In [ ]:
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#Date:  04/02/2020

#import necessary modules
import os, sys
from PIL import Image, ImageFilter
#Creating menu so user can make a choice:
def menu():
        print("\n")
        print("                ********** Welcome to Project2 Pillow Library
 **********")
        print()

        choice = input("""
                                        A: See the Image
                                        B: Image Detail
                                        C: Resized Image
                                        D: Resized Image using thumbnail to ke
ep the aspect ratio
                                        E: Crop the Image
                                        F: Rotate the Image
                                        G: Color Transform to greyScale and cm
yk
                                        H: Flip the Image (Mirror version)
                                        I: Change Image type/format
                                        J: Blurr the Image
                                        K: Paste an image
                                        L: About me
                                        M: Quit

                                        Please enter your choice: """)
        print("\n")
        if choice == "A" or choice == "a":
                imageSee()
                menu()
        elif choice == "B" or choice == "b":
                imgDetail()
                menu()
        elif choice == "C" or choice == "c":
                resize()
                menu()
        elif choice == "D" or choice == "d":
                resizeTh()
                menu()
        elif choice == "E" or choice == "e":
                crop()
                menu()
        elif choice == "F" or choice == "f":
                rotate()
                menu()
        elif choice == "G" or choice == "g":
                transform()
                menu()
        elif choice == "H" or choice == "h":
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                flip()
                menu()
        elif choice == "I" or choice == "i":
                type()
                menu()
        elif choice == "J" or choice == "j":
                blur()
                menu()
        elif choice == "K" or choice == "k":
                copy()
                menu()
        elif choice == "L" or choice == "l":
                About()
                menu()
        elif choice == "M" or choice == "m":
                print("Babye!")
                sys.exit
        else:
                print("You must only select either A, B, C, D, E, F, G, H, I,
 J, K, L or I!")
                print("Please try again!")
                menu()



#Function to see the image
def imageSee():
        try:
                #Making sure that path is correct and image is in the same fol
der, directory
                img = Image.open("img1.jpg")
                print("Opening!")
                img.show()
        except IOError:
                print("Unable to load image!\nPlease make sure image directory
path is correct.")




#Function for paste an Image
def copy():
        try:
                img = Image.open("img1.jpg")
                logo = Image.open("logo.png")
                image_copy = img.copy()
                #validate input
                try:
                        inp = int(input("Enter x coordinate in upper left: \n"
))
                        inp1 = int(input("Enter y coordinate in upper left: \n
"))
                        image_copy.paste(logo, (inp, inp1))
                        image_copy.save("pasted_image.jpg")
                        print("Image created successfully!")
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                        image_copy.show()
                except ValueError:
                        print("Input is not valid, enter Int only!")
                        inp = int(input("Enter x coordinate in upper left: \n"
))
                        #paste function
                        inp1 = int(input("Enter y coordinate in upper left: \n
"))
                        image_copy.paste(logo, (inp, inp1))
                        image_copy.save("pasted_image.jpg")
                        print("Image created successfully!")
                        image_copy.show()
        except IOError:
                print("Unable to load image!\nPlease make sure image directory
path is correct.")




#Function to see the image detail
def imgDetail():
        try:
                img = Image.open("img1.jpg")
                print("The Image format is: ", img.format)
                print("The Image size in pixel (width, height) is: ", img.size
)
        except IOError:
                print("Unable to load image!\nPlease make sure image directory
path is correct.")




#Function to change the image format
def type():
        try:
                img = Image.open("img1.jpg")
        #Getting input
                inp = input("Enter dib, eps, gif, jpeg, pcx, png, sgi Image fi
le formats: ")
                #validate input
                while inp not in ["bmf", "dib", "eps", "gif", "jpeg", "pcx",
"png", "sgi"]:
                        print("Invalid Input!")
                        inp = input("Please enter supported image-format: ")
                img.save("new." + inp)
                print("New Image format created successfully!, check your fold
er. ")
        except IOError:
                print("Unable to load image!\nPlease make sure image directory
path is correct.")
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#Function for blurriness
def blur():
        try:
        # creating a image object
                img = Image.open("img1.jpg")
                #validate int input
                try:
                        inp = int(input("Enter the radius for blurriness of th
e image: \n"))
                # applying the Gaussian Blur filter
                        img_blur = img.filter(ImageFilter.GaussianBlur(radius
= inp))
                        img_blur.save("new_blur.jpg")
                        print("Image created successfully!")
                        img_blur.show()
                except ValueError:
                        print("Input is not valid, enter int only!")
                        inp = int(input("Enter the radius for blurriness of th
e image: \n"))
                # applying the Gaussian Blur filter
                        img_blur = img.filter(ImageFilter.GaussianBlur(radius
= inp))
                        img_blur.save("new_blur.jpg")
                        print("Image created successfully!")
                        img_blur.show()
        except IOError:
                print("Unable to load image!\nPlease make sure image directory
path is correct.")




#Function to resize the image
def resize():
        try:
                img = Image.open("img1.jpg")
                #validate input
                try:
                        #Getting Input
                        inp = int(input("Enter width: \n"))
                        inp1 = int(input("Enter height: \n"))
                        new_image = img.resize((inp, inp1))
                        new_image.save("newimg_size.jpg")
                        print("The original image: ", img.size) # Output: (192
0, 1080)
                        print("The new image: ", new_image.size) # Output: (in
p, inp1)
                        new_image.show()
                except ValueError:
                        print("Input is not valid, enter int only!")
                        inp = int(input("Enter width: \n"))
                        inp1 = int(input("Enter height: \n"))
                        new_image = img.resize((inp, inp1))
                        new_image.save("newimg_size.jpg")
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                        print("The original image: ", img.size) # Output: (192
0, 1080)
                        print("The new image: ", new_image.size) # Output: (in
p, inp1)
                        new_image.show()
        except IOError:
                print("Unable to load image!\nPlease make sure image directory
path is correct.")




#Function to resize the image and kept original aspect ratio of the image
def resizeTh():
        try:
                img = Image.open("img1.jpg")
        #validate input
                try:
                        #Getting Input
                        inp = int(input("Enter width: \n"))
                        inp1 = int(input("Enter height: \n"))
                        img.thumbnail((inp, inp1))
                        img.save("img_thumbnail.jpg")
                        print("The new image which kept the aspect ratio of th
e original image: ", img.size) # Output: (inp, inp1)
                        img.show()
                except ValueError:
                        print("Input is not valid, enter int only!")
                        inp = int(input("Enter width: \n"))
                        inp1 = int(input("Enter height: \n"))
                        img.thumbnail((inp, inp1))
                        img.save("img_thumbnail.jpg")
                        print("The new image which kept the aspect ratio of th
e original image: ", img.size) # Output: (inp, inp1)
                        img.show()
        except IOError:
                print("Unable to load image!\nPlease make sure image directory
path is correct.")




#Function for cropping the image
def crop():
        try:
                img = Image.open("img1.jpg")
                print("Image original size is: ", img.size)
                #validate input
                try:
        #Getting Input
                        left = int(input("Enter left dimension: \n"))
                        upper = int(input("Enter upper dimension: \n"))
                        right = int(input("Enter right dimension: \n"))
                        lower = int(input("Enter lower dimension: \n"))
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        #(left, upper, right, lower).
                        box = (left, upper, right, lower)
                        cropped_img = img.crop(box)
                        cropped_img.save('cropped_img.jpg')
                        print("Image cropped successfully as a new file: ", cr
opped_img.size)
                        cropped_img.show()
                except ValueError:
                        print("Input is not valid, enter int only!")
                        #Getting Input
                        left = int(input("Enter left dimension: \n"))
                        upper = int(input("Enter upper dimension: \n"))
                        right = int(input("Enter right dimension: \n"))
                        lower = int(input("Enter lower dimension: \n"))
        #(left, upper, right, lower).
                        box = (left, upper, right, lower)
                        cropped_img = img.crop(box)
                        cropped_img.save('cropped_img.jpg')
                        print("Image cropped successfully as a new file: ", cr
opped_img.size)
                        cropped_img.show()
        except IOError:
                print("Unable to load image!\nPlease make sure image directory
path is correct.")




#Function to rotate the image in different angles
def rotate():
        try:
                img = Image.open("img1.jpg")
                #validate input
                try:
        #Getting input from user
                        inp = int(input("Please enter an angle 45, 90, 180, 27
0, 360 or your own choice no for an image rotation: "))
                        img_angle = img.rotate(inp)
                        img_angle.save("img_rot_angle.jpg")
                        print("Image rotated successfully!")
                        img_angle.show()
                except ValueError:
                        print("Invalid input,enter only int!")
                        inp = int(input("Please enter an angle 45, 90, 180, 27
0, 360 or your own choice no for an image rotation: "))
                        img_angle = img.rotate(inp)
                        img_angle.save("img_rot_angle.jpg")
                        print("Image rotated successfully!")
                        img_angle.show()

        except IOError:
                print("Unable to load image!\nPlease make sure image directory
path is correct.")


#Function to transform the image in greyscale and CMYK
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def transform():
        try:
                img = Image.open("img1.jpg")
                inp = input("Enter L (greyscale), CMYK: ")
                if inp == 'L' or inp == 'l':
                        greyscale_img = img.convert('L')
                        greyscale_img.save("greyscale_img.jpg")
                        print("Image created successfully!, check your folder"
)
                        greyscale_img.show()
                if inp == 'CMYK' or inp == 'cmyk':
                        cmyk_img = img.convert('CMYK')
                        cmyk_img.save("cmyk_img.jpg")
                        print("Image created successfully!, check you folder."
)
                else:
                        print("Error, Invalid Choice!")

        except IOError:
                print("Unable to load image!\nPlease make sure image directory
path is correct.")




#Function for intro about me
def About():
        print("Hi, My name is Muhammad Umar Khalid major in compter science.\n
I love to do coding and fix things. My favourite sport is cricket.\n ")




#Function to flip the image in to the mirror version
def flip():
        try:
                img = Image.open("img1.jpg")
                img_flip = img.transpose(Image.FLIP_LEFT_RIGHT)
                img_flip.save('img_flip.jpg')
                print("Image created successfully!")
                img_flip.show()
        except IOError:
                print("Unable to load image!\nPlease make sure image directory
path is correct.")


#main funtion
if __name__ == '__main__':
        print(menu())
```