Python Project: Painting Program

Concept

In this project you will create a python program that allows the user to paint using the mouse and keyboard. This project will challenge your knowledge of Pygame, switch/case statements, and proper user interfaces.

Overall, the program should take roughly 100 lines of code to create, most of which is dealing with the numerous buttons the user can press to change colors. Remember, you are allowed to use pygame.org/docs/ as a reference.

Instructions

1. Create a pygame window
2. Display a menu
3. Create variables for the brushSize and brushColor
4. Create a while loop
5. While in the loop, get events from pygame
   a. If the event is a keypress, then check which key was pressed
      i. Use Plus and Minus to increase or decrease brushSize
         (Be careful to not allow brushSize to get too big or too small!)
      ii. Use the number keys to select a color. For example, 1 = Red, 2 = Orange, 3 = Yellow, 4 = Green, 5 = Blue, 6 = Purple, 9 = White, 0 = Black
   b. If the event is a mouse-click, then draw a circle using brushSize and brushColor at the coordinates the user clicked
6. While in the loop, update the screen

Bonus Points:
A. Add your own colors to buttons 7 and 8
B. Using the F key, create a Fill function that covers the screen with the selected color
C. Using the F key, create a Fill function that replaces the chosen color with the color in the brushColor variable **(This one is tricky!)**

```python
import pygame

def main():
    pygame.display.init()
    clock = pygame.time.Clock()

    windowWidth = 800
    windowHeight = 600

    window = pygame.display.set_mode((windowWidth, windowHeight))
    pygame.display.set_caption("Drawing Program")

    windowColor = [255, 255, 255]
    window.fill(windowColor)

    pygame.display.update()

    """Print the menu here"""
    """Red    - 1"""
    """Orange - 2"""
    """Yellow - 3"""
    """Green  - 4"""
    """Blue   - 5"""
    """Purple - 6"""
    """White  - 9"""
    """Black  - 0"""

    """Create variables for brushColor and brushSize"""

    """Create a while loop"""

    ...."""Create a for loop to get the pygame events"""

    ........"""Check if the user presses a KEYDOWN"""

    ............"""Match the event.key to its case"""
    ............"""case 27 = Escape"""
    ............"""case 45 = Minus """
    ............"""case 48 = 0     """
    ............"""case 49 = 1     """
    ............"""case 61 = Plus  """

    ........"""Check if the mouse gets pressed"""

    ............"""Get the position of the mouse"""

    ............"""Draw a circle on the window, using brushColor, the mouse's
position, and brushSize"""

    ...."""Update the display"""

main()
```