# Take home Exam #2

May 26, 2021

**Abstract**

This take home exam is due on Wednesday June 23. You should upload your work on Moodle. To present your work you should use a Jupyter notebook file. Projet can be turned back by group of two or three.

## 1 Choose your subject ( 13 points)!

Here are five subjects that we discussed or partially covered in recitation and or pratical session:

- CHSH game (Recitation 4)
- Teleportation protocol (Recitation 5 and pratical session 3)
- Grover's algorithm (Recitation 6 and Practical session 4)
- Quantum Fourier Transform (Recitation 6)
- Any other subjects of your choice (you can for instance look for something intersting in Qiskit tutorial)

Choose one of the subject and propose a nice presentation of what you have understood. In particular your presentation should contain:

- Some Qiskit codes and text to implement and explain the protocol and/or algorithm
- Some experimental results ran on the simulator and the IBM Quantum Experiment
- Something (original) of your own (example: a generalization of something not covered in class, a graphical representation of the results with some qiskit tools, something the user can execute when reading your work, etc...).

## 2 Present your work (7 points)

Make a short video (10min) presenting you work and results on this project. The video should be uploaded on Moodle with the Jupyter notebook by Wednesday June the 23rd.