Assignment Lecture 2
Quantum Fourier Transform

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Abstract

In this assignment you will implement a generic Quantum Fourier Transform

1 Introduction

Guidelines for this assignment:

- This exercise is done by a team of two students.
- The deadline for submitting the exercise is a week after the assignment is issued.
- You will create a Jupiter notebook for each exercise and hand in this notebook.
- In the notebook you will give ample comments on what you are doing and why.
- You will use Qiskit as a simulation tool.

2 Quantum Fourier Transform

2.1 Exercise 1

Together with this assignment a Jupiter notebook is published. In this notebook you find code to create a 3-qubit Quantum Fourier Transform. Use this code to make a generic Quantum Fourier Transform for n-qubits.

2.2 Exercise 2

Create a function for the inverse of QFT for n-qubits.

2.3   Exercise 3

Create a notebook which implements the Creating Entanglement pattern found at Quantum patterns.