**Problem Statement-**

As an internship completion task, I was asked to make a project using python modules and things I have learned there.

**Internship Project-**

So, for my project I developed an interactive game using OpenCV, Mediapipe and Pygame in python.

I took the idea of a basic balloon popping game, where random balloons would appear on the screen and the player used to pop them, using click of the mouse but rather than using mouse I added a feature where player can use their index finger to pop them.

**Approach-**

1. Developed the base of the game using Python PyGame Module.
2. Used 4 different balloons color namely red, blue, green, yellow with their respective burst effects.
3. Made use of Object-Oriented Programming to define the attribute of each balloon.
4. The attribute contained the modified image, x and y coordinates and speed of that balloon.
5. Made use of Sprite class in PyGame to hold all the attributes and behaviors of the game characters.
6. Displayed the score and other instructions on the screen.
7. Then for the second part I used OpenCV Library to access the camera and capture the real time footage of the background.
8. Converted the frame into desired size and from BGR to RBG.
9. For the third part of the game, I used mediapipe library to detect index finger and get the coordinates.
10. Then for basic game logic when coordinate of balloon and user’s finger collided the balloon would pop also triggering the burst effect and the score will increase.
11. For the final touches I also added an Intro Window which had a start button that could also be accessed by using the index finger and the current high score of the session.

Why RBG to BRG

Compatibility: RGB is the standard color format used in most graphics libraries, including Pygame. It is widely supported and understood by developers, making it easier to work with and integrate into existing codebases or external tools.

Consistency: RGB follows the conventional order of color channels, where the Red channel comes first, followed by Green and Blue. This order is consistent with color representation in many other applications and frameworks, making it more intuitive for developers.

Accessibility: RGB color values are commonly represented in hexadecimal notation, such as #FF0000 for pure red. This format is widely recognized and used across different platforms and design tools, making it easier to communicate and work with colors in a standardized manner.