



## Cover page

Project title: claw machine

Academic Year: 2023/2024

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Department Name: Computer Engineering

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Project Type      Software      or      **Hardware**      (Choose one)

Supervisor Name: Dr. Luai Malhis

### Format:

- Single space, Times New Roman.
- 12 pt,
- Maximum 1 page.

### Abstract Body:

#### Items must be provided in the Abstract:

- Why do you think this project is important? Please explain the significance of this Project in brief.
- In your point of view what are the important aspects that should be covered in the project?
- Objective(s): In your view, please explain the main objectives of the project.
- Methodology: Give a brief outline of the application development process.
- Had this project been done before? Are there any similar applications available today?
- **Note:** Please deliver this abstract early to ensure that your Project has been approved by the department's projects committee. **Registration will not be done without this approval.**



## Project's Abstract:

A claw machine is an enjoyable type of vending machines, it can be found in arcade shops, malls and movie theatres, this machine could be considered as a challenge versus time, in this game a person can control how many minutes he wants to play and he wins the items he gripes in that specified time.

This machine gives the player the opportunity to play in one of these options, the first one is using joystick While the second one is from mobile phone web page and at last using hand gestures through camera and image processing.

This machine is divided into four parts: control, logic control, mechanics and playing area.

The logic control consists of Arduino mega as a main controller, three L298n motor drivers, esp8266 for mobile control, raspberry pi 3 for hand gestures control, SD card module for storing sounds and power supply for the system.

Control part consists of lcd for displaying game instructions and remain playing time, joystick to control the gripper position before gripping item, keypad to specify the time and choose the game control mode(A: joystick, B: mobile web page, C: hand gestures using camera), RFID for payment and start/catch button.

The mechanics part consists of gripper that carried by motor and rope which this motor can be moved through (x, y) plane and the gripper that tied with rope is the z axis, two stepper motors for x and y movements, stainless steel rods.

The playing area contains the items that the player can grip, speakers for sounds and RGB led strips.

