

Rowan Academy

of

Mobile Programming

RAMP

Mole Mash Game



# Mole Mash Game Description

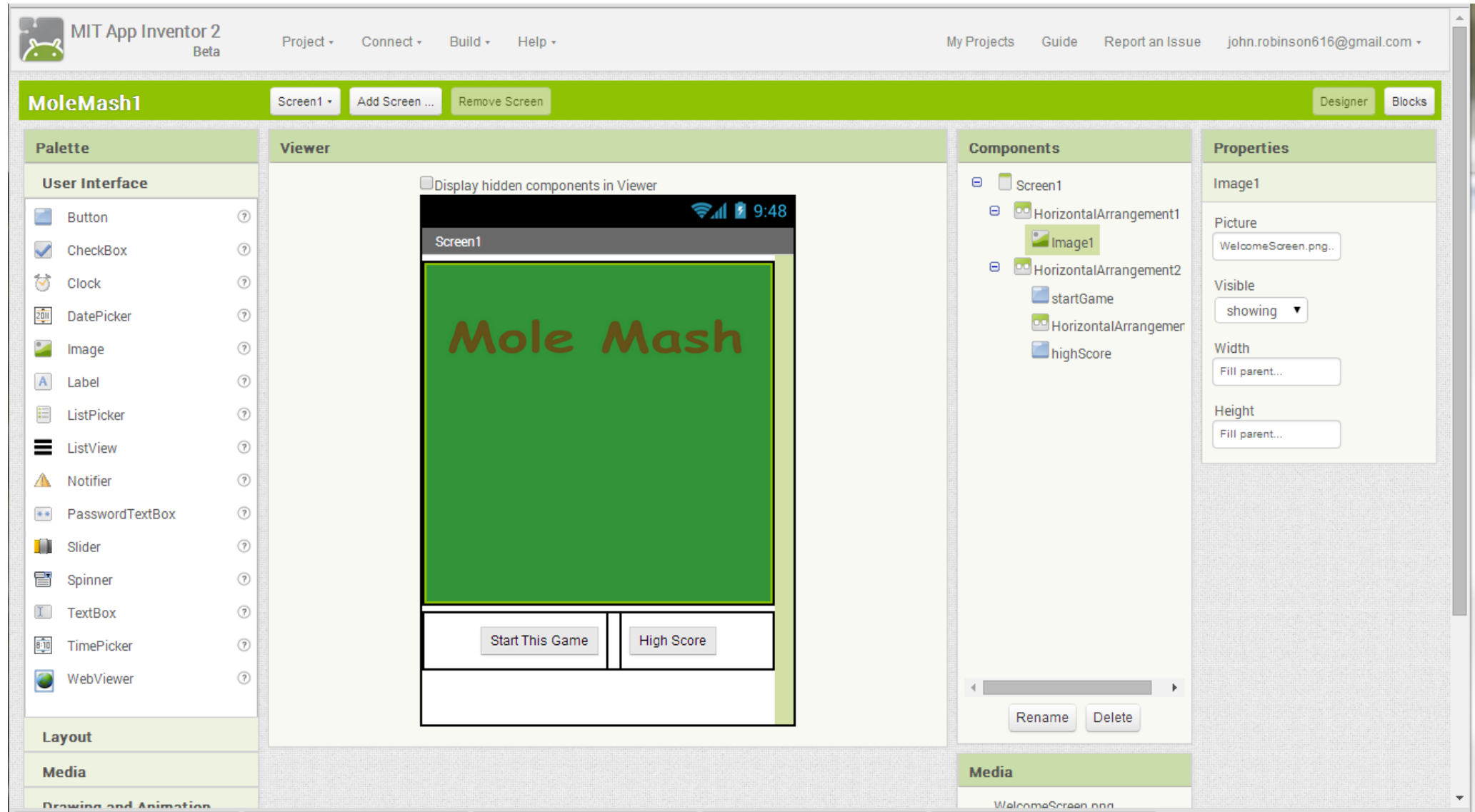
In our version of whack a mole, you will have thirty seconds to try and get the highest score you can. If your total score after the thirty seconds is high enough, you will be able to collect bonus points by shaking your device! Final Scores are then displayed on another we will call the ScoreScreen. On the ScoreScreen page, the high score is displayed along with the score from the previous game.

# Android & Computer Science Concepts Covered in Mole Mash Game

This Android App will include the following Computer Science concepts and Android principles:

- The Android accelerometer sensor
- Android event handling
- How conditional and control statements are used
- Data structures and Abstractions
- Parameter passing and Data Storage
- High level languages translated into low level languages.

# Screen 1



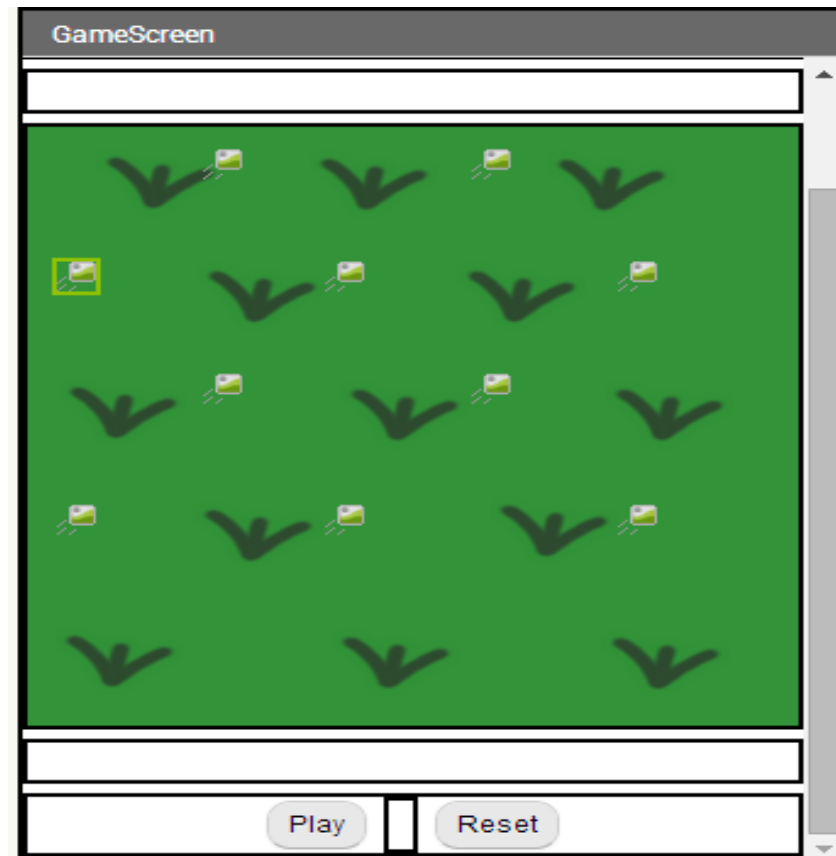
# Game Screen top

The screenshot displays the top section of a game screen in a development environment, organized into four main panels:

- Palette:** Contains categories for User Interface, Layout, Media, Drawing and Animation, Sensors, Social, and Storage. The User Interface category is expanded, listing components like Button, CheckBox, Clock, DatePicker, Image, Label, ListPicker, ListView, Notifier, PasswordTextBox, Slider, Spinner, TextBox, TimePicker, and WebView.
- Viewer:** Shows a preview of the game screen. At the top, there's a status bar with a Wi-Fi icon, a battery icon, and the time 9:48. Below this, the title "GameScreen" is displayed. The main area features a score display "Score: 0" and a timer display "Timer: 30 s". The background is a green field with a grid of black arrows pointing downwards. A checkbox labeled "Display hidden components in Viewer" is located above the preview.
- Components:** Lists the components used in the game screen. The hierarchy is: GameScreen (root) -> HorizontalArranger -> HorizontalArranger -> ScoreTextLabel (selected). Other components include ScoreTextValue, HorizontalArranger, TimerTextLabel, TextTimerValue, HorizontalArranger, TimerSecLabel, BonusNotifier, Canvas1, Hole3, Hole4, and Hole5. Buttons for "Rename" and "Delete" are at the bottom.
- Properties:** Shows the properties for the selected "ScoreTextLabel" component. Properties include BackgroundColor (None), FontBold (checkbox), FontItalic (checkbox), FontSize (25), FontTypeface (default), Text (Score:), TextAlignment (left), TextColor (Black), Visible (showing), Width (Automatic...), and Height (Automatic...). A "Media" section at the bottom lists assets: WelcomeScreen.png, gamemole.png, grass.png, highscore.jpg, hole.png, and a "Load File" button.

Below the Viewer panel, there is a section for "Non-visible components" with icons for Buzzer, GameTimer, MoleClock, BonusTimer, BonusShake, and TinyDB1.

# Game Screen bottom



# Score Screen

MIT App Inventor 2 Beta

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**MoleMash1** ScoreScreen ▾ Add Screen ... Remove Screen Designer Blocks

**Palette**

**User Interface**

- Button
- CheckBox
- Clock
- DatePicker
- Image
- Label
- ListPicker
- ListView
- Notifier
- PasswordTextBox
- Slider
- Spinner
- TextBox
- TimePicker
- WebView

**Layout**

**Media**

**Drawing and Animation**

**Viewer**

☐ Display hidden components in Viewer

ScoreScreen

High Score

0

Your Score

0

Return Home

**Non-visible components**

HighScoreDB TinyDB1

**Components**

- ScoreScreen
  - VerticalArrangement1
    - HorizontalArrangement
      - Label1
    - HorizontalArrangement
      - HighScore
    - HorizontalArrangement
      - Label2
    - HorizontalArrangement
      - GameScore
    - HorizontalArrangement
      - Button1
  - HighScoreDB
  - TinyDB1

**Properties**

**Label1**

BackgroundColor  
☐ None

FontBold  
☐

FontItalic  
☐

FontSize  
45

FontTypeface  
default ▾

Text  
High Score

TextAlignment  
left ▾

TextColor  
Black

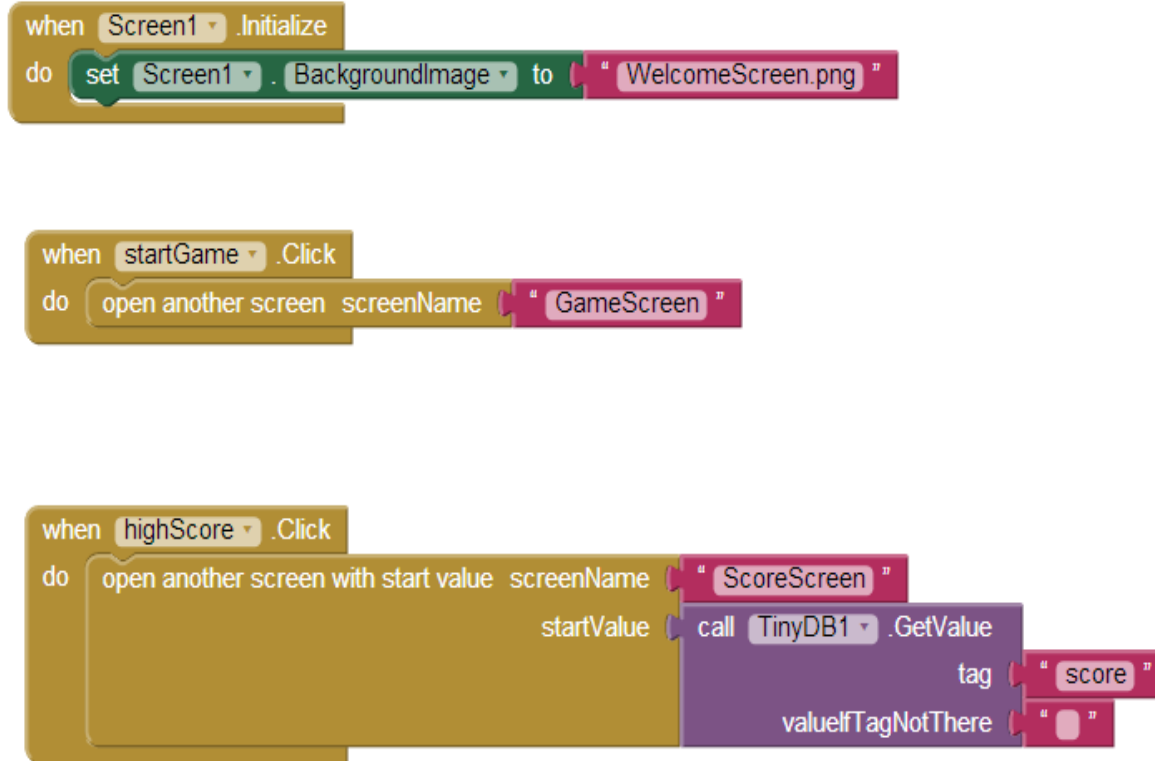
Visible  
showing ▾

Width  
Automatic...

**Media**

WelcomeScreen.png

# Screen 1 Logic



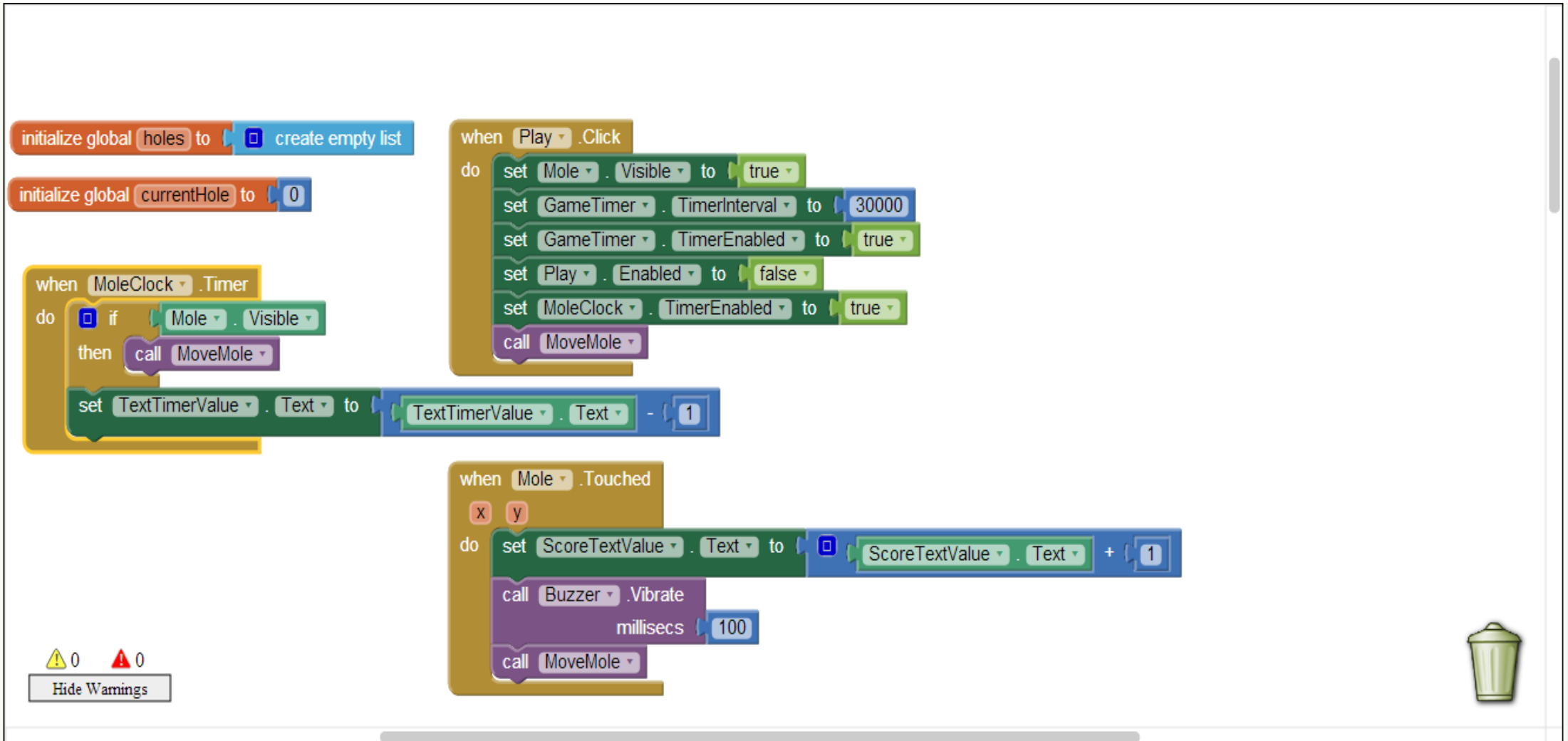
⚠ 1 🚫 0

Show Warnings





# Game Screen Logic



The image displays a Scratch script for a game screen, organized into three main event-driven blocks. The first block, triggered by the 'when green flag clicked' event, initializes global variables: 'holes' is set to an empty list, and 'currentHole' is set to 0. The second block, triggered by the 'MoleClock' timer, contains an 'if' statement that checks if the 'Mole' is visible; if true, it calls the 'MoveMole' function and then decrements the 'TextTimerValue' by 1. The third block, triggered by the 'Play' button click, sets 'Mole' to visible, configures a 'GameTimer' with a 30000ms interval and enables it, disables the 'Play' button, and enables the 'MoleClock' timer, before calling 'MoveMole'. A fourth block, triggered by the 'Mole' being touched, increments the 'ScoreTextValue' by 1, vibrates the buzzer for 100 milliseconds, and calls 'MoveMole'. The interface includes a 'Hide Warnings' button in the bottom left and a trash can icon in the bottom right.

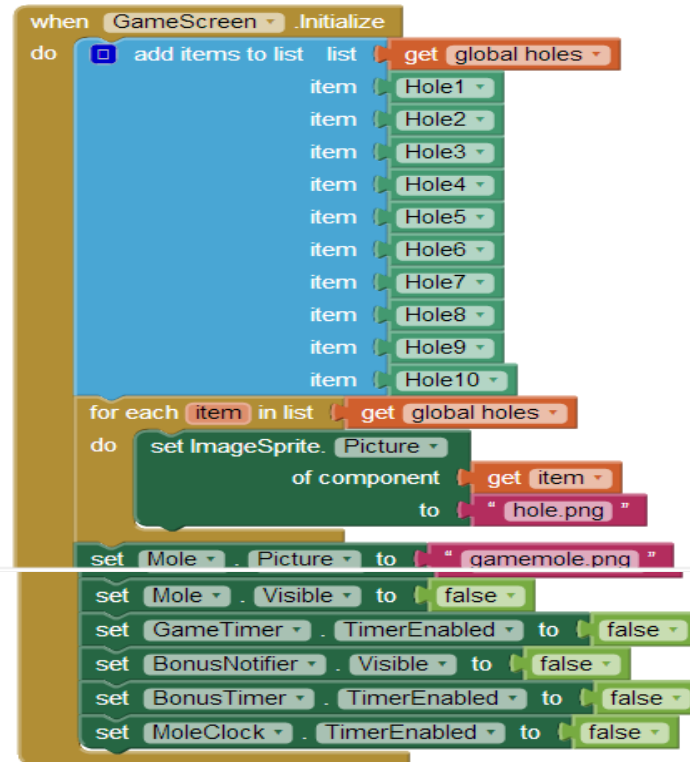
```
initialize global holes to create empty list
initialize global currentHole to 0

when MoleClock . Timer
do
  if Mole . Visible
  then
    call MoveMole
  set TextTimerValue . Text to TextTimerValue . Text - 1

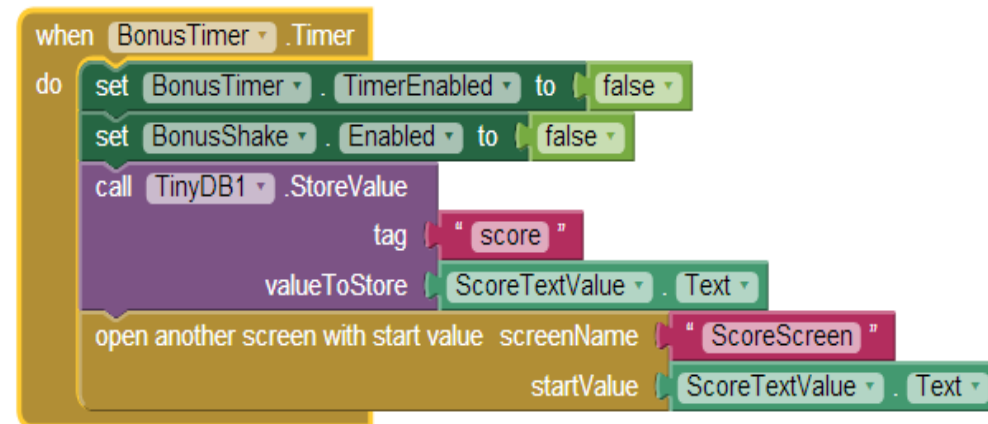
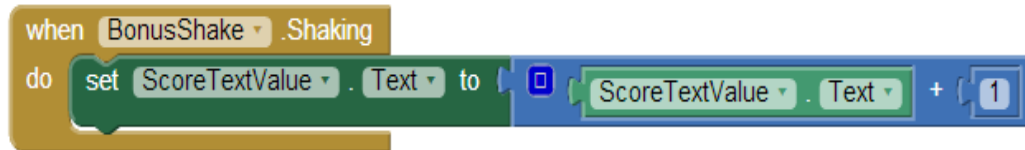
when Play . Click
do
  set Mole . Visible to true
  set GameTimer . TimerInterval to 30000
  set GameTimer . TimerEnabled to true
  set Play . Enabled to false
  set MoleClock . TimerEnabled to true
  call MoveMole

when Mole . Touched
do
  set ScoreTextValue . Text to ScoreTextValue . Text + 1
  call Buzzer . Vibrate
  milliseconds 100
  call MoveMole
```

# Game Screen Logic



# Game Screen Logic

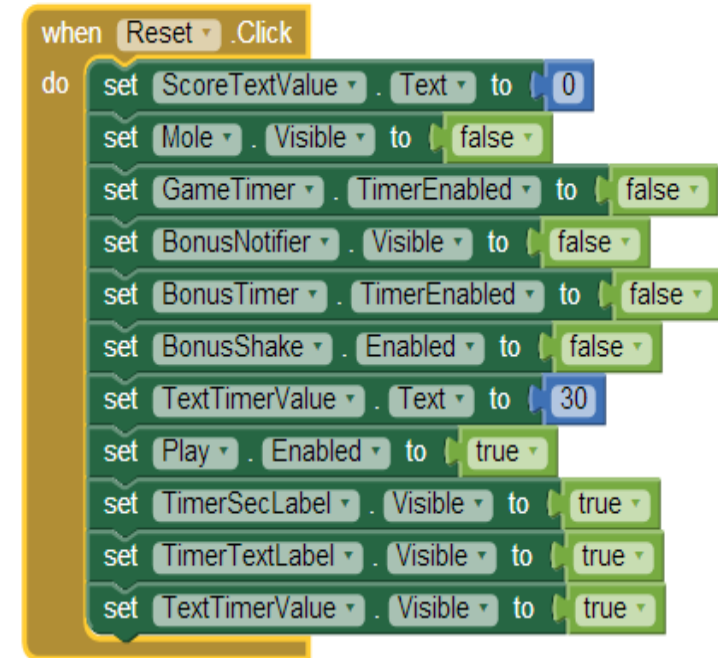
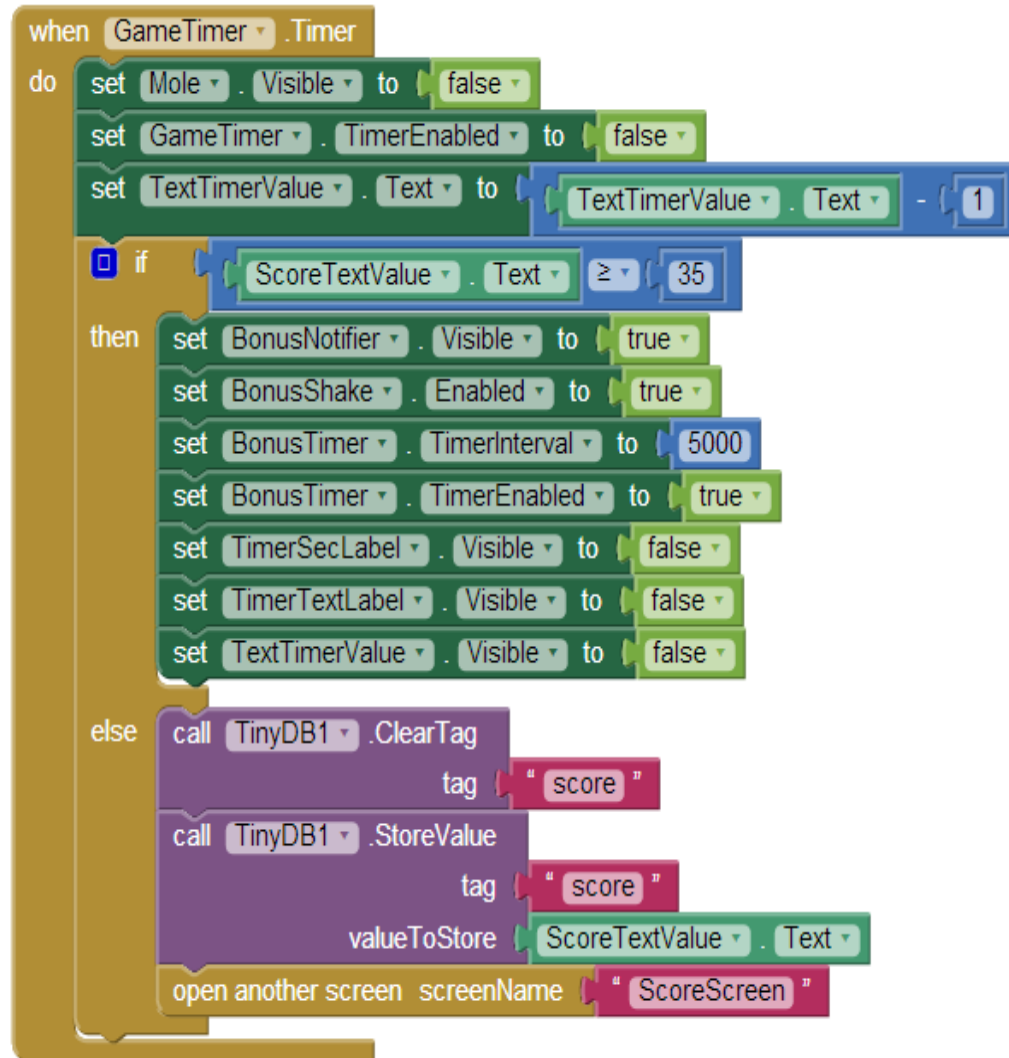


0 0

Hide Warnings



# Game Screen Logic

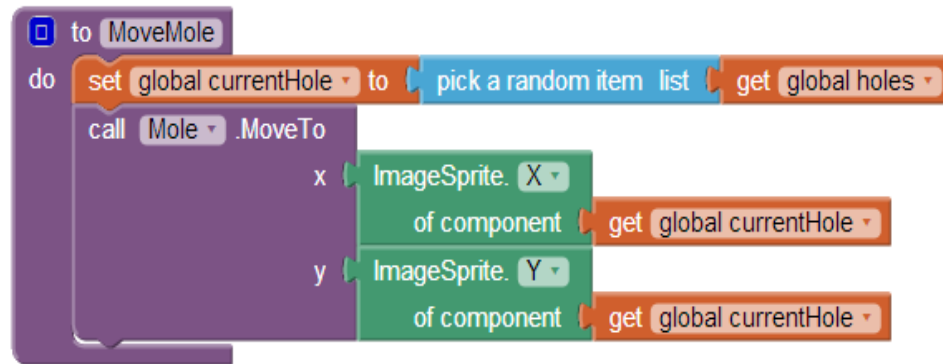


0 0

Hide Warnings



# Game Screen Logic

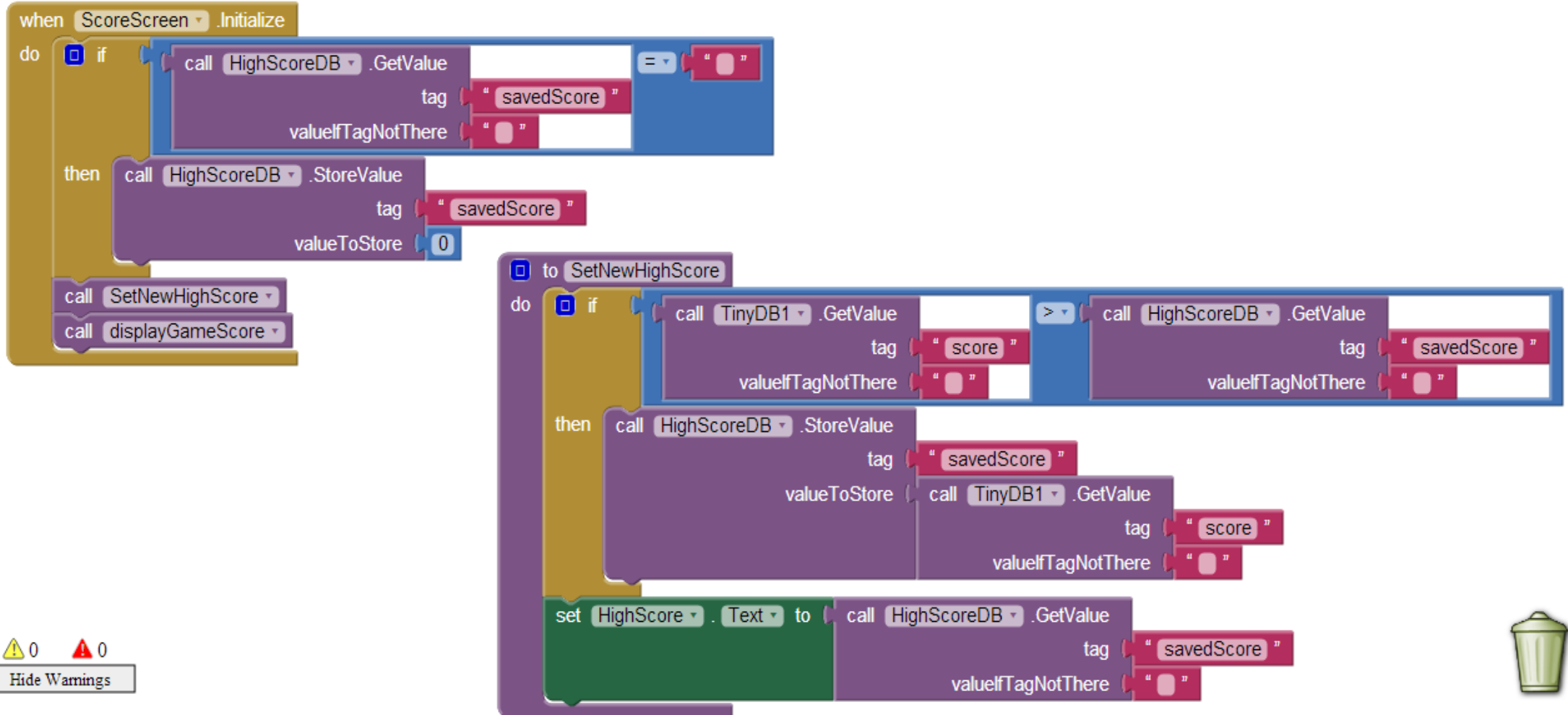


0 0

Hide Warnings



# Score Screen Logic



# Score Screen Logic

