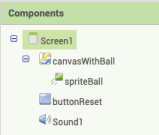
Hack BI App Inventor 2 Workshop: The Cheatsheet

horizontal line

**Required Components**

1. Label: Tracks the amount of clicks on the ball

2. Canvas Component: Used as a place for the ball and bomb to move in 3. Sound Component (Invisible): Used to make a bouncing sound when the ball is clicked 4. Button Component: Used to start game

**Designing the App - Component Designer**

**Creating the Hits Labels**

5. Drag in a label component and rename it “lblHitsText”

a. Set the text property of “lblHitsText” to “Hits: “

6. Drag in a horizontal alignment component and drag “lblHitsText” into it 7. Drag in another label component and rename it “lblHitsNumber”

b. Delete the words in the “lblHitsNumber” text property so that it is blank 8. Drag in “lblHitsNumber” into the horizontal alignment component, placing it to the right of “lblHitsText”

**Button Component**

9. Drag in a button component into the viewer

10. Rename button to “buttonStartGame”

11. Set the button component’s text property to “Start Game”

**Canvas Component with Image Sprite**

12. Drag in the canvas component into the Viewer

13. Place anImage Sprite component into the Canvas component

c. Rename Image Sprite to “spriteBomb”

14. Set spriteBomb picture property to the image name

**Sound Component**

15. Drag in the sound component from the Media drawer

16. Set the sound’s source to “bouncesound.mp3”

**Programming the App - Blocks Editor**

**Declaring the “hits” variable**

17. Drag in the “initialize global variable” block

18. Rename the variable “hits”

19. Initialize “hits” to 0

**Creating the Start Game Button**

20. Open the“buttonStartGame” drawer and drag in the event listener that says “when buttonStartGame.click”

21. Drag in the block saying “set Clock1.TimerEnabled to” into the “when buttonStartGame.click” event listener

22. In the slot for “set Clock1.TimerEnable to” drag in the “true” block from the Logic drawer and place it into the slot

**Creating the moveBomb procedure**

23. Open the procedures drawer and drag in the block saying “to (procedure) do” 

24. Rename “procedure” to “moveBomb”

25. Drag in the “call spriteBomb.moveTo” procedure block into the “moveBomb” procedure 26. In the x slot drag in a “random integer from \_\_ to \_\_” block from the math drawer 27. In the “from” part of the random integer block, drag in the number 0

28. Drag in a subtraction block into the “to” part of the random integer block 29. In the first part of the subtraction block, drag in the “spriteBomb.width” block 30. In the second part of the subtraction block, drag in the “canvas.width” block 31. In the y slot, use another random integer block and drag in the same blocks but use canvas.height and spriteBomb.height instead of the width blocks

32. Next, drag in the “call moveBomb” procedure block into the “when Clock1.Timer do” event listener

**Creating ballMove procedure**

33. Drag in a “to procedure do” block

34. Rename “procedure” to “moveBall”

35. Drag in a “call Ball1.MoveTo” block into the “moveBall” procedure

36. In the “x” slot, drag in a “random integer from \_\_ to \_\_” block

37. For the from slot, drag in a 0

38. For the “to” slot, drag in a subtraction block

d. In the first part of the subtraction block, enter “ball1.Width”

e. In the second part, enter “canvas1.Width”

39. For the “y” slot, repeat steps 4 - 6 except with “canvas1.height” and “ball1.height” instead of width blocks

40. Drag in the “call moveBall” procedure block into the “Clock1.Timer” event listener **Creating a ball.Touched Event listener**

41. Drag in a “when ball1.Touched” event listener from the “ball1” drawer 42. Drag in a “set variable to” block and change “variable” to “hits”

f. Set “hits” to “hits + 1” using the math addition block in the open slot of the “set variable to” block

43. Drag in a “set hitsNumber.Text to” block and set the text to the “get hits” variable 44.

**Creating the Sound Component**

45. Drag in these 2 blocks from the “Sound1” drawer

g. The “set Sound1.Source to” block

h. The “Sound1.Source” block

46. Connect the “set Sound1.Source” and “Sound1.Source” blocks together and put them in the “when spriteBall.Touched” event listener

**Final App**

**Main Vocabulary (in Component Designer)**

47. Component Designer:

• The Component Designer is the place where you can see the Palette, the Viewer, the Components, and the Properties of those components

• The Component Designer is the place where you design or create the look of your app 48. Component:

• A component is like an ingredient in a cooking recipe

• An app is basically a bunch of components that are combined together • The Components are in the Palette

• Examples of components are: Buttons, Labels, TextBoxes

49. Palette:

• The Palette is on the far left side of the Component Designer

• The Palette is the place where you get all the components that you can use to create your app

50. Viewer:

• The Viewer is the place that you drag your components into

• The Viewer shows you what your app will look like on a phone

51. Components List:

• The Components List is to the right of the Viewer

• The Components List is a list of all the components you are using

52. Properties:

• The Properties are to the far right side

• Properties are different parts of a component

• Examples of Properties: TextColor, FontSize, Shape

53. Media:

• Media components are images, songs, and videos that you can put into your app • on the Component Designer screen, Media is a section inside the Palette labeled “Media”

**Main Vocabulary (in Blocks Editor)**

54. Blocks:

• Blocks are the commands or instructions that you will use to make your app do things • The Blocks are located to the far left side

55. Control (Event Listeners):

• Event listeners are the yellow colored blocks

• The ” Control”drawer is located on the left side of the screen in the “Blocks” section

• When you click on the “Control” drawer, you will find blocks with the word “when”. These blocks are called Event Listeners. Event Listeners are the blocks that let you decide when a certain action or event occurs.

i. Example: when Button1.Click do:

56. Variables:

• Variables are the Orange colored blocks

• Variables are objects that have not been given a value yet

• Example: get x, set y to 0

57. Procedures:

• Procedures are the purple colored blocks that have the words “do” or “call” • Procedures are the types of blocks that allow you to make actions happen. • Procedure blocks have the words “do” or “call”

• Example:

• to Turn Light On

▪ Do: Move Toward Switch

▪ Do: Flip switch up

58. Parameters and Arguments

• Parameters are the names of variables waiting to receive value

• Arguments are the values that are sent to parameters

59. Global and Local variables

• Global variables are variables that are accessible by all event listeners and procedures

• Local variables are variables that are only accessible by one event listener or procedure