

QOSI
Summer 2020
Quantum Algorithms

The project aims to demonstrate classical vs quantum strategies in the CHSH game, which can be extended in understanding other algorithms.

Pre requisites

1. Linear algebra
2. Complex numbers

We will conduct 2 sessions every week to cover the basics before moving on to working on the project.

Session	Topic to be discussed	Material/Reference
1	Installing and setting up VSCode and the QDK	Install the Microsoft Quantum Development Kit (QDK) - Microsoft Quantum
2	Revisiting matrices and complex numbers	ComplexArithmetic LinearAlgebra
3	Basics of Q#, quantum computing concepts- the qubit, superposition, notation	The concept of a qubit
4	Single qubit gates	Single-qubit quantum gates BasicGatesKata
5	Multi qubit systems and gates	MultiQubitSystems Multi-qubit quantum gates
6	Understanding the CHSH game	The CHSH Game
7	Begin contributions	Repository