EMBEDDED SYSTEMS PROJECT PROPOSAL

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1) GAME RULES

In this project we will create the famous "Whac-A-Mole" game. The game is quite simple. There is a certain number of holes from which a mole can pop out at a random time. The user has a number of time-restricted attempts to hit the mole with the cursor before the mole gets back to its hole. After a successful hit, the user proceeds to a next stage. Every next stage the time a mole spends out of a hole is reduced.

2) I/O's

❖ Inputs:
   ➢ Keyboard:Main Menu & Score Interface
   ➢ Cursor:Used for hitting the mole
❖ Outputs:
   ➢ VGA Display
   ➢ Audio

3) Design Implementation

- ❖ Hardware
  - ➢ VGA 2D Graphic Display with RGB color effects
  - ➢ Mouse offers movement and 1-click "active high" button
  - ➢ Audio effects depending on the state of the game.(User hits or misses the mole)
  - ➢ Memory Implementation
- ❖ Software
  - ➢ Interrupt code for Mouse control
  - ➢ Code for mole's random movement
  - ➢ Main menu and Score Interface code
  - ➢ Successful or not hit of the mole
  - ➢ Audio Initiation and sequence
  - ➢ Basic data Analytics for keeping high scores

4) Milestones

Milestones will be similar to Labs 1-3.

- ❖ Milestone 1
  - ➢ Hardware implementation
- ❖ Milestone 2
  - ➢ Software implementation
- ❖ Milestone 3
  - ➢ Hardware & Software Interface