# Name: - L Prathyusha

In [57]:

```python
from ipywidgets import *
from random import *
import numpy as np
```

In [58]:

```python
btn_zero=Button ( description='0')
btn_one=Button ( description='1')
btns = HBox ([btn_zero,btn_one])
btns
```

       0                        1

Now we can assign these buttons to each python function

In [59]:

```python
def click_zero(b):
    update_game(0)
btn_zero.on_click: (click_zero)
```

In [60]:

```python
def click_one(b):
    update_game(1)
btn_one.on_click: (click_one)
```

# Create scoreboard widget

In [61]:

```python
usr_score = IntProgress (value=0,min=0,max=50,description='You',bar_style='success')
bot_score = IntProgress (value=0,min=0,max=50,description='bot',bar_style='danger')
scoreboard = VBox([usr_score,bot_score])
scoreboard
```

      You

        bot

# Create Game Over Widget

In [62]:

```python
final_msg = HTML ("<h1 style='color:green'> You Win!</h1>")
final_msg
```

# Create Game_box

In [63]:

```python
game_box = VBox([         HBox([scoreboard,final_msg]),
                          btns
                ])
game_box
```

You

bot

0                    1

In [64]:

```python
final_msg.layout.visibility="hidden"
```

In [ ]:

# Function: Update_game

In [65]:

```python
usr_history = []
```

In [66]:

```python
usr_history.append(1)
```

In [67]:

```python
usr_history.append(0)
```

In [68]:

```
usr_history
```

Out[68]:

```
[1, 0]
```

In [69]:

```
sum(usr_history)
```

Out[69]:

```
1
```

In [70]:

```
len(usr_history)
```

Out[70]:

```
2
```

In [71]:

```
prob=sum(usr_history)/len(usr_history)
prob
```

Out[71]:

```
0.5
```

In [72]:

```
comp_choice = np.random.binomial(1, prob)
comp_choice
```

Out[72]:

```
0
```

In [73]:

```python
def update_game(usr_choice):
    prob = sum(usr_history)/len(usr_history)
    comp_choice = np.random.binomial(1, prob, 1)[0]
    usr_history.append(usr_choice)

    if comp_choice == usr_choice:
        bot_score.value += 1

    else:
        usr_score.value +=1

    if usr_score.value == 50 or bot_score.value == 50 :
        if bot_score.value == 50:
            final_msg.value="h1 style = 'color:red'> You Loose! </h1>"
        final_msg.layout.visibility = 'visible'
        btn_zero.disabled = True
        btn_one.disabled = True
```

# PLAY

In [74]:

```python
display( game_box )
```

You

bot

0　　　　　　　　　　　　　　　1

In [ ]: