Introduction to Quantum Programming

22-23 February, *TEDU*

Schedule

The material prepared for the workshop consists of ***Jupyter notebooks***, and each notebook contains multiple tasks to be completed by the participants. We will use ***Python*** as the programming language and ***Qiskit*** as the main library to execute our quantum programs. Please don't forget to bring your laptop.

Saturday, February 22, 2020

09:00 - 09:30: Registration

09:30 - 10:00: Opening Talks

10:00 - 13:00: Review of probabilistic systems and introducing the matrix notation, quantum coin-flipping, Hadamard gate, quantum bits (qubits), quantum states and operators

13:00 - 14:00: Lunch break

14:00 - 14:45: Commercial aspects of quantum computing / QWorld and QTurkey Initiatives

14:30 - 18:00: Visualization of a qubit, multiple qubits, controlled operations, entanglement, superdense coding and quantum teleportation

18:00 - Social Night

Sunday, February 23, 2020

10:00 - 13:00: Rotations, reflections, rotation automata, implementing classical logic gates, Deutch's algorithm

13:00 - 14:00: Lunch break

14:00 - 17:00: Deutch-Jozsa algorithm, Berstein-Vazirani algorithm, Simon's algorithm, Grover's search algorithm (qualitatively)

17:00 - 17:30: Diploma ceremony and closing remarks

Location and Transportation

The workshop is going to take place at TED University Campus in Kolej/Ankara, at classroom G005. You can find the location marked by the red circle on the image below. It is just outside of the "**Kolej**" Ankaray station. There is no reserved parking space, but there is a car park just on the other side of the road - https://goo.gl/maps/qRseVijN7VrXZ8pbA.

Since the event is going to be held on the weekend, the front gate won't be open. Therefore, please note the location of the entrance door.