

APP INVENTOR MAIN IDEAS – REVIEW #1

1. Identify and Explain Purpose

Procedure Name (Event Handler Procedure)

highlighted → all event handlers

component → Screen1.Initialize

Event → Screen1.Initialize

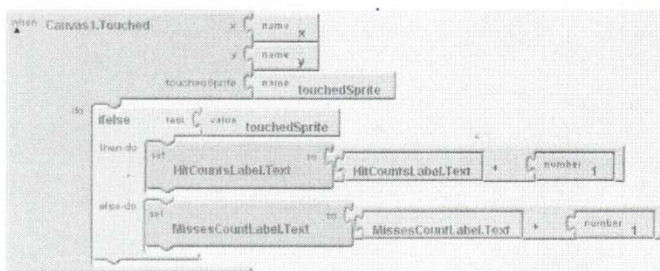
Procedure Name (not an event handler) → MoveMole

component → MissesCountLabel.Text

property → MissesCountLabel.Text

- List all the **procedure names** in the blocks shown at the left.
Screen1.Initialize, Clock1.Timer, ResetButton.Click, Canvas1.Touched, **MoveMole** → not an event handler
- List all the **component names** in the blocks shown at the left.
Screen1, Clock1, ResetButton, HitCountsLabel, MissesCountLabel
- List all the **event names** in the blocks shown at the left.
Initialize, Timer, Click
- List all the **property names** in the blocks shown at the left.
Text
- Explain the purpose of "Screen1.Initialize."
It executes instructions as soon as the screen initializes. (Moves mole to a random location.)
- Explain the purpose of "Clock1.Timer."
It executes instructions every time Clock1 fires the Timer event.
- Explain the purpose of "call MoveMole."
This instruction causes the MoveMole procedure to be executed. The MoveMole procedure moves the mole picture to a random location on the canvas.
- Explain the purpose of "ResetButton.Click."
This procedure is executed whenever the "Click" event takes place on "ResetButton." It resets both hits and misses to zero.
- Explain the purpose of "set HitCountsLabel.Text to 0."
This sets the "Text" property of HitCountsLabel to zero. When this instruction is executed, the value beside the "Hits" label is reset to zero.

2. Explain Purpose



- What are "x," "y" and "touchedSprite?" What is their purpose? These are parameters of the Canvas1.Touched procedure. These special variables provide the procedure with information that it may require.
- Explain the purpose of the "if else" block.
This block selects only ONE of the two instructions within it, depending on the value of "touchedSprite"
- What is the purpose of "set HitCountsLabel.Text to HitCountsLabel.Text + 1?"
This increases the "hits" count by 1

3. Explain Concept

In the MoleMash game, the mole picture moves about the canvas in a random fashion. Explain how this is accomplished.

See next page.

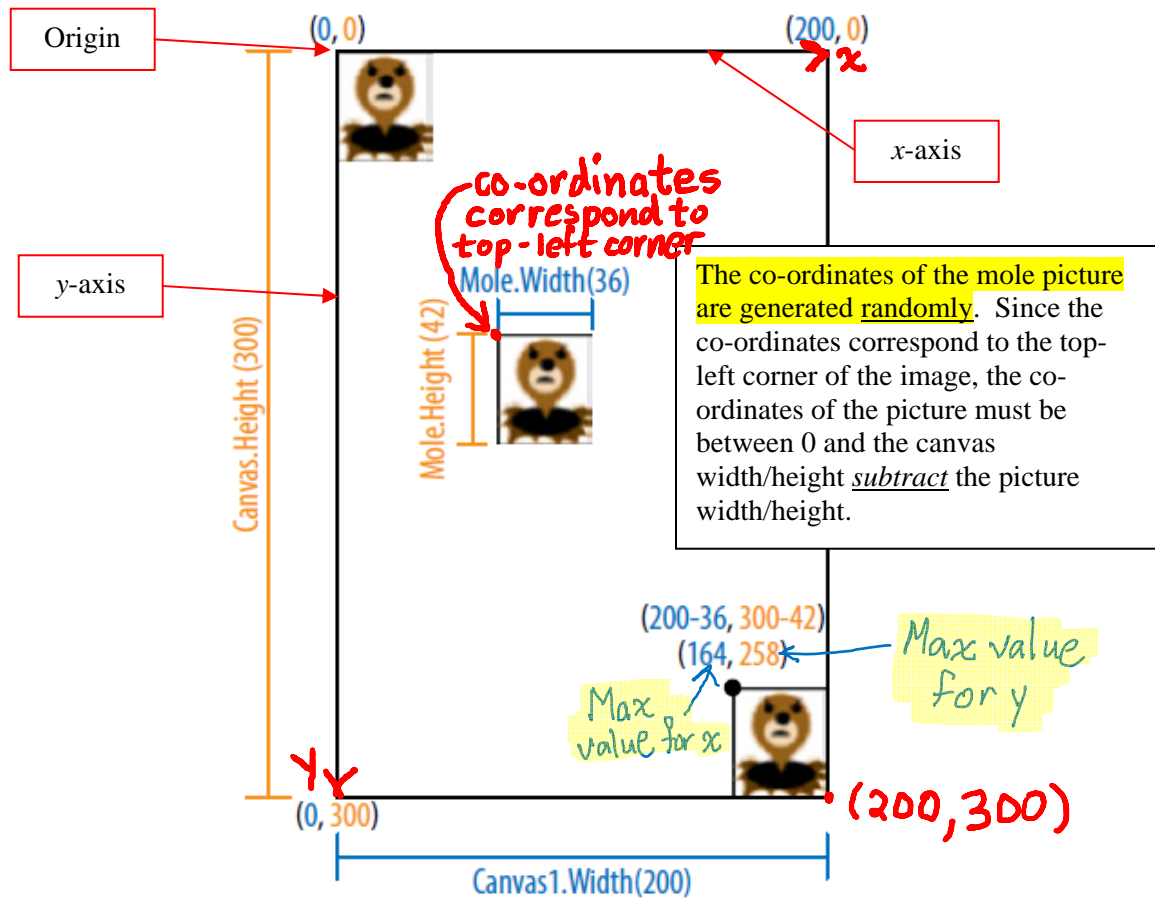


Figure 3-4. Positions of the mole on the screen, with coordinate, height, and width information; x coordinates and widths are shown in blue, while y coordinates and heights are shown in orange

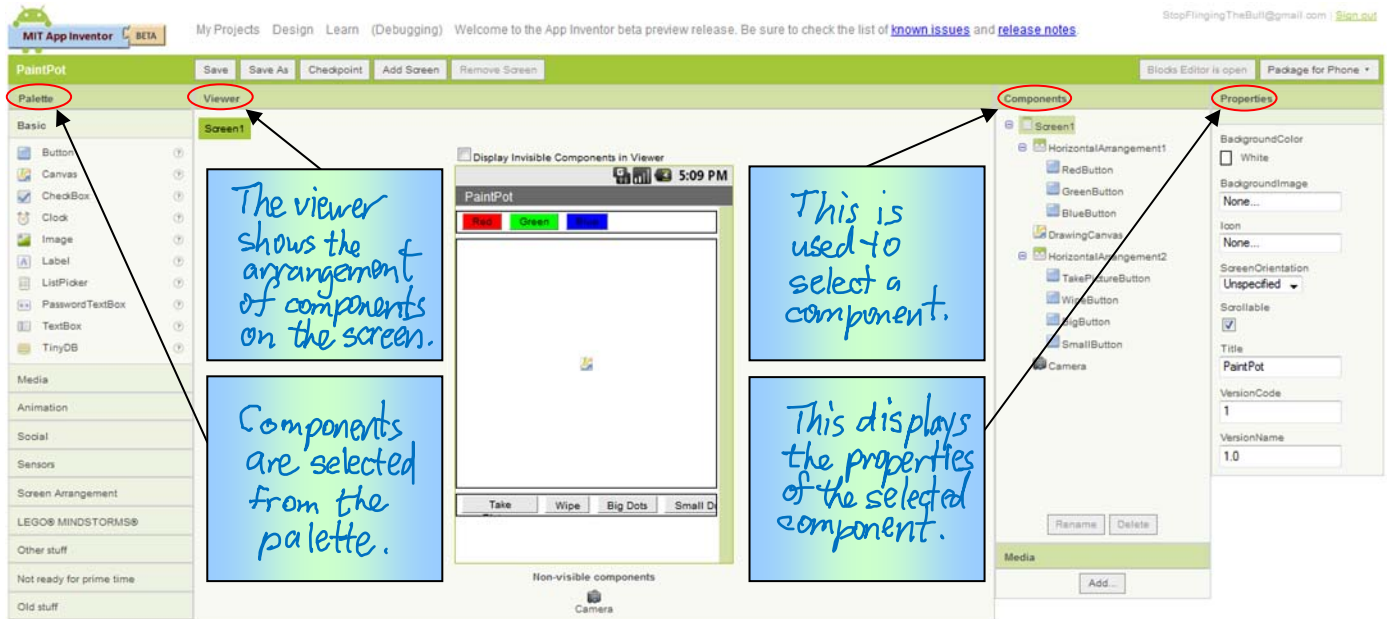
APP INVENTOR MAIN IDEAS – REVIEW #2

Explain each of the following:

1. Component	Any object that can be selected from the "Palette." Components have properties and methods.
2. Property	A characteristic of a component. For example, "Text" is one of the properties of the "Button" component.
3. Method	An action associated with a component. For example, the "Canvas" component has a method called "DrawLine".
4. Event	A user action, or action generated by software, that can trigger the execution of instructions.
5. Procedure	A group of zero or more statements (instructions) that is given a name. Event handlers and methods are both procedures.
6. Event Handler (This is a type of procedure)	A procedure that is automatically executed when a specific event occurs.
7. Click Event	The event that occurs when a component is clicked.
8. Initialize Event	The event that occurs when a "Screen" component is first loaded.
9. Timer Event	An event that is "fired" at regular intervals by a "clock" component.
10. Text Property	The property that stores the text displayed on certain components (e.g. buttons).
11. Variable	A name that is used to represent a value that is stored in a computer's memory. Variables are used to save information.
12. Call	To call a procedure means to execute it by using its name.
13. Parameter/Argument	A variable that is used to pass information to a procedure.
14. ifelse block	A block that chooses one set of statements over another based on whether a given condition is true or false.
15. Image	A component that is used to display images.
16. Sprite	A component that is used to display images that can move about on a canvas.
17. random integer	A whole number that is selected at random.
18. Canvas	A component that is used for drawing and animation.
19. Width Property	The property that stores the width of a component.
20. Height Property	The property that stores the height of a component.
21. Co-ordinate System	A system that uses one or more numbers called co-ordinates to uniquely determine the position of a point.

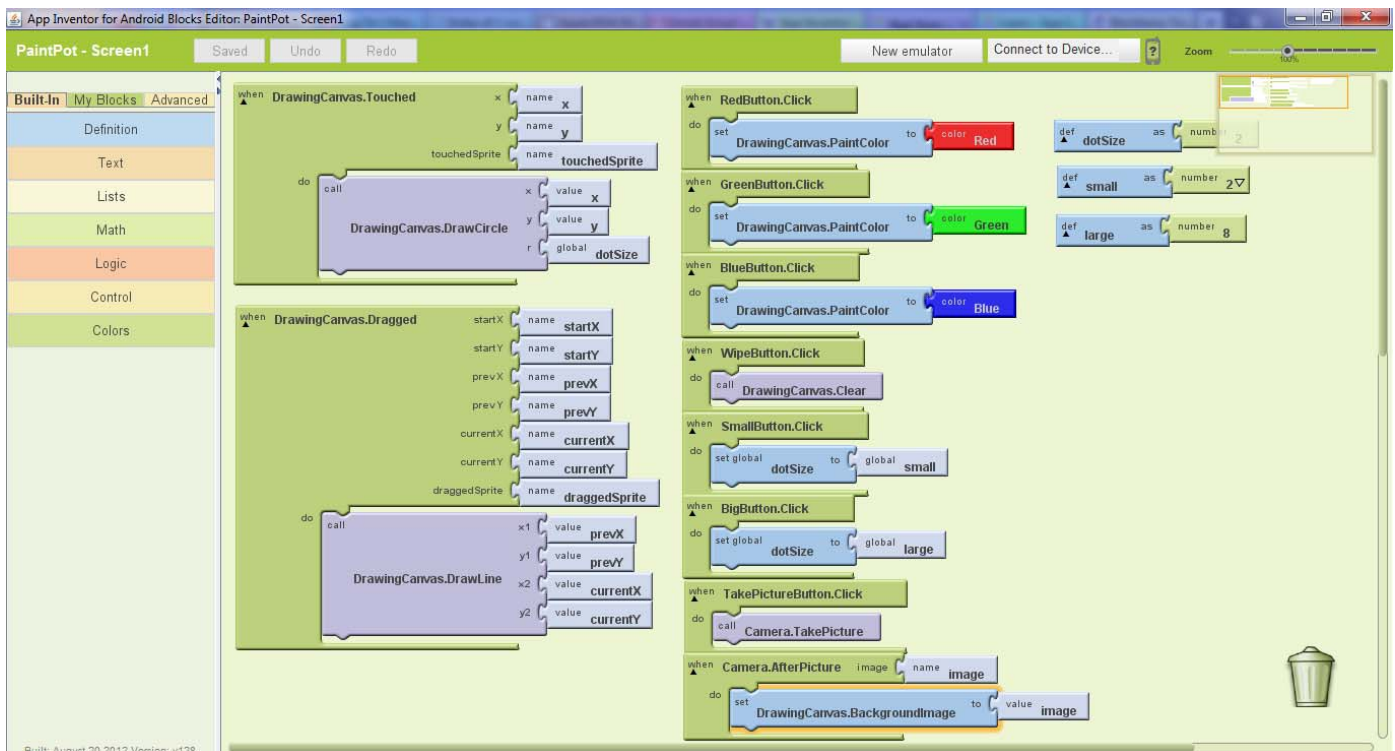
APP INVENTOR MAIN IDEAS – REVIEW #3

1. The purpose of the Design Page shown below is to design the USER INTERFACE for the app.

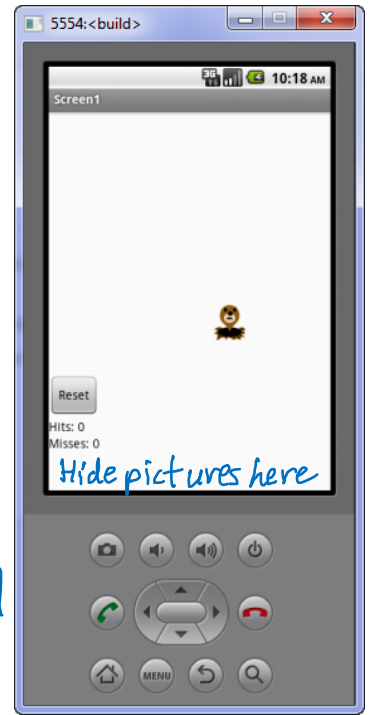


Use the provided text boxes to state the purpose of each of the four main parts of the Design Page.

2. The purpose of the Blocks Editor Java program shown below is to specify the BEHAVIOUR of the app (i.e. the LOGIC of the app)



3. The purpose of the emulator window shown at the right is to test an app when a compatible cellphone is not available. This allows apps to be developed independent of a physical cellphone.



4. Give a step-by-step explanation of how each of the following could be accomplished:

(a) In the MoleMash app, the mole picture changes briefly when the mole is hit.

- Store the mole picture and the "hit" picture in hidden image components
- when the mole is hit, change the "Picture" property of the mole sprite to match that of the hidden "hit" image
- After a certain time elapses, change the picture again but this time to match that of the hidden mole image

(b) In the PaintPot app, straight lines can be drawn as well as curves.

When the "Dragged" event occurs on the canvas

- erase the line drawn from (startX, startY) to (prevX, prevY) by redrawing it in the same colour as the canvas background
- draw a line from (startX, startY) to (currentX, currentY) in the selected drawing colour

(c) In the MoleMash app, a "bonus image" is occasionally displayed for a brief time. The player receives bonus points for tapping the bonus image.

- a "Clock" component's "TimerInterval" property is set to a random value (preferably a large #)
- When the clock fires the "Timer" event the bonus picture is displayed for a brief time (random time) and clock's "TimerInterval" property is updated (for next bonus image appearance)
- If the user taps the bonus image, bonus points are given

(d) In the MoleMash app, a "penalty image" moves about the canvas in proximity to the mole image. If the player taps the penalty image instead of the mole, the player loses points.

The penalty image's co-ordinates should be based on the mole image's co-ordinates. Let "moleX" and "moleY" be variables that represent the moles co-ordinates. Then the penalty image's co-ordinates should be

$$\left. \begin{array}{l} \text{moleX} + \text{small random value} \\ \text{moleY} + \text{small random value} \end{array} \right\} \begin{array}{l} \text{the random values} \\ \text{should be allowed} \\ \text{to be negative as} \\ \text{well as positive} \end{array}$$