

MIT App Inventor: ImageBot & Intro to AI

ESC Club & App In Club

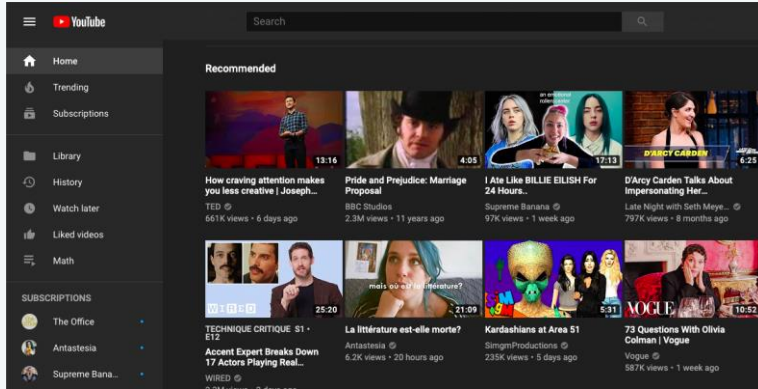


A



 Gemini

Examples of Artificial Intelligence (AI)



What is AI?



artificial



Made by Humans

Ability to Learn!

Things made by humans that have
the ability to learn

How Does it Work?

BEFORE:

```
var level = 0;
var Start = createSprite(200, 800);
Start.setAnimation(▼"Start");
Start.scale = 0.3;
function Draw() {
  background(▼"black");
  textSize(50);
  fill(▼"green");
  text("Robinhood", 88, 450);
  drawSprites();
  if (mousePressedOver(Start)) {
    level = 1;
  }
  if (level = 1) {
    var sprite = createSprite(200, 200);
    sprite.setAnimation(▼"1");
    var sprite2 = createSprite(60, 230);
    sprite2.setAnimation(▼"Sprite");
    sprite2.scale = 0.4;
    if (keyDown(▼"right")) {
      sprite2.x = sprite2.x + 2;
    }
  }
}
```



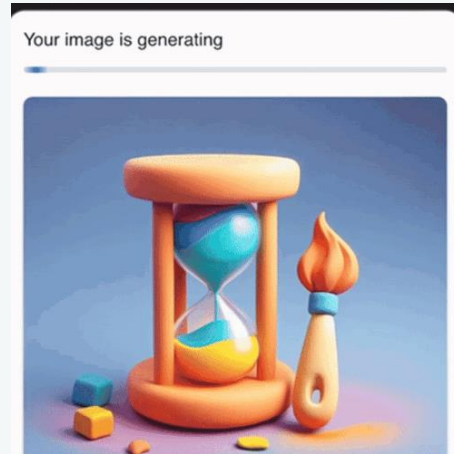
Now:



Why we use AI?



Without AI



With AI



Image Bot

The image features a minimalist design with a light blue background. The central focus is the text "Image Bot" in a bold, dark teal font. On the left and right sides, there are decorative elements consisting of thin teal lines that form a stepped, staircase-like pattern. Small teal circles of varying sizes are placed at the ends of these lines, adding a modern, digital aesthetic to the layout.

What We Need Today



Step 1: Open This Template

<https://gallery.appinventor.mit.edu/?galleryid=411c2fb4-1a19-4d77-abc8-73cd41c21733>

ImageGenerator_Template
June 25, 2024, 10:01 p.m. Likes: 0 ❤️


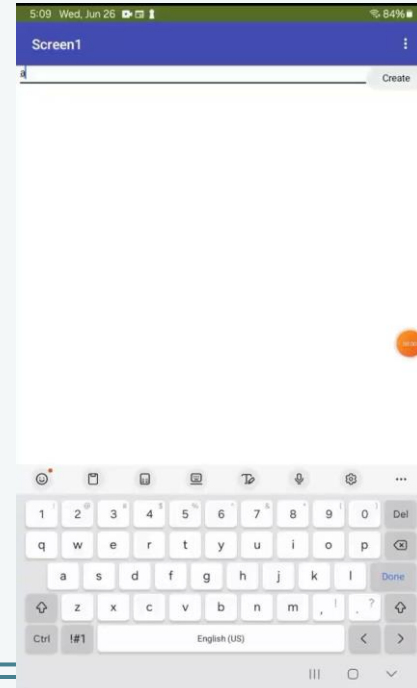


image generator template

[Load App Into MIT App Inventor](#)
[Update App Information](#)
[Remove App From Gallery](#)
[Add Project to Studio](#)

[Other projects by same author](#)
[Report Project](#)

Permanent link: <https://gallery.appinventor.mit.edu/?galleryid=0c287051-1dbc-4ad9-9bfd-6c75e645d787>



Step 2: Drag the ImageBot Component onto the screen

ImageGenerator_Template Screen1 Add Screen ... Remove Screen Project Properties Publish to Gallery Designer Blocks

Palette Viewer All Components Properties

Search Components...

User Interface

Layout

Media

Drawing and Animation

Maps

Charts

Data Science

Sensors

Social

Storage

Connectivity

LEGO® MINDSTORMS®

Experimental

ChatBot

FirebaseDB

ImageBot

Extension

Display hidden components in Viewer

Phone size (505,320)

Android 5+ Devices (Android Material)

Screen1

HorizontalArrangement1

Input

Create

HorizontalArrangement2

Canvas1

ImageBot1

Rename Delete

Media

Upload File ...

Screen1 (Screen)

Appearance

AboutScreen

AlignHorizontal

AlignVertical

BackgroundColor

BackgroundImage

BigDefaultText

CloseScreenAnimation

HighContrast

OpenScreenAnimation

ScreenOrientation

Scrollable

ShowStatusBar

Title

Step 3: Drag this block onto the workspace

ImageGenerator_Template_1

Screen ▾ Add Screen ... Remove Screen Project Properties Publish to Gallery

Designer Blocks

Blocks

- Built-in
 - Control
 - Logic
 - Math
 - Text
 - Lists
 - Dictionaries
 - Colors
 - Variables
 - Procedures
- Screen1
 - HorizontalArrangement1
 - Input
 - Create**
 - HorizontalArrangement2
 - Canvas1
- Any Component

Rename Delete

Media

Upload File ...

Viewer

when Create ▾ .Click
do

User tapped and released the

when Create ▾ .GotFocus
do

when Create ▾ .LongClick
do

when Create ▾ .LostFocus
do

when Create ▾ .TouchDown
do

when Create ▾ .TouchUp
do

Create ▾ . BackgroundColor ▾

set Create ▾ . BackgroundColor ▾ to

Create ▾ . Enabled ▾

set Create ▾ . Enabled ▾ to

when Create ▾ .Click
do

Step 4: Drag this block inside the previous block we placed

ImageGenerator_Template_1 Screen1 Add Screen ... Remove Screen Project Properties Publish to Gallery Designer Blocks

Blocks

- Built-in
 - Control
 - Logic
 - Math
 - Text
 - Lists
 - Dictionaries
 - Colors
 - Variables
 - Procedures
- Screen1
 - HorizontalArrangement1
 - Input
 - Create
 - HorizontalArrangement2
 - Canvas1
 - ImageBot1
- Any component

Viewer

```
when ImageBot1 .ErrorOccurred
  responseCode responseText
do

when ImageBot1 .ImageCreated
  fileName
do

when ImageBot1 .ImageEdited
  fileName
do

call ImageBot1 .CreateImage
  description

Create an image using the given description.
call ImageBot1 .EditImage
  source
  description

call ImageBot1 .EditImageWithMask
  imageSource
  maskSource
  prompt

set ImageBot1 .ApiKey to
```

when Create .Click
do call ImageBot1 .CreateImage
description

Step 5: Drag this block under the previous blocks

ImageGenerator_Template_1 Screen1 Add Screen ... Remove Screen Project Properties Publish to Gallery Designer

Blocks

- Built-in
 - Control
 - Logic
 - Math
 - Text
 - Lists
 - Dictionaries
 - Colors
 - Variables
 - Procedures
- Screen1
- HorizontalArrangement1
 - Input
 - Create
- HorizontalArrangement2
 - Canvas1
 - ImageBot1**
- Any component
 - name Delete

Upload File ...

Viewer

```
when ImageBot1 .ErrorOccurred
  responseCode responseText
do

when ImageBot1 .ImageCreated
  fileName
  The ImageCreated event will be run when the
  ImageBot successfully creates an image.
do

when ImageBot1 .ImageEdited
  fileName
do

call ImageBot1 .CreateImage
  description

call ImageBot1 .EditImage
  source
  description

call ImageBot1 .EditImageWithMask
  imageSource
  maskSource
  prompt

when Create .Click
do
  call ImageBot1 .CreateImage
  description

when ImageBot1 .ImageCreated
do
  fileName
```

Step 6: Attach this block to the previous block we just placed

ImageGenerator_Template

Screen1 ▾ Add Screen ... Remove Screen Project Properties Publish to Gallery

Designer Blocks

Blocks

- Built-in
 - Control
 - Logic
 - Math
 - Text
 - Lists
 - Dictionaries
 - Colors
 - Variables
 - Procedures
- Screen1
 - HorizontalArrangement1
 - Input**
 - HorizontalArrangement2
 - Canvas1
 - ImageBot1
 - Any component
 - Name Delete

Media

Upload File ...

Viewer

Input . MultiLine ▾

set Input . MultiLine to

Input . NumbersOnly ▾

set Input . NumbersOnly to

Input . ReadOnly ▾

set Input . ReadOnly to

Input . Text ▾

set Input . Text to

Returns the textbox contents.

Input . TextColor ▾

set Input . TextColor to

Input . Visible ▾

set Input . Visible to

Input . Width ▾

set Input . Width to

Show Warnings

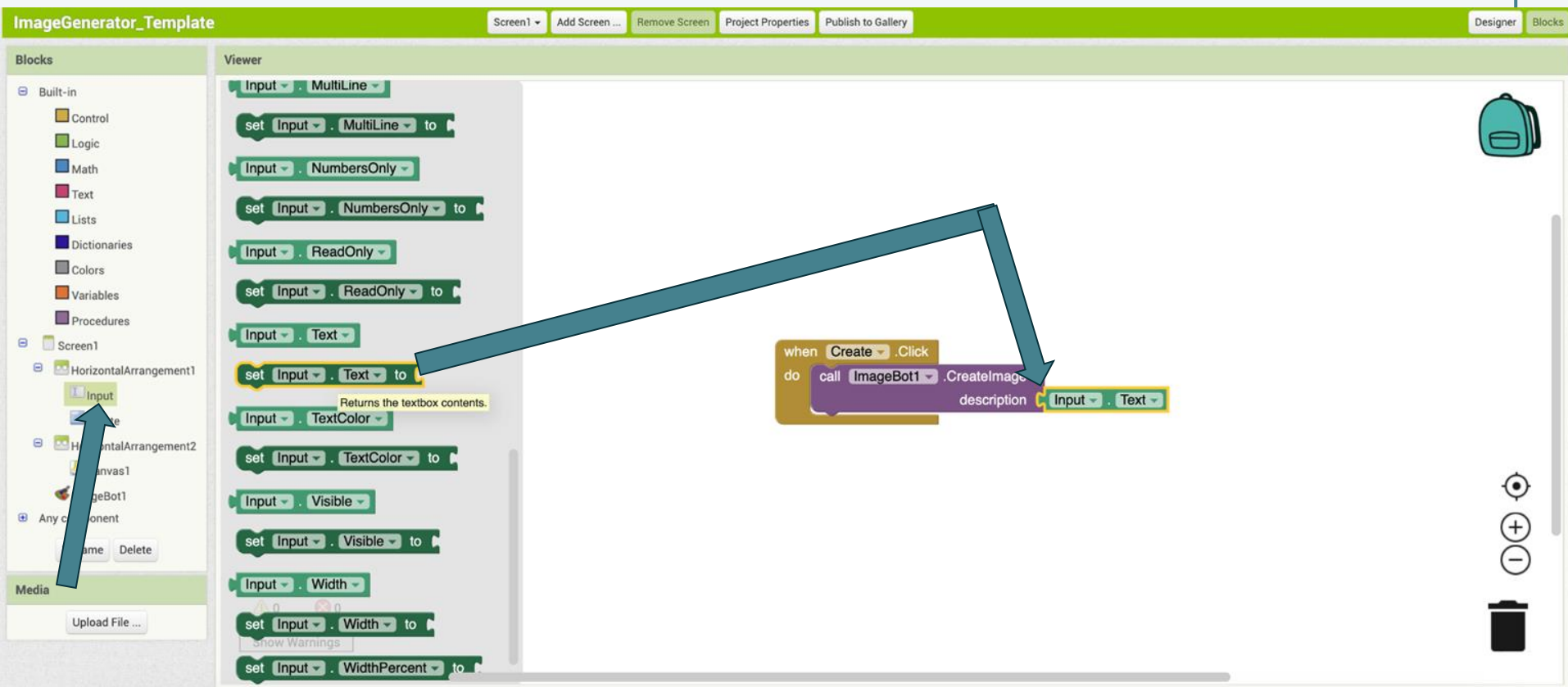
set Input . WidthPercent to

when Create . Click

do

call ImageBot1 . CreateImage

description Input . Text ▾



Step 7: Drag this block underneath our first block

Blocks

- Built-in
 - Control
 - Logic
 - Math
 - Text
 - Lists
 - Dictionaries
 - Colors
 - Variables
 - Procedures
- Screen1
 - HorizontalArrangement1
 - Input
 - Create
 - HorizontalArrangement2
 - Canvas1
 - ImageBot1
 - Any Component
 - Image
 - Delete
- Media
 - Upload File ...

Viewer

```
when ImageBot1 .ErrorOccurred
  responseCode responseText
do

when ImageBot1 .ImageCreated
  fileName
do

The ImageCreated event will be run when the
ImageBot successfully creates an image.
when ImageBot1 .ImageCreated
  fileName
do

call ImageBot1 .CreateImage
  description
do

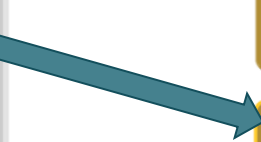
call ImageBot1 .EditImage
  source
  description
do

call ImageBot1 .EditImageWithMask
  imageSource
  maskSource
  prompt
do

Show Warnings
set ImageBot1 . ApiKey to
```

```
when Create .Click
do
  call ImageBot1 .CreateImage
  description
  Input . Text
```

when ImageBot1 .ImageCreated
fileName
do



Step 8: Drag this block inside the block we just placed

The image shows a visual programming environment with two main panes: 'Blocks' on the left and 'Viewer' on the right.

Blocks Pane:

- Control
- Logic
- Math
- Text
- Lists
- Dictionaries
- Colors
- Variables
- Procedures
- Screen1
- HorizontalArrangement1
 - Input
 - Create
- HorizontalArrangement2
 - Canvas1
- Any component
 - Reset
 - Delete
- Media
 - Upload File ...

Viewer Pane:

- call Canvas1 .GetPixelColor
 - x
 - y
- call Canvas1 .Save
- call Canvas1 .SaveAs
 - fileName
- call Canvas1 .SetBackgroundPixelColor
 - x
 - y
 - color
- Canvas1 . BackgroundColor
- set Canvas1 . BackgroundColor to
- Canvas1 . BackgroundImage
- set Canvas1 . BackgroundImage to No available assets
- The name of a file containing the background image for the canvas
- set Canvas1 . BackgroundImageinBase64 to
- Canvas1 . ExtendMovesOutsideCanvas
- set Canvas1 . ExtendMovesOutsideCanvas to

Right Side:

- when Create .Click
 - do call ImageBot1 .CreateImage
 - description Input . Text
- when ImageBot1 .ImageCreated
 - fileName
 - do set Canvas1 . BackgroundImage to No available assets

Navigation:

- Backpack icon
- Target icon
- Zoom in (+)
- Zoom out (-)
- Trash icon

Step 9: Drag the {No Available Assets} block into the trash

ImageGenerator_Template

Screen1 Add Screen ... Remove Screen Project Properties Publish to Gallery Designer Blocks

Blocks

Built-in

- Control
- Logic
- Math
- Text
- Lists
- Dictionaries
- Colors
- Variables
- Procedures

Screen1

- HorizontalArrangement1
 - Input
 - Create
- HorizontalArrangement2
 - Canvas1
 - ImageBot1

Any component

Rename Delete

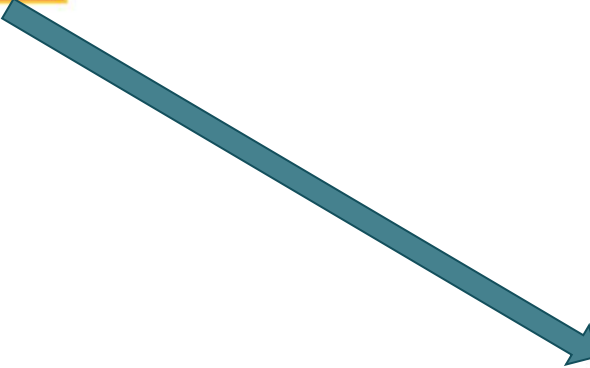
Media

Upload File ...

Viewer

```
when Create.Click
do call ImageBot1.CreateImage
   description Input.Text

when ImageBot1.ImageCreated
  fileName
do set Canvas1.BackgroundImage to No available assets
```



Warning icons: 0 (yellow triangle), 0 (red X)

Show Warnings

Designer controls: Home, Add, Subtract, Trash

Step 10: Hover over the {fileName} and attach this block to replace the deleted block

ImageGenerator_Template

Screen1 ▾ Add Screen ... Remove Screen Project Properties Publish to Gallery

Designer Blocks

Blocks

- Built-in
 - Control
 - Logic
 - Math
 - Text
 - Lists
 - Dictionaries
 - Colors
 - Variables
 - Procedures
- Screen1
 - HorizontalArrangement1
 - Input
 - Create
 - HorizontalArrangement2
 - Canvas1
 - ImageBot1
- Any component
 - Rename
 - Delete

Media

Upload File ...

Viewer

when Create ▾ .Click

do call ImageBot1 ▾ .CreateImage

description Input ▾ .Text ▾

when ImageBot1 ▾ .ImageCreated

fileName

get fileName ▾ BackgroundImage ▾ to get fileName ▾

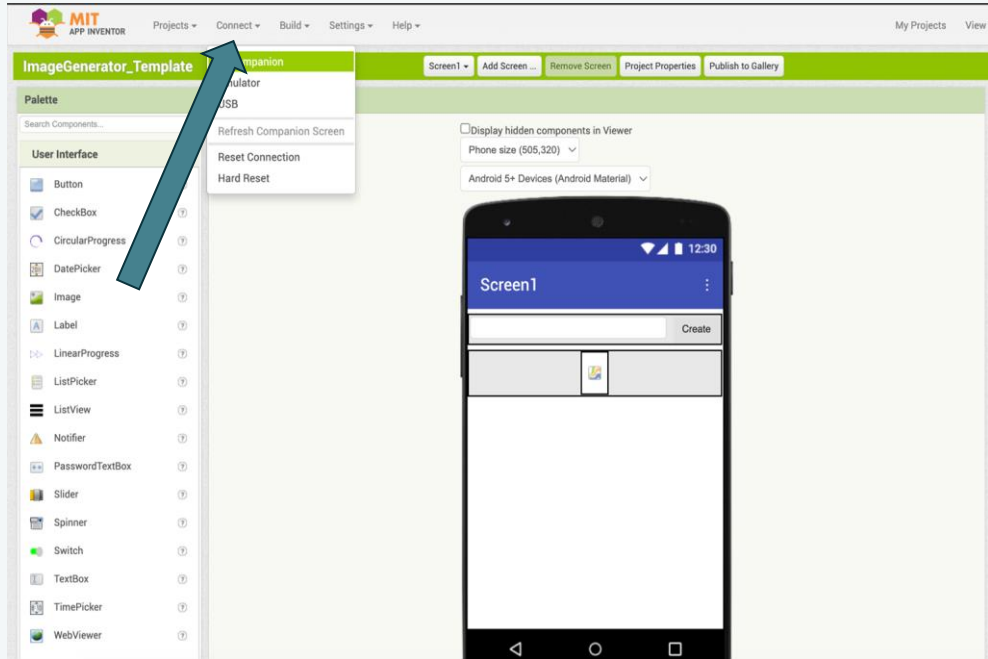
set fileName ▾ to

0 0

Show Warnings

Privacy Policy and Terms of Use Accessibility: accessibility.mit.edu

Now Connect to your mobile device and try it out!



End Of Class!



Homework:

Use your imagination and test out the ImageBot!



Contact me if you need help or have questions: @jonhan604@gmail.com