River Schenck

U.S. Citizen

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Objective:

- seeking computer engineering/electrical engineering internship

Education

▪ **Weber State University** – *Ogden, UT*

- Bachelor of Science in Computer Engineering
- Bachelor of Science in Electrical Engineering
- Anticipated Graduation (both degrees): Fall 2019

Projects

PONG 8051 Project January 2018 – May 2018

- Click the link for code, photos, and documentation.

1. Programmed functions in C and assembly language that made the old school pong game using Silicone Labs IDE. I interfaced the program with potentiometers for movement, buttons for start and stop, LED's for effects, and an LCD screen to display.
2. Used crystals in the 8051 for timers. These timers were used as interrupts to execute intricate functions.
3. The LCD display would display pixels 5X8. This made programming the paddles very difficult. I created a function draw_ball() which OR's the on screen with 8 bit shifted mask.
4. Avid researching of the 8051 microcontrollers was required. I used and studied datasheets for every component. With this information I could create schematics of the project. Many schematics were made for this project. After studying the datasheets further, I found ways to change the schematics and make it more efficient.

Maze Project March 2018 – April 2018

- Click the link for code.

1. Programmed a project to solve a maze. Used file reading and writing in C++ using Visual Studio. The program reads in a file, finds the start point then works its way to the finish.
2. I used recursion to navigate through the maze. It tries right, down, left, then right. If any are open it slides into that spot making a hardcopy of the maze replacing where it was with a V. If it is stuck, it returns to the previous level of recursion it was at and tries the next direction. It uses recursion until it finds the end.
3. Made a function that hard copies the maze of the in file to an array. This array is manipulated and searched through by the program. Another hard copy of the array is made to track where the program has been in the maze.

Iron Man Project June 2018 - Current

- Click the link for code and progress.

1. Designed a circuit that monitors the levels of hydrogen in the air. Interfaced an LCD screen to display the percent of hydrogen in the air and LED's to signal when hydrogen is over 90%. Wrote code in C++ (Visual Studio) to interface the devices.
2. Designed a dry cell HHO using electrolysis to break the bonds of H_2O into individual molecules. The molecules then run through a bubbler and into a tank.
3. Work that still needs to be done – put sensor inside of tank. When the tank is 90% hydrogen, a spark plug will trigger. The controlled explosion will go out of the front of the tank. This in theory will be like iron man's repulsers. This project is interesting because the fuel is water.

Emphasis Coursework

1. Embedded Systems

- Design and implementation of a microcontroller or microprocessor embedded system including assembly language programming, interfacing to peripherals, interrupt handling and debugging techniques.

1. Data Structures and Algorithms

- Principles of data structures and design of efficient algorithms. Emphasis on abstraction, efficiency, re-usable code, and object-oriented implementation.

2. Computer Architecture/Organization

- Explores the specific physical and functional characteristics of computer systems. Topics cover the architecture of the PC including BIOS, interrupts, addressing, memory management, types of disk drives (such as SCSI and EIDE), types of buses, video cards, modems, network cards, hardware compatibility issues, and number representations.

Work Experience

- Self Employed *South Weber, UT* September 2014 – February 2016
  - Videographer
    - Captured and edited raw footage to produce cinematic videos. Organized scheduling and management with clients. Click here for an example of my work.
- Sam's Club *Riverdale, UT* August 2015 – March 2016
  - Tire Technician
    - Evaluated motor vehicles condition to properly install new tires and batteries. Worked with customer service to make sure clients' needs were met.
- ES Solar *Layton, UT* March 2016 – May 2018
  - Solar Contractor
    - Draft and design houses with solar system and inverter placement in SketchUp. For examples click here. Also, interacted persuasively and professionally with potential clients. Implemented marketing and sales skills.

To look at my school projects visit this link: https://github.com/RiverSchenck/School-Work
To look at my personal projects visit this link: https://github.com/RiverSchenck/Development