

Quantum Mastermind

Gegham Zakaryan¹

¹American University of Armenia
¹College of Science and Engineering
¹CS339 - Quantum Computing

May 11, 2024

Abstract

This project is a quantum version of the classic game Master Mind played by two players. Given n different colors, the first player – the keeper, secretly forms a sequence of n colored pins, where several pins may share the same color or all of them may be of different colors. The task of the second player – the guesser, to disclose the hidden sequence with minimal guesses.

This project works with the following version (**version 2**): each guess is graded by the keeper with a single digit – the number of correct pins in their correct positions. The game stops when the grade of the most recent guess is n .

Contents

1	Introduction	2
2	Methods	2
3	Results	2
4	Conclusions	2
	References	2
A	Appendix: appendix	2

1 Introduction

2 Methods

3 Results

4 Conclusions

Acknowledgments

References

[1] Lvzhou Li, Jingquan Luo, and Yongzhen Xu. Playing mastermind on quantum computers, 2023.

A Appendix: appendix