

PLAYING WITH BLOCKS

PAINTING APP

FEATURES OF THE APP



- Include an image as a drawing background.
- You can dip your finger into a virtual paint pot to choose the colour.
- You can drag your finger along the screen to draw a line or poke the screen to make dots.
- Use the button at the bottom to wipe the screen clean.



PAINTING APP

CONCEPTS INTRODUCED



The concepts to be learnt while doing this app are:

- Canvas component for drawing
- Touch / Drag events
- Event handlers



PAINING APP



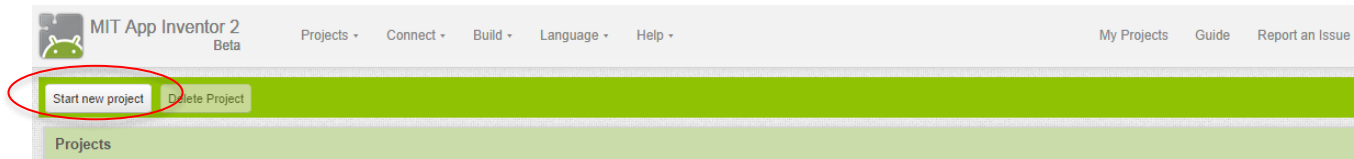
PAINTING APP

INITIAL STEPS



1. Go to “<http://ai2.appinventor.mit.edu/>”
2. Sign-in with your Gmail account. If you do not have a Gmail account, you can create a free account at “<https://www.google.com.sg/>” .

3. Click ‘Start new project’



4. Enter Application Name for project : **PaintingApp**
5. You’ll be presented with the Component Designer



PAINTING APP

NAMES IN THE COMPONENT DESIGNER



MIT App Inventor 2 Beta

Projects Connect Build Language Help

My Projects Guide Report an Issue

PaintingApp Screen1 Add Screen Remove Screen Designer Blocks

Application Name

Component Name

Title Name

Palette

User Interface

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

Layout

Media

Drawing and Animation

Sensors

Social

Storage


Connectivity

LEGO MINDSTORMS

Viewer

Display hidden components in Viewer

MyPicture



Red Blue Green Clear

Components

- Screen1
- HorizontalArrangement1
- btn_red
- btn_blue
- btn_green
- btn_clear

Media

- Koala.jpg
- Upload File

Properties

Screen1

AboutScreen

AlignHorizontal

Left

AlignVertical

Top

BackgroundColor

Light Gray

BackgroundImage

None

CloseScreenAnimation

Default

Icon

None

OpenScreenAnimation

Default

ScreenOrientation

Unspecified

Scrollable

Title

MyPicture

VersionCode



PAINTING APP

NAMES IN THE COMPONENT DESIGNER



-
- There are three names in component designer for an application as shown in the previous screen.
 - **Application Name**
The project's name that you have chosen.
 - **Component Name**
The component name "Screen1" is under the component column.
This name cannot be renamed under current version of App Inventor.
 - **Title Name**
The title name is under the properties column which can be renamed.



BUILDING PAINTING APP

COMPONENT DESIGNER



- ❑ 6 components are required
- ❑ Drag the components specified in the table below from the palette column

Components	Quantity	Description
Canvas	1	The drawing surface. You can change the Background Image.
Horizontal Arrangement	1	It is used to line up the components horizontally. For example, to arrange the 4 buttons in this application.
Buttons	4	Buttons of Green, Red and Blue change painting color to green or red or blue. The Clear button will reset the image to the initial stage.



BUILDING PAINTING APP

COMPONENT DESIGNER



Step1: Drag the components specified in the table below as mentioned in the previous slide

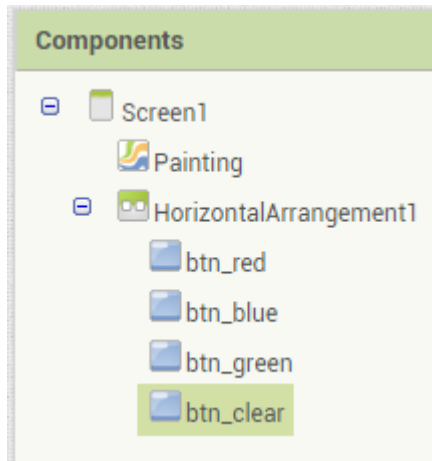


BUILDING PAINTING APP

COMPONENT DESIGNER



Your component viewer must appear as shown



BUILDING PAINTING APP

BLOCK EDITOR



Step2: Create the following functions.

- When any of the colour button is clicked, change the painting colour to the colour being chosen.
- When user clicks anywhere within the image, create dot on the image with the current colour.
- When user drags his mouse along the image, draw a line with the current colour.
- When user selects the Clear button, reset the image back to its original look.
- Open the block editor and follow the steps shown in the video.



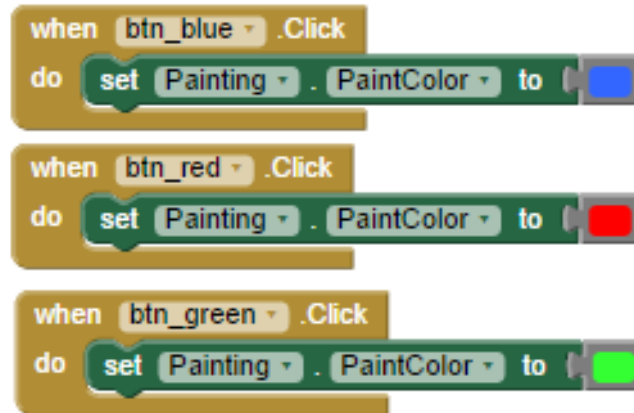
BUILDING PAINTING APP

BLOCK EDITOR

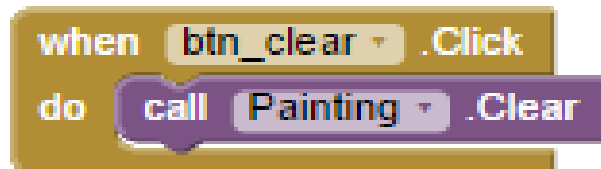


Button click event

- When any of the colour button is clicked, change the painting colour to the colour being chosen.



- When user selects the Clear button, reset the image back to its original look.



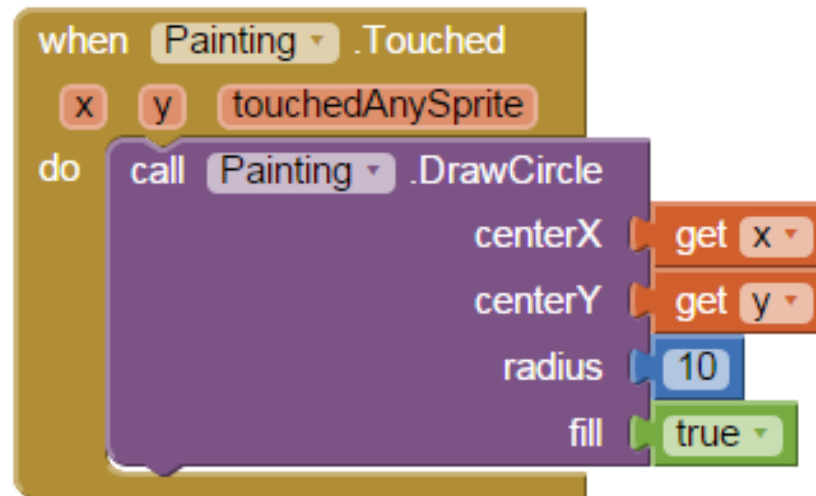
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BLOCK EDITOR



Touch event handler

- When user clicks anywhere within the image, create dot on the image with the current colour.



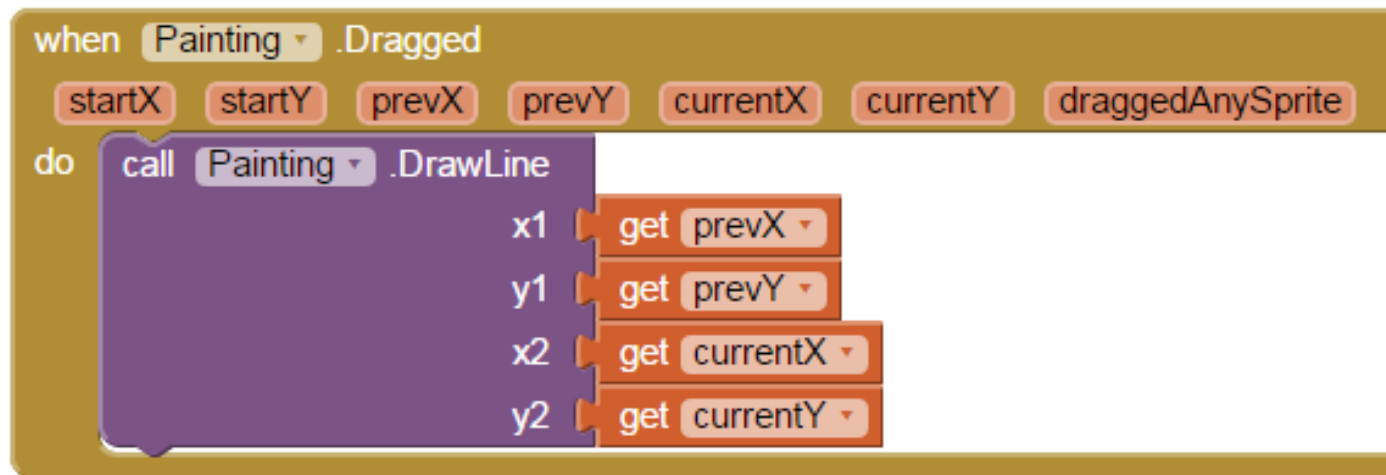
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BLOCK EDITOR



Drag Event Handler

- When user drags his mouse along the image, draw a line with the current colour.



BUILDING PAINTING APP

BLOCK EDITOR



Drag Event Handler

These are three pairs of x and y coordinates that is shown:

- The position of your mouse/finger back where the drag started.
- The current position of your mouse/finger.
 - `x2` and `y2` should be `currentX` and `currentY`
- The immediately previous position of your mouse/finger.
 - `x1` and `y1` should be `prevX` and `prevY` ;
- There's also a `DraggedSprite`, which is not covered here.



BUILDING PAINTING APP

BLOCK EDITOR



```
when btn_blue.Click
do set Painting.PaintColor to blue

when btn_red.Click
do set Painting.PaintColor to red

when btn_green.Click
do set Painting.PaintColor to green

when btn_clear.Click
do call Painting.Clear
```

```
when Painting.Touched
x y touchedAnySprite
do call Painting.DrawCircle
    centerX get x
    centerY get y
    radius 10
    fill true
```

```
when Painting.Dragged
startX startY prevX prevY currentX currentY draggedAnySprite
do call Painting.DrawLine
    x1 get prevX
    y1 get prevY
    x2 get currentX
    y2 get currentY
```



BUILDING PAINTING APP

TEST YOUR APP



Test your application



BUILDING PAINTING APP

YOUR CHALLENGE – ENHANCE THE APP



- Add a button for camera option to take a picture and display the image.
- Add two buttons to choose big or small dot.
- Add a music that play at start up.
- Add a button to play a specified music.

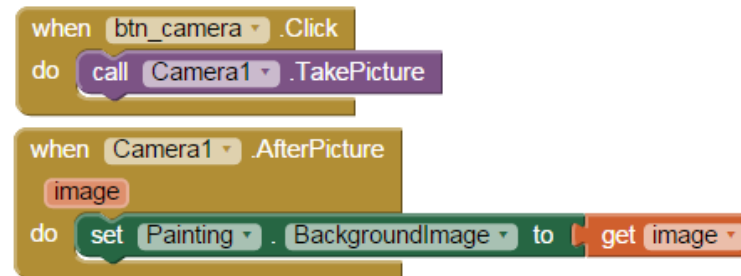


BUILDING PAINTING APP

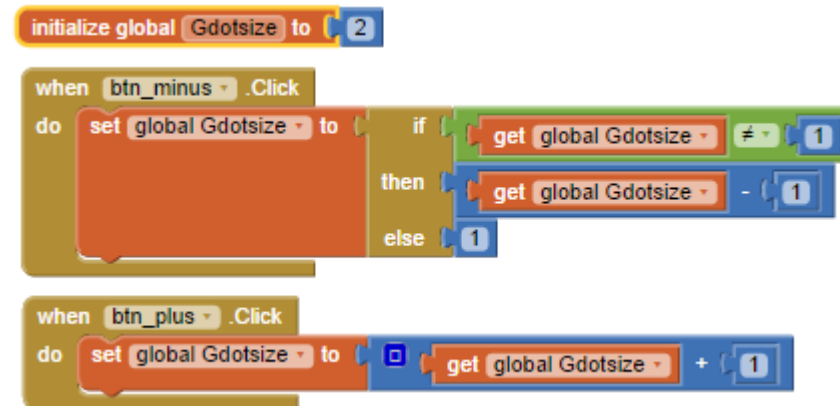
YOUR CHALLENGE – ENHANCE THE APP



- Add a button for camera option to take a picture and display the image.



- Add two buttons to choose big or small dot.

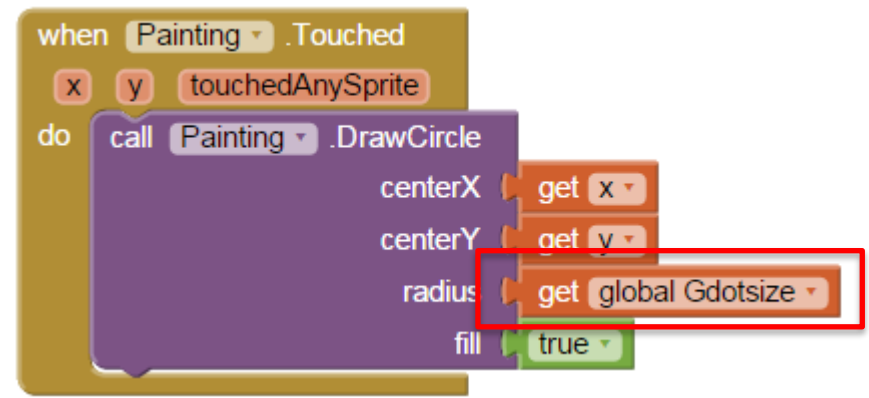


BUILDING PAINTING APP

YOUR CHALLENGE – ENHANCE THE APP



- Modify the circle radius so that it will be changed according to the Gdotsize.

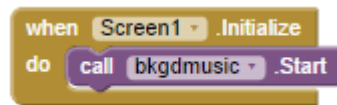


BUILDING PAINTING APP

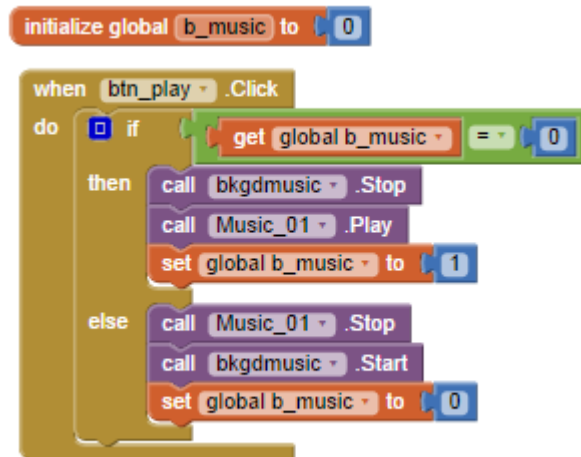
YOUR CHALLENGE – ENHANCE THE APP



- Add a music that play at start up.



- Add a button to play a specified music.





THANK YOU

SEE YOU AGAIN

