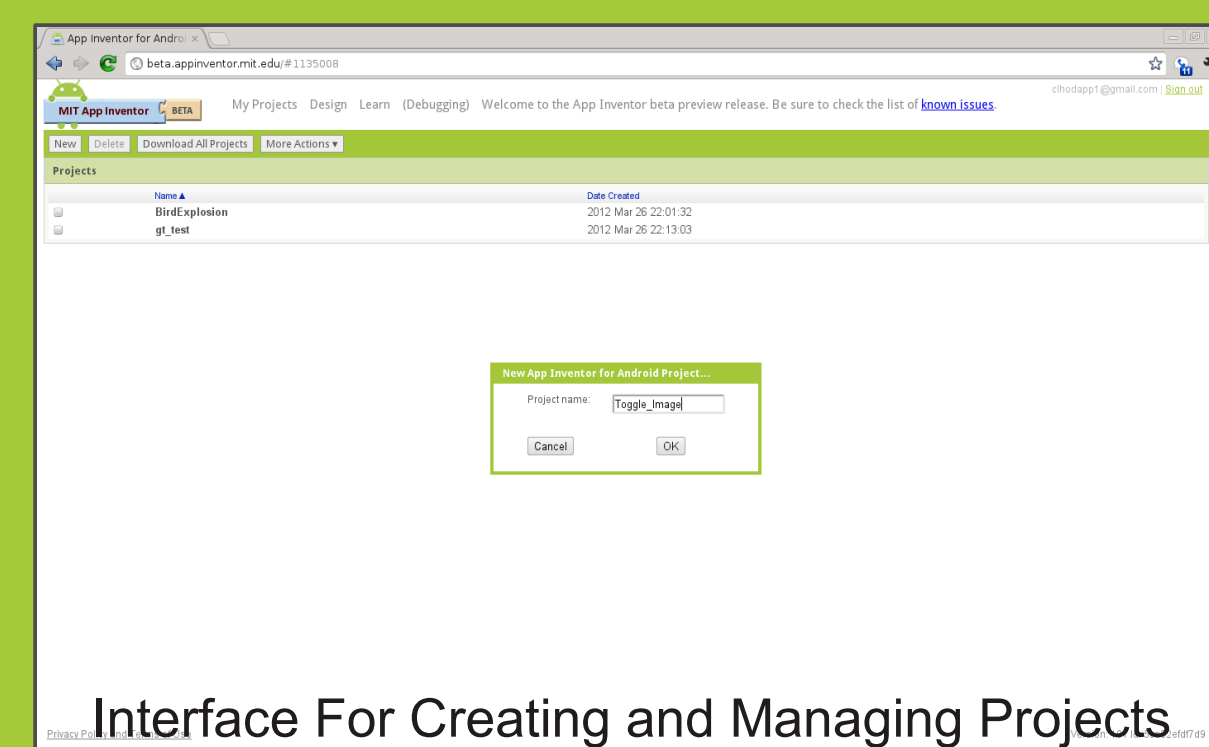
- Built-In
- My Blocks
- Advanced
- Definition
- Text
- Lists
- Math
- Logic
- Control
- Colors

# An Automated System for Converting App Inventor Apps to Java

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## Designing An App



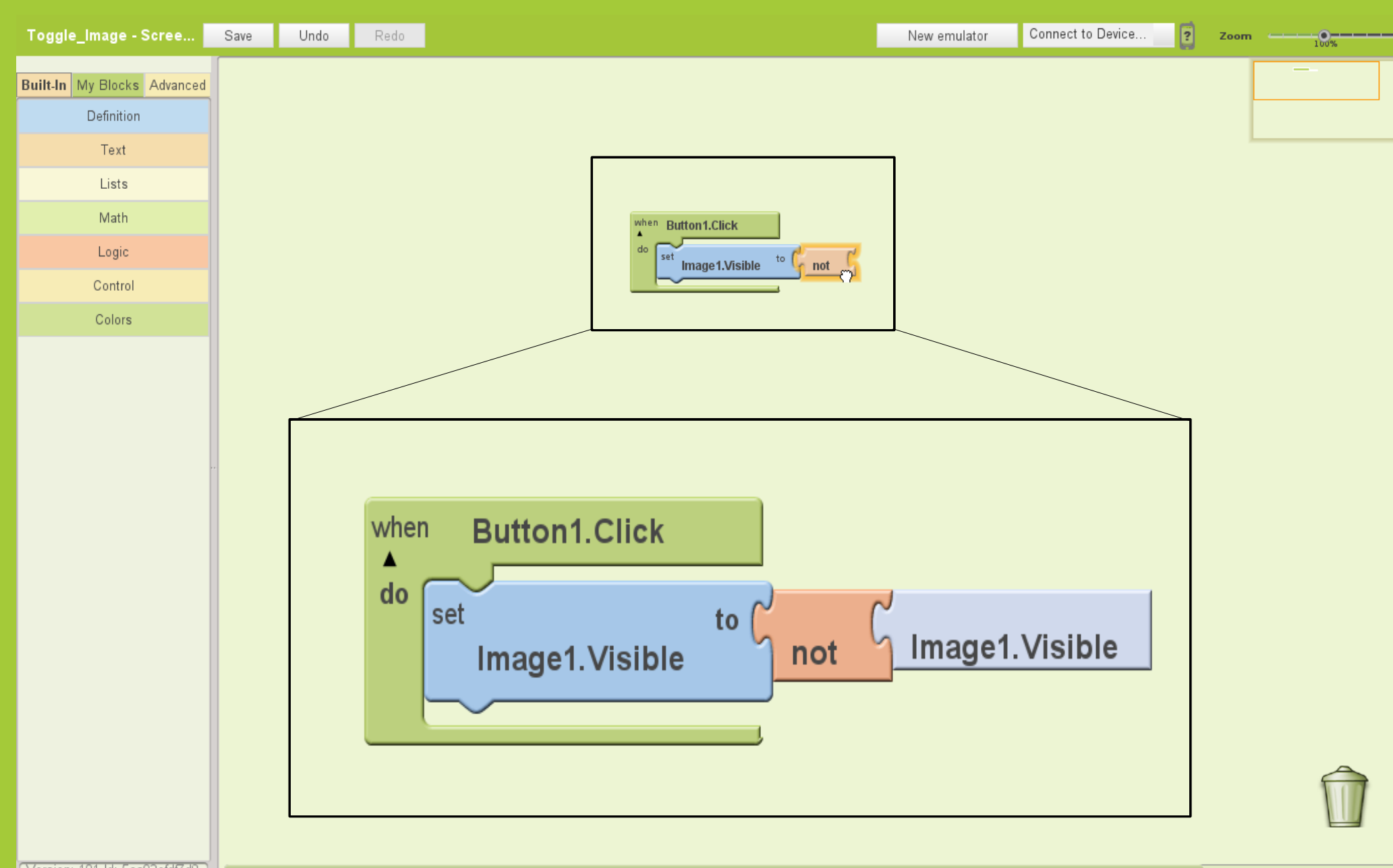
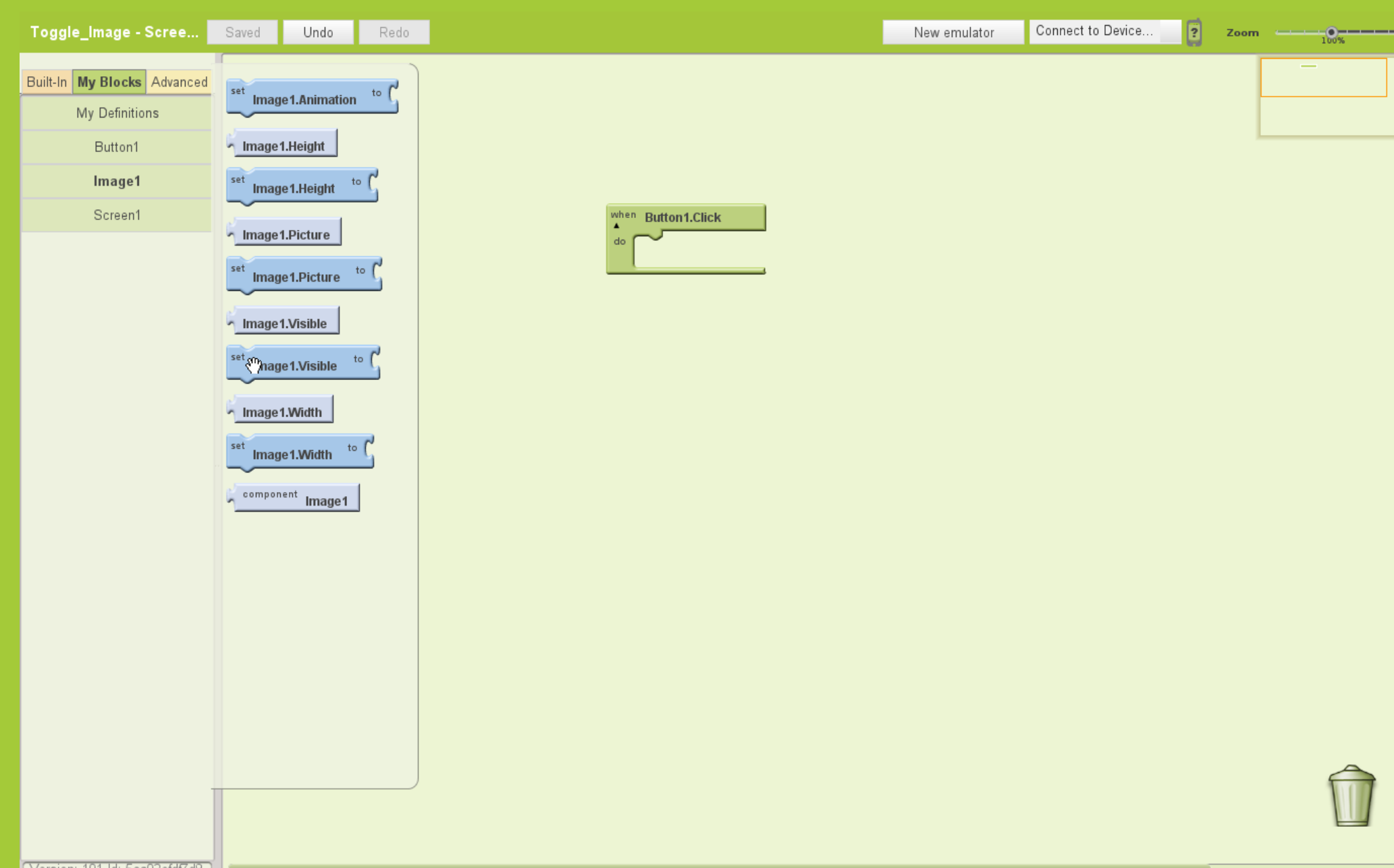
## MIT App Inventor

"App Inventor for Android is a programming tool that makes it easy ... to create mobile applications for the Android phone" [1]. The App Inventor project was started as a research project by Google, the principle commercial backer of the open-source Android platform, in 2010 [2]. It is now being managed by the MIT Center for Mobile Learning [3].

App Inventor has successfully been deployed in K-12, as well as college courses, in order to subtly introduce the core concepts of programming to students who would otherwise be unlikely to be introduced to these concepts.

There is potential to use the App Inventor as a motivation for learning Java, such that students can see the mapping from the familiar App Inventor program to its equivalent in Java. This poster introduces the App Inventor Java Translator, which can convert an App Inventor project to an Eclipse Java project.

## Using The Block Editor



## Screen1.scm

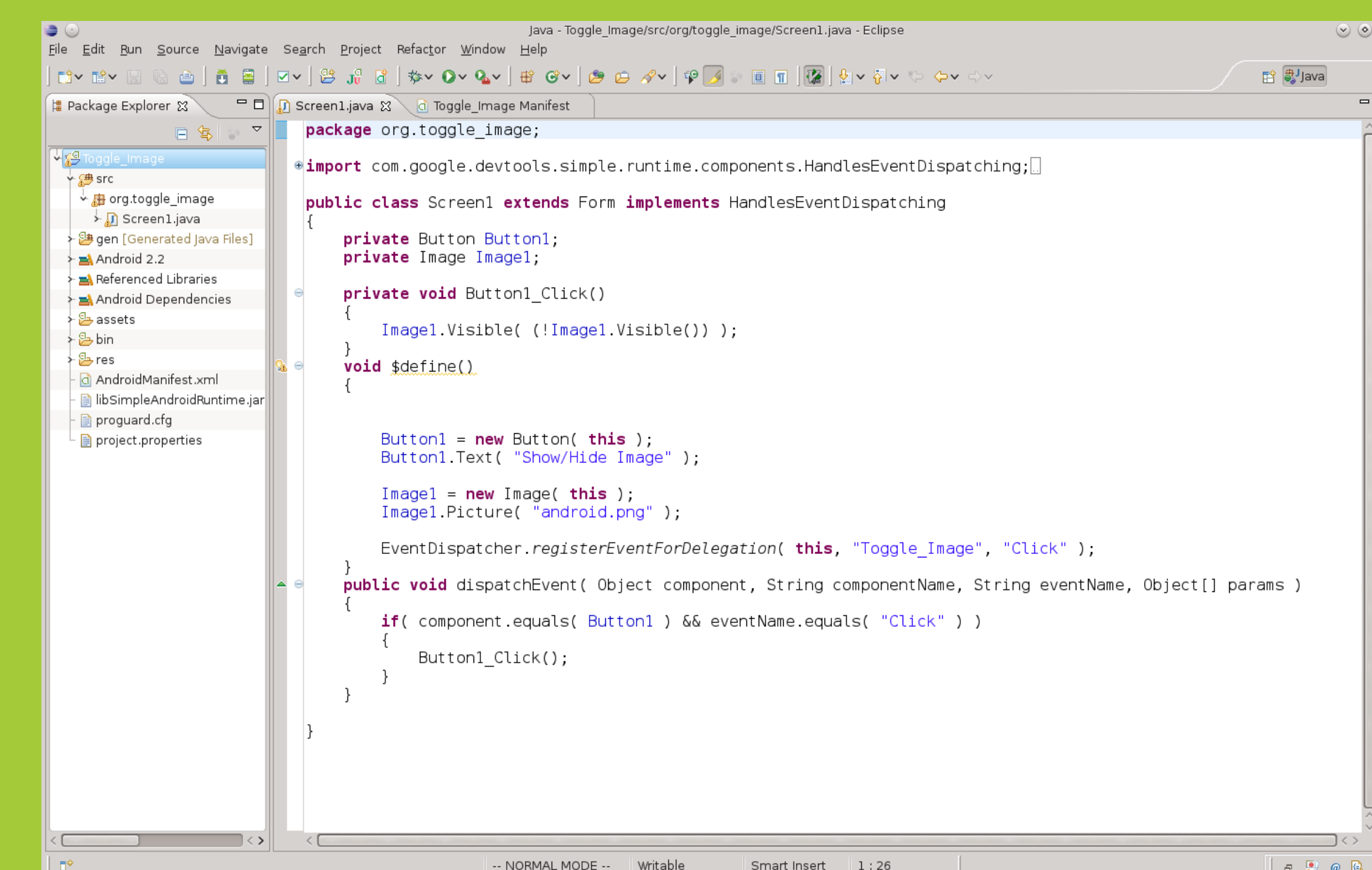
```
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  "YaVersion": "53",
  "Source": "Form",
  "Properties": {
    "$Name": "Screen1",
    "$Type": "Form",
    "$Version": "6",
    "Uuid": "0",
    "Title": "Screen1",
    "$Components": [
      {
        "$Name": "Button1",
        "$Type": "Button",
        "$Version": "3",
        "Uuid": "1413290220",
        "Text": "Show\\Hide Image"
      },
      {
        "$Name": "Image1",
        "$Type": "Image",
        "$Version": "1",
        "Uuid": ".327453379",
        "Picture": "android.png"
      }
    ]
  }
}
```

App Inventor gives the user the ability to download the "source" of their apps in a zip archive. It is from the contents of this zip that we are able to create a Java version of the App Inventor app. This panel contains examples of the two most important types of files: .scm files, which contain information needed to display on-screen components, and .blk files, are generated by the block editor. The .blk file shown has been simplified greatly to improve readability. Real .blk files are much more verbose.

## Screen1.blk (Simplified)

```
<Page>
  <Block genus-name="componentGetter" id="557">
    <Label>
      Image1.Visible
    </Label>
  </Block>
  <BlockConnector con-block-id="555" />
  <Block genus-name="logical-not" id="555">
    <Label>
      not
    </Label>
  </Block>
  <BlockConnector con-block-id="553" />
  <BlockConnector con-block-id="557" />
  </Block>
  <Block genus-name="componentSetter" id="553">
    <Label>
      Image1.Visible
    </Label>
  </Block>
  <BeforeBlockId>
    549
  </BeforeBlockId>
  <Sockets>
    <BlockConnector con-block-id="555" />
  </Sockets>
  <Block genus-name="Button-Click" id="549">
    <Label>
      Button1.Click
    </Label>
  </Block>
  <Sockets>
    <BlockConnector con-block-id="553" />
  </Sockets>
</Page>
```

## Generated Eclipse Project



References:  
[1] <http://appinventoredu.mit.edu/welcome-to-app-inventor-edu>  
[2] <http://googleblog.blogspot.com/2010/07/app-inventor-for-android.html>  
[3] <http://www.appinventor.mit.edu/>