

## CMPT 409

### Assignment #1

**Due:** Tuesday, July 8<sup>th</sup>, 2021

**Submission:** To be emailed by the TA.

**Grading:** You will be heavily penalized for last-minute work.

**Format:** Five (5) page limit, double-sided including references, single spaced, using a professional 12-point font. Please do not ask for a word count limit – this is enough information. **THIS IS A GROUP PROJECT. Never mind any issue regarding group names.**

#### Task 1:

This should get you started by the following video:

[https://www.youtube.com/watch?v=8ORLN\\_KwAgs](https://www.youtube.com/watch?v=8ORLN_KwAgs)

#### Task 2:

Write a brief essay summarizing the key points of two maximally entangled qubits and how they can be utilized in quantum computing and quantum information theory, including their fundamental limitations. In particular, why can't the violation of the Principle of Locality be used for superluminal communication?

#### Task 3:

Write and execute a program based on quantum teleportation. Utilize the Qiskit reference emailed last week.

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