

PYTHON PROGRAMMING INTERNSHIP PROJECT 4

Project Title: Virtual Coin Toss

Objective: The aim of this project is to create a Python program that simulates flipping a coin.

Name: Aarya Ramchandra Tarphe

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Duration: 3months

Code:

```
import random

import tkinter as tk

from tkinter import messagebox


class CoinTossApp:

    def __init__(self, root):

        self.root = root

        self.root.title("Virtual Coin Toss")

        self.root.geometry("400x300")

        self.root.configure(bg="#2C3E50")



        self.heads_count = 0

        self.tails_count = 0


    # Title Label

        self.title_label = tk.Label(root, text=" 🎲 Virtual Coin Toss 🎲 ", font=("Arial", 16, "bold"), fg="white", bg="#2C3E50")

        self.title_label.pack(pady=10)
```

```

# Coin Flip Result Label

    self.result_label = tk.Label(root, text="Click 'Toss Coin' to start!", font=("Arial", 14),
fg="yellow", bg="#2C3E50")

    self.result_label.pack(pady=10)

# Toss Button

    self.toss_button = tk.Button(root, text=".flip Toss Coin", font=("Arial", 12, "bold"),
fg="white", bg="#E67E22", command=self.flip_coin)

    self.toss_button.pack(pady=10)

# Statistics Label

    self.stats_label = tk.Label(root, text="Heads: 0 (0%) | Tails: 0 (0%)", font=("Arial", 12),
fg="white", bg="#2C3E50")

    self.stats_label.pack(pady=5)

# Reset Button

    self.reset_button = tk.Button(root, text="refresh Reset", font=("Arial", 12, "bold"),
fg="white", bg="#3498DB", command=self.reset_game)

    self.reset_button.pack(pady=5)

# Exit Button

    self.exit_button = tk.Button(root, text="✖ Exit", font=("Arial", 12, "bold"), fg="white",
bg="red", command=self.exit_game)

    self.exit_button.pack(pady=5)

def flip_coin(self):
    """Flips the coin and updates results."""

    result = random.choice(["Heads", "Tails"])

    self.result_label.config(text=f"coin {result}!", fg="yellow")

```

```
if result == "Heads":  
    self.heads_count += 1  
  
else:  
    self.tails_count += 1  
  
  
total_flips = self.heads_count + self.tails_count  
  
heads_percentage = (self.heads_count / total_flips) * 100 if total_flips > 0 else 0  
tails_percentage = (self.tails_count / total_flips) * 100 if total_flips > 0 else 0  
  
  
self.stats_label.config(text=f"Heads: {self.heads_count} ({heads_percentage:.2f}%) | "  
                      f"Tails: {self.tails_count} ({tails_percentage:.2f}%)")  
  
  
def reset_game(self):  
    """Resets the counters and results."""  
    self.heads_count = 0  
    self.tails_count = 0  
    self.result_label.config(text="Click 'Toss Coin' to start!", fg="white")  
    self.stats_label.config(text="Heads: 0 (0%) | Tails: 0 (0%)")  
  
  
def exit_game(self):  
    """Exits the application."""  
    if messagebox.askyesno("Exit", "Are you sure you want to exit?"):  
        self.root.destroy()  
  
  
# Run the GUI  
root = tk.Tk()  
app = CoinTossApp(root)
```

```
root.mainloop()
```

Output



