Date Released: Sunday, October 5, 2025
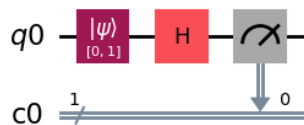
Due Date: Tuesday, October 7, 2025

Quantum Computing & Information Processing

Assignment - III

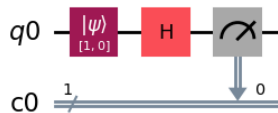
Task

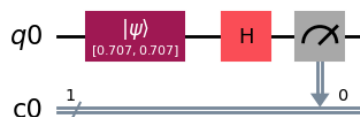Explore the behavior of a Hadamard gate on a single qubit with the following probability amplitudes:

- [0, 1]

- [1,0]

- $[1/\sqrt{2}, 1/\sqrt{2}]$

Hint: Use the circuit initialization; eg: **qc.initialize([1/sqrt(2), 1/sqrt(2)], q[0])**

How to upload your code

1. Format your code nicely.
2. Your full name should be added as a block comment in the code.
3. Upload your assignment **here**. Ensure the file extension is **.py**.