

**PAF KARACHI INSTITUTE OF ECONOMICS AND TECHNOLOGY**

*Department of Software Engineering*

**PROJECT PROPOSAL**

**Embedded Systems**

**PROJECT TITLE:**

***Simon Memory Game***

**GROUP MEMBERS LIST:**

**M.Hamza (14394)**

**Asad Rasheed (14230)**

**Haseeb Ali (12998)**

**Submitted to**

**Course Instructor:** Sir Farhan Gafoor  **Lab Instructor:** Sir Rehan

**INTRODUCTION:**

Simon Memory game is based on short term memory skill. It is an electronic game that works by flashing LEDs and creating sounds to first memorize a sequence then press the corresponding buttons. It repeats the sequence by adding difficulties like speed and order of flashing LEDs. If you memorize the sequence and press the correct buttons you proceed to the next level and if you fail to press the correct buttons, the game is over. Some Simon Memory games are also based on time limits in which for a particular time you must complete all the levels and if the time runs out, the game is over. This type of can improve skills like enhancing memory and improving reaction time.

**OBJECTIVES:**

The objective of this Simon Memory game is to develop a challenging and interactive game using the concepts of both software and hardware. Using compact algorithms, level strategies and minimum hardware can give an interesting environment to play this game and improve many skills.

**COMPONENTS:**

The key components of the project are:

Breadboard

Arduino Uno

16x2 LCD display

I2C LCD module

Pushbuttons

LEDs

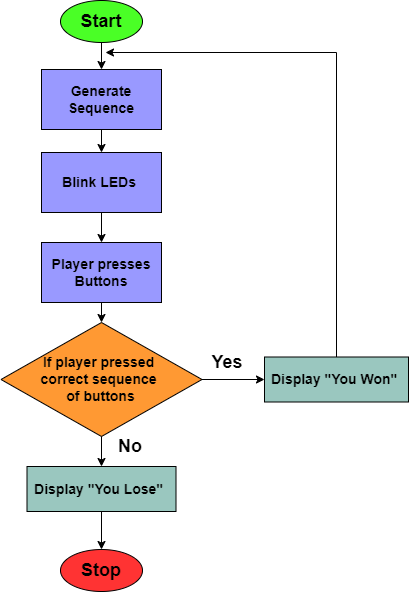
Buzzer

**WORKING:**

This game will be working on the following features:

1. Generate sequences which will increase complexity after each level.
2. Display LED patterns to memorize and then replicate to proceed to next level.
3. Pushbuttons for user interaction.
4. LCD showing the level and progression of the player.

**FLOWCHART:**

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