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***Reflection***

**Coding techniques that are used in the program and how:**

* **Two - Dimensional Arrays**
  + I used two dimensional arrays to create a four by four board. Each tab in the board contains a letter ‘Y’ , ‘B’ , ‘P’, and ‘R’. Those letters symbolizes the colours in the buttons and by using those letters, I could verify if three connected buttons / tabs in the board are the same colour.
  + I used two dimensional array to duplicate the original colour of each tab, everytime the player clicked a button. After I duplicate, The other codes verify if there are two buttons that is connected to the clicked one that has the same colour. If there is, The colours in the original board will change and using the duplicate, the code checks if the user has clicked a correct button and there are some buttons that changed. If all of the duplicate tabs are same as the original tabs, It means that the button clicked has no two buttons connected to it that have same colour as the original. Therefore, a message box will appear.
* **Sorting**
  + Sorting is used when the button of the same colour disappear, the colour of the buttons on top will go down to the next button. The sorting techniques are used to do the swapping.
* **Changing the colour of the button**
  + Using the If statements, i could generate colours on buttons. When new game is clicked, using random numbers I generate number between 1 to 4. Each number represent a colour. Using the if statements I declare that if random number is 1 the colour will be yellow, if 2 then blue, if 3 then purple, if 4 then red. Using this code I could change the colour on the button.
* **Timer function**
  + The timer function is used so that the player will have an idea on how much time they spend on playing the game. Timer function default is 1 millisecond per tick. I modified it so that it will be 1 second per tick.
* **If Statements**
  + If Statements played a big role in this program. I used if statements to verify if three buttons connected are same colour. It is done by checking is the board tabs are same colour.
* **Conditional Loops**
  + Conditional loops is used to verify if there are three or more buttons connected to each other that have the same colour. It is used, so that when there are no more buttons to be clicked, a message box will appear and show ‘Game Over’.

**What I learned in this Project:**

* At the beginning, I wanted to research for a more easier coding technique in checking if the button clicked has two more buttons connected to it that have the same colour as it is. I started coding with If statements and tried to research for more. But then I discovered that this is kind of unique game and I couldn’t find any game similar to this therefore I coded it using just the if statement. As I concluded in my proposal, Using If statement really took so much time. I have more than 50,000 lines of codes. It made the debugging really hard. It also takes time to launch the program. Originally I planned to create a program where 3 or more connected, same coloured buttons will be gone when clicked. But as I was coding the game it is more complicated to do more than three and I didn’t have enough time so I created a game where only three button connect and same colour will be gone when clicked.