

Binary Battle (Python)

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Program :

```
# User as "Player 1"
# Bot as "Jarvis"

# Import Tools
from ipywidgets import *
import numpy as np

# Buttons
btn_zero = Button(description='0')
btn_one = Button(description='1')
btns = HBox([btn_zero, btn_one])

# Scoreboard
usr_score = IntProgress(value=0, min=0, max=10, description='Player 1:', bar_style='success')
bot_score = IntProgress(value=0, min=0, max=10, description='Jarvis:', bar_style='danger')
scoreboard = VBox([usr_score, bot_score])

# Message
final_msg = HTML("<h1 style='color:green'>You Win!</h1>")
game_box = VBox([HBox([scoreboard, final_msg]), btns])

# Function
usr_history = []

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

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

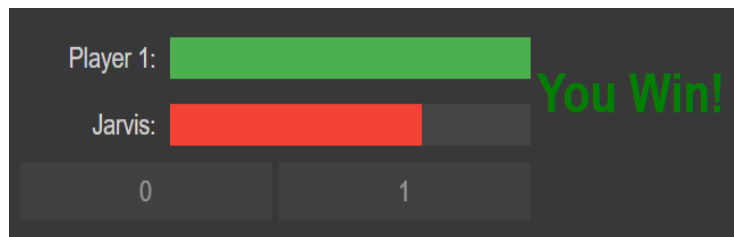
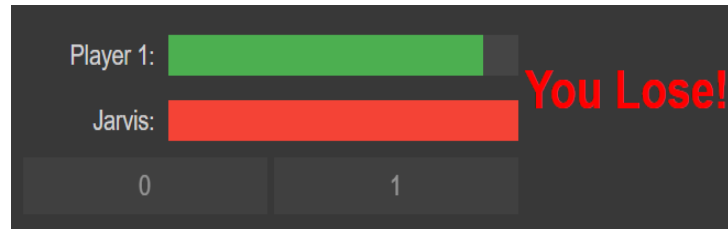
def update_game(usr_choice):
    prob = sum(usr_history) / len(usr_history) if usr_history else 0.5
    comp_choice = np.random.binomial(1, prob/100)
    usr_history.append(usr_choice)

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

    if usr_score.value == 10 or bot_score.value == 10:
        if bot_score.value == 10:
            final_msg.value = "<h1 style='color:red'>You Lose!</h1>"
            final_msg.layout.visibility = "visible"
            btn_zero.disabled = True
            btn_one.disabled = True

display(game_box)
```

Output :



Explanation :

In this straightforward game, Player 1 (User) competes against Jarvis, a Jarvis-named robot. The player can choose between two options represented by the binary buttons "0" and "1" in the game.

The bot randomly selects between "0" and "1" with a probability based on the player's prior selection each time the player makes a decision. The bot will score points if its selection matches that of the player. If not, the player is awarded one point.

The game goes on until a player receives a score of 10, at which point it is over. The final message, which shows whether the player won or lost, is then shown. The button has been disabled, making it impossible to play the game any longer. A progress bar is used to display player and bot scores, and HTML is used to display the message.