Date Released: Thursday, November 27, 2025

Due Date: Tuesday, September 30, 2025

Quantum Computing & Information Processing

Assignment - II

Task

- Implement single and double coin toss quantum circuits and run them on IBM's QPU (concurrently).
- Retrieve the results from the QPU and analyze them. KPIs:
  - Probability outcome of the events.
  - Compute time
  - Memory utilization

NB:
- Choose a quantum gate that best describes the behavior of a coin toss event.
- Transpile your quantum circuits.
- Use a function to generate the different coin toss scenarios.

Extra (Non-Scoring):
- Analyze how far you can go with the concurrent QCs based on the word size of the QPU.

How to upload your code

1. Format your code nicely.
2. Include your full name as a block comment in your Python scripts.
3. Zip your Python scripts and plots into a single file and name it with your full name.
4. Upload your assignment **here**. Ensure the file extension is **.zip**.