



Sorting circuit
for Quantum
Computing

Presentation

Introduction

Objectives

Tools

Deliverables

Work
Breakdown

SWOT
Analysis

Learning
Curve

Sorting circuit for Quantum Computing

Presentation

National University Of
Computer And Emerging Sciences

4 Feburary 2020



Group Members

Sorting circuit
for Quantum
Computing

Presentation

Introduction

Objectives

Tools

Deliverables

Work
Breakdown

SWOT
Analysis

Learning
Curve

Supervisor: Dr. Omar Usman Khan

- Yousaf Khan 16P-6059
- Muhammad Hamza 16P-6068
- Izhar Ali 16P-6125



Table of Contents

Sorting circuit
for Quantum
Computing

Presentation

Introduction

Objectives

Tools

Deliverables

Work
Breakdown

SWOT
Analysis

Learning
Curve

➊ Introduction

➋ Objectives

➌ Tools

➍ Deliverables

➎ Work Breakdown

➏ SWOT Analysis

➐ Learning Curve



Introduction

Sorting circuit
for Quantum
Computing

Presentation

Introduction

Objectives

Tools

Deliverables

Work
Breakdown

SWOT
Analysis

Learning
Curve

Quantum Computer

- Quantum bits (Qbits)
- Quantum Computing
- Quantum Gates



Quantum Computer

Sorting circuit
for Quantum
Computing

Presentation

Introduction

Objectives

Tools

Deliverables

Work
Breakdown

SWOT
Analysis

Learning
Curve

- IBM Quantum Computer





Quantum Chip

Sorting circuit
for Quantum
Computing

Presentation

Introduction

Objectives

Tools

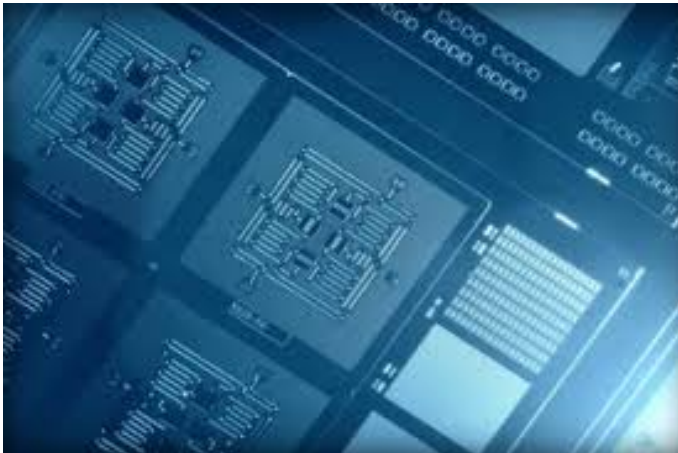
Deliverables

Work
Breakdown

SWOT
Analysis

Learning
Curve

- IBM Quantum Chip





Quantum Chip

Sorting circuit
for Quantum
Computing

Presentation

Introduction

Objectives

Tools

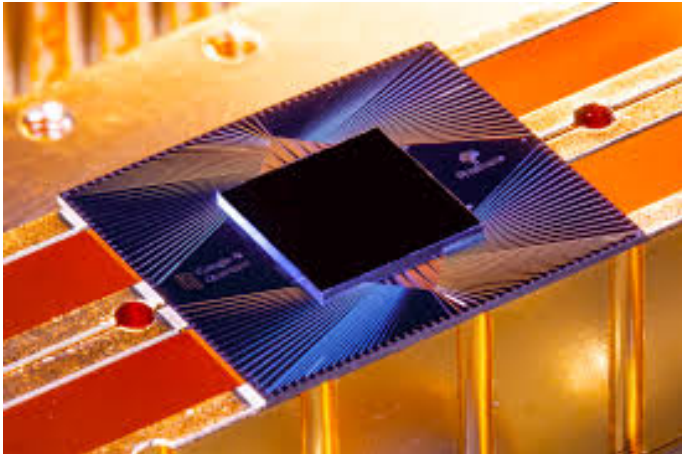
Deliverables

Work
Breakdown

SWOT
Analysis

Learning
Curve

- Google Quantum Chip





Quantum Bit

Sorting circuit
for Quantum
Computing

Presentation

Introduction

Objectives

Tools

Deliverables

Work
Breakdown

SWOT
Analysis

Learning
Curve

- What is Quantum bit?
- What is Qbit made off?
- Temperature
- Super Conductor



Quantum Computing

Sorting circuit
for Quantum
Computing

Presentation

Introduction

Objectives

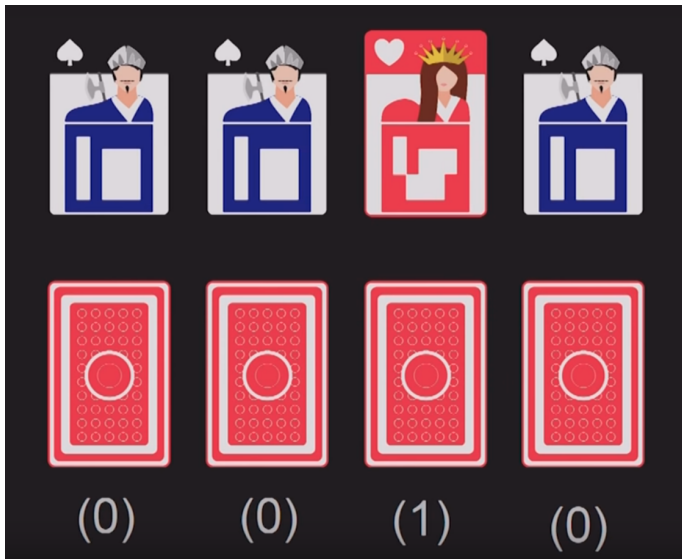
Tools

Deliverables

Work
Breakdown

SWOT
Analysis

Learning
Curve





Quantum Gates

Sorting circuit
for Quantum
Computing

Presentation

Introduction

Objectives

Tools

Deliverables

Work
Breakdown

SWOT
Analysis

Learning
Curve

- X Gate
- Hadamard Gate



Quantum Gate

Sorting circuit
for Quantum
Computing

Presentation

Introduction

Objectives

Tools

Deliverables

Work
Breakdown

SWOT
Analysis

Learning
Curve

• Quantum Workspace

IBM Quantum Experience

Save Clear OpenQASM Help

Untitled Experiment

Unsaved changes

Save your experiment before running it

Run

Composer help

The circuit composer is a tool that allows you to visually learn how to create quantum circuits. Here are some resources to get you started.

Composer guide

Gates glossary

Circuit composer

Gates

Barrier Operations Subroutines

q[0] |0>

q[1] |0>

q[2] |0>

q[3] |0>

q[4] |0>

c5



Objectives

Sorting circuit
for Quantum
Computing

Presentation

Introduction

Objectives

Tools

Deliverables

Work
Breakdown

SWOT
Analysis

Learning
Curve

- Understanding of Quantum programming Language
- Implementation of ANN
- IBM Quantum Computer Experince



Tools

Sorting circuit for Quantum Computing

Presentation

Introduction

Objectives

Tools

Deliverables

Work Breakdown

SWOT Analysis

Learning Curve

- IBMId
- Qiskit
- Python



Deliverables

Sorting circuit
for Quantum
Computing

Presentation

Introduction

Objectives

Tools

Deliverables

Work
Breakdown

SWOT
Analysis

Learning
Curve





Work Breakdown

Sorting circuit
for Quantum
Computing

Presentation

Introduction

Objectives

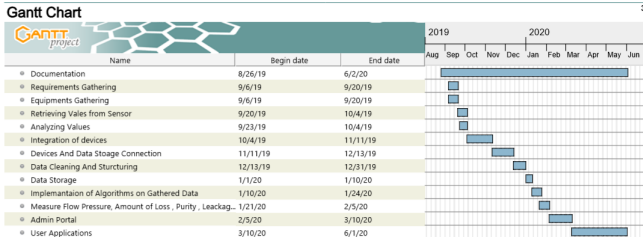
Tools

Deliverables

Work
Breakdown

SWOT
Analysis

Learning
Curve



Activati



SWOT Analysis

Sorting circuit
for Quantum
Computing

Presentation

Introduction

Objectives

Tools

Deliverables

Work
Breakdown

**SWOT
Analysis**

Learning
Curve

Strengths

- Fast Computing
- NP Problem



SWOT Analysis

Sorting circuit
for Quantum
Computing

Presentation

Introduction

Objectives

Tools

Deliverables

Work
Breakdown

**SWOT
Analysis**

Learning
Curve

Weaknesses

- Literature Limited
- Complicated



SWOT Analysis

Sorting circuit
for Quantum
Computing

Presentation

Introduction

Objectives

Tools

Deliverables

Work
Breakdown

**SWOT
Analysis**

Learning
Curve

Opportunities

- New Field
- New Opportunites
- Heading towards a new technology.



SWOT Analysis

Sorting circuit
for Quantum
Computing

Presentation

Introduction

Objectives

Tools

Deliverables

Work
Breakdown

**SWOT
Analysis**

Learning
Curve

Threats

- IBM Access



Learning Curve

Sorting circuit
for Quantum
Computing

Presentation

Introduction

Objectives

Tools

Deliverables

Work
Breakdown

SWOT
Analysis

Learning
Curve

- DLD
- AI



Sorting circuit
for Quantum
Computing

Presentation

Introduction

Objectives

Tools

Deliverables

Work
Breakdown

SWOT
Analysis

Learning
Curve

The End