Personal Pictogram

An extension after Mission 8 - AnswerBot

Personal Pictogram

A pictogram uses symbols or images to represent data or a specific concept.

This pictogram is going to represent …. YOU!

Personal Pictogram

Use images (and even audio) to describe who you are.

Examples:

- Add images that express who you are
- Add sound files that express who you are
- Add a list (or 2) of pictures of favorite things
- Use color – intentionally set pixels to a specific color

Working with JPG image files

First find the images you want to add
and get them formatted for CodeX

Displaying images on Codex

The CodeX comes with many images that are available through the codex module. They are **bitmap** images.

You might want to use your own images, which are often JPG files.

- pics.HEART
- pics.HEART_SMALL
- pics.MUSIC
- pics.HAPPY
- pics.SAD
- pics.SURPRISED
- pics.ASLEEP
- pics.TARGET
- pics.TSHIRT
- pics.PLANE
- pics.HOUSE
- pics.TIARA
- pics.ARROW_N
- pics.ARROW_NE
- pics.ARROW_E
- pics.ARROW_SE
- pics.ARROW_S
- pics.ARROW_SW
- pics.ARROW_W
- pics.ARROW_NW

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Adding JPG image files

You can add images that are JPG files to your CodeX.

Just follow these steps.

1. Find an image, or use one of your own images. Save it where you can find it on your computer.
   a. You should be aware of copyright laws. If you look on the internet for images, look for creative commons or royalty free images.
   b. You should always give credit for the image in a comment in your code.

Making the JPG image useable

Before you can upload and use the image, it needs to be the correct size and compression.
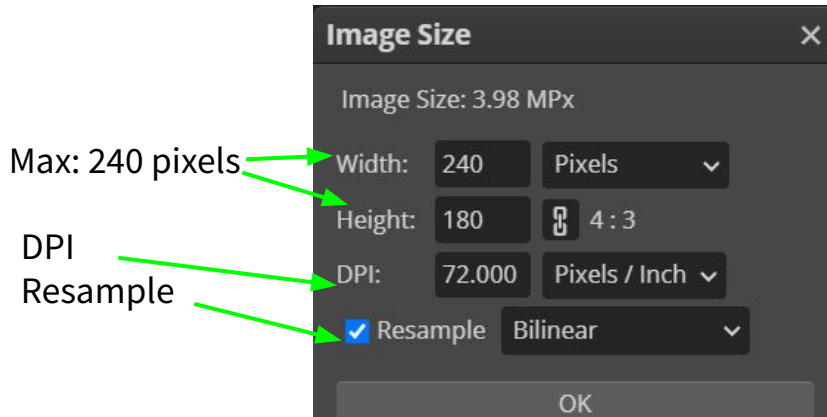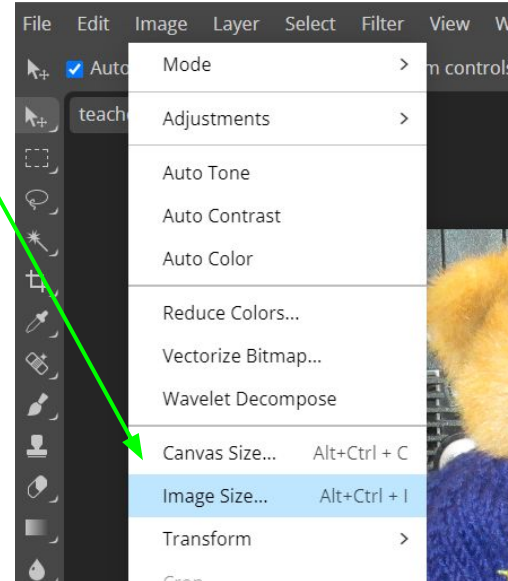
2. Use Photopea
    - Click on the link for Photopea, a free online photo editor.

3. Open your image.
    - This is easiest if it is saved to your computer or a flash drive or Google drive for easy access.

Making the JPG image useable

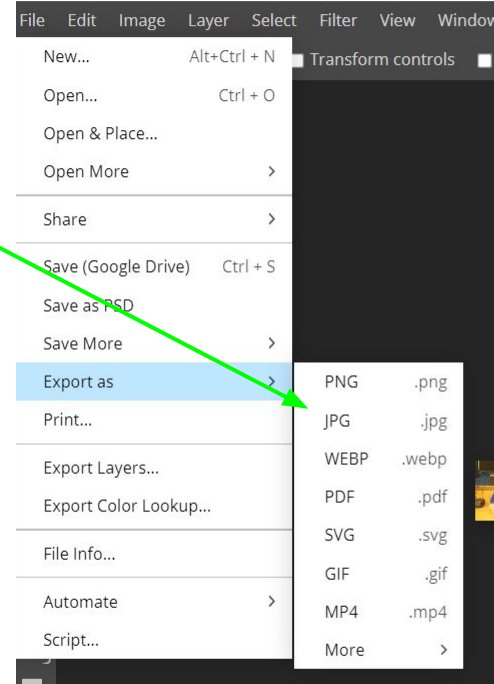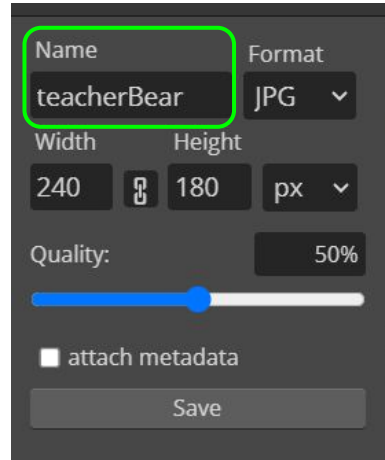4. Change the image size to **240**x**240** pixels (or smaller)

- Click on **Image** – Image Size
- Change Width & Height
- Change the DPI to 72
- The RESAMPLE needs to be Bilinear

File   Edit   Image   Layer   Select   Filter   View

Mode   >
Adjustments   >

Auto Tone
Auto Contrast
Auto Color

Reduce Colors...
Vectorize Bitmap...
Wavelet Decompose

Canvas Size...   Alt+Ctrl + C
Image Size...   Alt+Ctrl + I
Transform   >

Image Size   ✕

Image Size: 3.98 MPx

Max: 240 pixels → Width: 240   Pixels

→ Height: 180   🔗 4 : 3

DPI
Resample

→ DPI: 72.000   Pixels / Inch

→ ✓ Resample   Bilinear

OK

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Making the JPG image useable
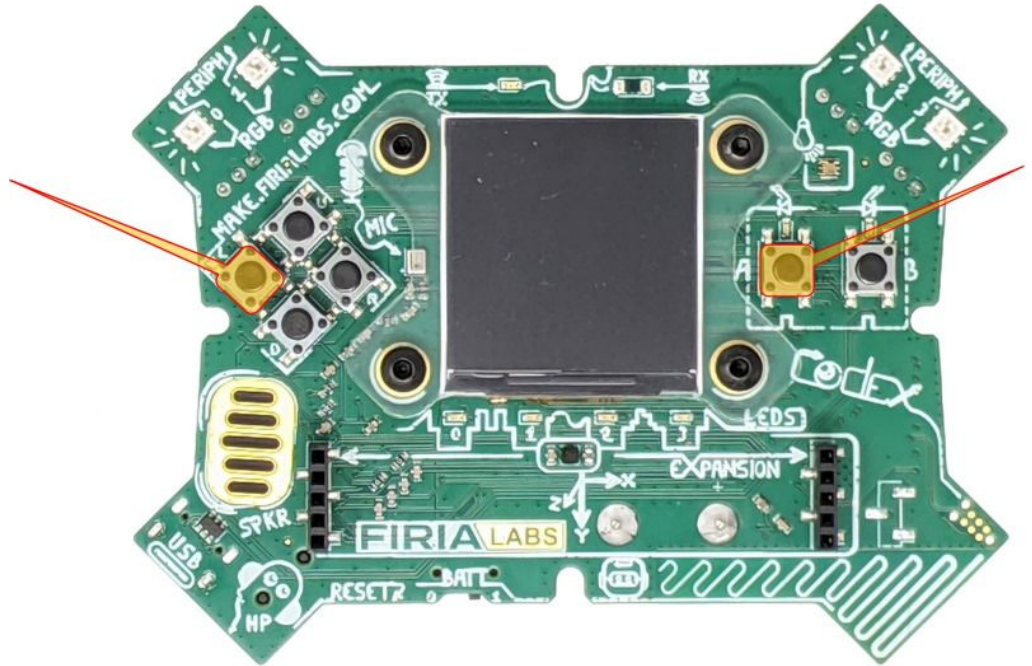
5. Export the image as a JPG

- Click on File – Export as
- Choose JPG
- Give the image a simple name (no spaces)
- Save it where you can find it

Adding JPG image files

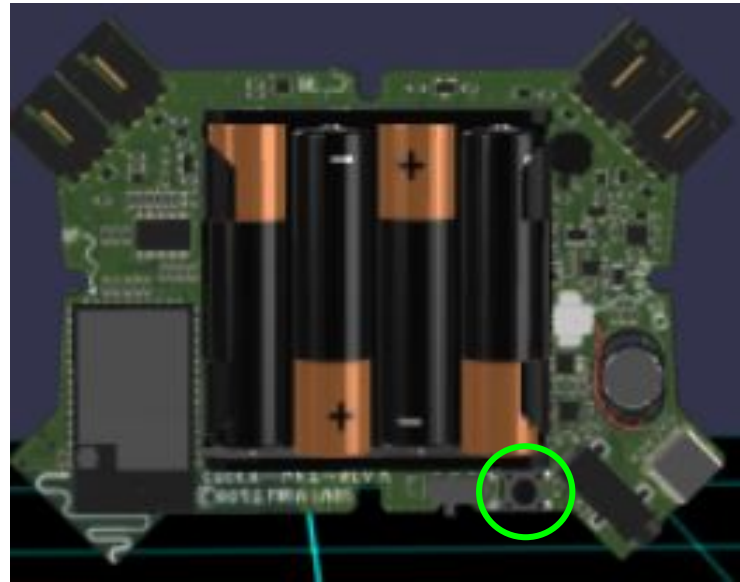6. Put your CodeX into USB-writeable mode ([youtube video demonstration](#))

   a. Make sure the CodeX is connected to your computer
   b. Press and hold the **L** and **A** buttons and keep holding them down

Adding JPG image files

6. Put your CodeX into USB-writeable mode

c. Reach around and
briefly press the
RESET button
(press and release)

Adding JPG image files

6. Put your CodeX into USB-writeable mode

      d. Keep holding buttons **A** and **L** until you see the red LEDs light up from *3* to *0* in right-to-left order.

      e. You will see a *double-flash* of ALL red LEDs to confirm the filesystem is in USB-writable mode.

Adding JPG image files

6. Put your CodeX into USB-writeable mode

      f. Now release **L** and **A**.

      g. You are ready to upload your files to the Codex

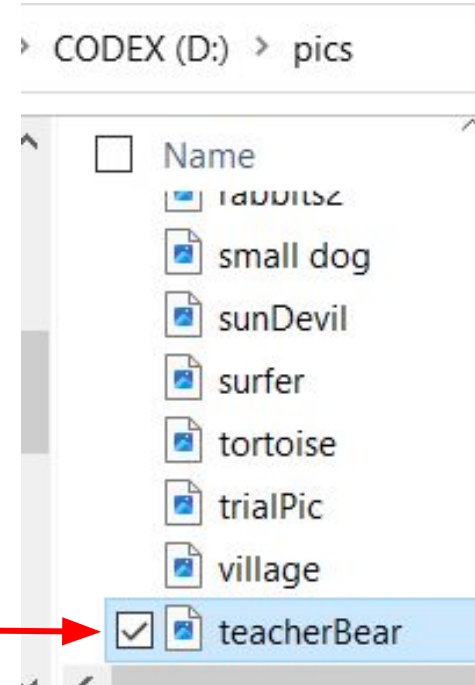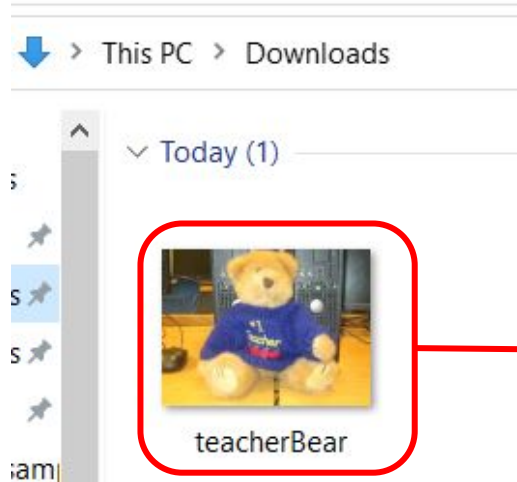For more information, check out the documentation:
https://docs.firialabs.com/codex/WorkingWithFiles.html

Adding JPG image files

7. Upload your image files to the CodeX

    a. You can upload right to the CodeX, or you can create a folder for pics and upload there

Adding JPG image files

8. Make the CodeX unwritable again by **disconnecting** it from the computer and **then connecting** again.

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Your personal pictogram

Now add your images to your AnswerBot program

Personal Pictogram

- Open your AnswerBot program
  - (or use the starter code)
- Run the program and make sure it is error free.
  - Make any changes you want to make

```python
'''
Mission 8 Answer Bot
Starter code for personal pictogram
'''


from codex import *
import random
from time import sleep

# My list of pictures, colors and text
my_images = [pics.TIARA, GREEN, pics.PLANE, "hello!",
             pics.HAPPY, BLUE, pics.TARGET, "what's up?",
             RED, "Ahoy", pics.HEART]
# my list of JPG pics uploaded to Codex


# Introduction
display.print("A=images", scale=3)
display.print("B=pictures", scale=3)
display.print("D=quit", scale=3)

while True:
    pixels.set(0, random.choice(COLOR_LIST))
    pixels.set(1, random.choice(COLOR_LIST))
    pixels.set(2, random.choice(COLOR_LIST))
    pixels.set(3, random.choice(COLOR_LIST))
```

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Personal Pictogram

- Create a list and add your images as its elements
  - If you used a folder for the images, include the folder with the image name
  - If you did not use a folder for the images, just use the image name
  - Use "quotation marks" around the names!

```
# my list of JPG pics uploaded to Codex
my_pics = ["pics/doggie.jpg", "pics/goldfish.jpg", "pics/kitty.jpg",
           "pics/piggie.jpg", "pics/rabbits2.jpg", "pics/tortoise.jpg",
           "pics/my_loves.jpg", "pics/sunDevil.jpg", "pics/firia.jpg",
           "pics/kyoto.jpg", "pics/christmas.jpg"]
```

Personal Pictogram

- Add an "if" statement for BTN_B
  - If button B was pressed, display the JPG image.
  - Get a random image from "my_list"
  - Use `display.draw_jpg(item)` to display the image

```
# Display random picture when BTN_B is pressed
if buttons.was_pressed(BTN_B):
    item = random.choice(my_pics)
    display.draw_jpg(item)
```

Personal Pictogram

- Complete the code by breaking out of the loop to quit the program.

```
# Break loop if BTN_D is pressed
if buttons.was_pressed(BTN_D):
    break
```

- Test your code and have fun learning about each other as you run their programs.