**LAB 1**

**Nihaal Koyakunju Zaheer**

**Section 2**

**1. Old Computers**

1.1 MITS Altair 8800

* Input/Output – front Panel switches/ front panel LED
* RAM - 256 bytes - 64,000 bytes max
* 0.256Kb – 64kb
* 2048 bits – 512,000 bits
* CPU used – Intel 8080, 2.0 Mhz

1.2 MOS KIM-1

* Input/Output – On-board Hexadecimal Keyboard, 6 digital LED displays
* RAM – 1024 bytes
* 1.024 kb
* 8192 bits
* CPU used – MOS 6502, 1.0 Mhz

1.3 Apple 1

* Input/Output – Keyboard, Monochrome
* RAM – 4000 bytes – 64,000 bytes
* 4kb – 64kb
* 32000 bits – 512,000 bytes
* CPU used – MOS 6502, 1.0 Mhz

1.4 IBM Personal Computer (PC) 5150

* Input/Output – Keyboard/ monitor
* RAM – 16,000 256,000 bytes
* 256kb
* 2,048,000 bits
* Intel 8088, 4.77Mhz

1.5 Apple Macintosh

* Input/Output – Keyboard, Mouse/Monitor
* RAM – 128,000 bytes – 512,000 bytes
* 128kb – 512kb
* 1024000 bits – 4096,000 bits

**2. Base Conversion**

A notebook with writing

Description automatically generated with low confidence

A picture containing text, whiteboard

Description automatically generated

A picture containing text, whiteboard

Description automatically generated

A piece of paper with writing on it

Description automatically generated with medium confidence

**3. Exploration**

Kept flat on the surface facing up and so orange is at 1.

Kept flat facing down so orientation is negative and orange graph shows -1.

Kept pointing upwards, so orange shows a positive value of +1.

This graph represents the controller being moved back and forth horizontally.

This graph represents the controller being moved back and forth vertically.

1. Each column of data represents the orientation of the controller.
2. -t -g were the functions used to calibrate the controller’s orientation.
3. The y axis has the orientation while the y axis represents time.
4. **Joystick Calibration**

**Joystick Equation – x/128**

1. For the joystick the values are between -1, 1, 0, 2 & -2 and for some readings it showed values between -127 & 128.

2. Therefore adding both these values returns the midpoint (center point) to be 1 and not 0.

3. The center would not be 0 probably because the joystick has some margin of error.

4. For the center to be 0, you could re-calibrate the joystick.