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Engineering Notebook

Mechatronics Engineering 2023-2024

<Dusan Gutierrez>

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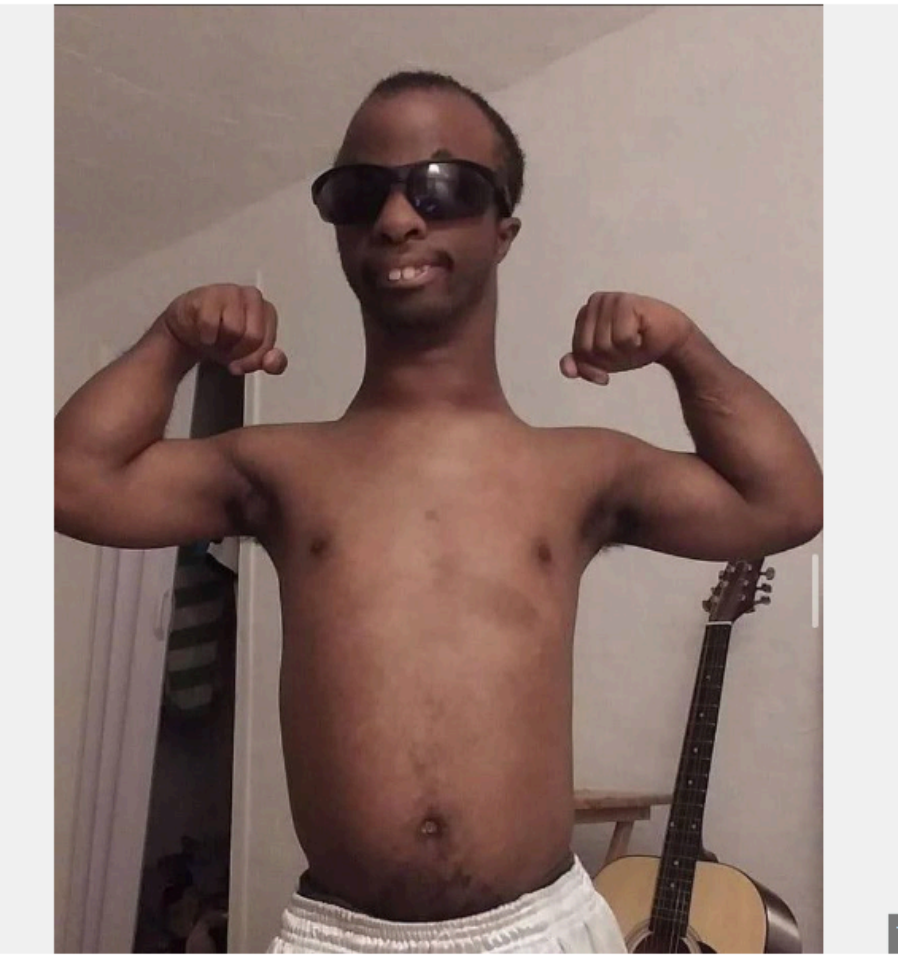
<LinkedIn - Optional>



Instructions:
For each day that you enter data into your Engineering Notebook, Copy this template text and table for each project entry. The difference between a Physical Engineering Notebook and this Notebook will be that your most current entry (i.e. Your newest entry) will be at the "top" like a blog… Check here for a Rubric

Sometimes you will see a comment from your teacher. Please read, and if it's a question, answer it.

Comment or Question from Mr. Burnham:

<copy text between these lines>

What Did I Working On Today (Labs, Robot Club, Other Projects):
Describe the steps/challenges you are working on. Make sure you describe how you set up the experiment, how you executed it, and all the materials you needed to do it. Spend time writing your "reflections". Sometimes more important than the actual results, are your thoughts on "why" and "how". Here is where you accurately describe both the success and failures.

If you make mistakes in the data collected, document the mistake and highlight it with a comment, so you don't lose the work. Don't just delete it. Where did you get stuck? A detailed description of issues you got stuck on or did not understand.

Include pictures, Code or links to Code, and links to reference material.

What Will I Work On Next Time?

- (fill this out at the end of class/open lab activity time)
- List your next 2-5 steps or activities.
- This is key!!!
- You need to be thinking about this project as a whole, and break it down into
- small tasks you can complete in 30-60 min

<copy text between these lines>

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<8/16/2023> <book >

I read destructipon and tiweas talking about how a man was making a weather machine inside his home and how it would be very weird how he used it

Planned Task List:

- The work that he gives us

Useful Reference Links:

- List any links related to today's work
-

Today's Class Notes: <enter class lecture notes here>

What Did I Working On Today (Labs, Robot Club, Other Projects):
Reading a book and the quizzes and learning about ohm
Include pictures, Code or links to Code, and links to reference material.

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Comment or Question from Mr. Burnham:

<copy text between these lines>

<8/16/2023> <talking about super power>

We were talking about our su[er power and jeremy chose mind reading by reading the mind waves of the othe rpeopelp

Planned Task List:

- Know how to defeat the power and how its good

Useful Reference Links:

- List any links related to today's work
-

Today's Class Notes: <enter class lecture notes here>

What Did I Working On Today (Labs, Robot Club, Other Projects):

Worked ont talking of the power and how it would be defeated and it would be defeated by using a helmet that deflects the sound waves
Include pictures, Code or links to Code, and links to reference material.

What Will I Work On Next Time?

- (next time ill talk a bit more

<8/18/23> <how to take a screen shot >

To take a screenshot you press windows key shift and s then you drag the screen shot how much you want to take a screeen shot of

Planned Task List:

- Take screen shot

Useful Reference Links:

- List any links related to today's work
-

Today's Class Notes: <enter class lecture notes here>

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Resistor #	Resistor value	Measure ohm	Measured volts	Measured i	Calculated i
Resistor 1	2.2	217.2 ohms	5.17v	23.9	0.2380295
Resistor 2	1k	997k ohms	5.17v	5.19	0.00000519
Resistor 3	150 k	149.6k ohms	5.18v	34.62	0.3462567
Resistor 4	220	217.7 ohms	5.17v	23.74	0.02374828

<copy text between these lines>

<Date> <Title - Daily/Weekly “Blog” Project Title - compelling, descriptive title>

Write a short paragraph of today's Project Goals…25 words

Planned Task List:

- List each
- Task you are trying
- To accomplish today

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Today's Class Notes: <enter class lecture notes here>

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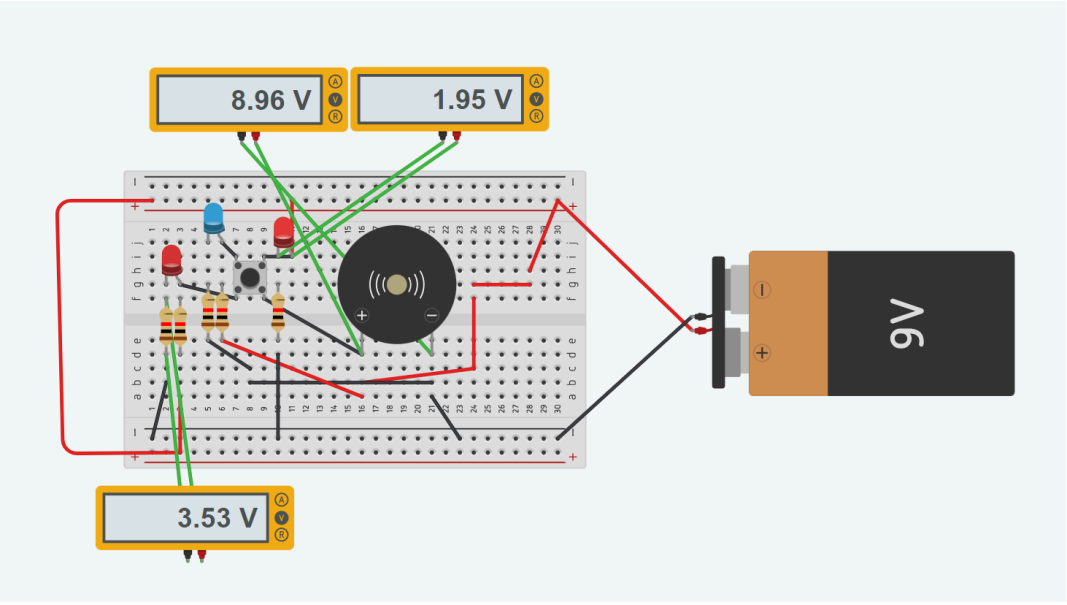


<8/23/23> <book reading #2>

I read a book about enlon musk and the way he came up with many of the important website and apps people use today

Planned Task List:

- reading
- soldering

Useful Reference Links:

- List any links related to today's work
-

Today's Class Notes: <enter class lecture notes here>

<8/24/23> <free time use>

In the free time i used the arduino and made more than one light turn on

Planned Task List:

- Use arduino sucesfully

Useful Reference Links:

- https://docs.google.com/presentation/d/1SjfshHCJDHYojFAzncog4GPSexbaJQqpv0iyKJbXvdw/edit#slide=id.gef8f50c690_0_66
  Slides helped showing how to do basic

Today's Class Notes: <enter class lecture notes here>

<8/25/23> <paper airplane >

We have to make a paper airplane to make it into a box or to make it go the loingest and more accurate **Planned Task List:**

- List each
- Task you are trying
- To accomplish today

Useful Reference Links:

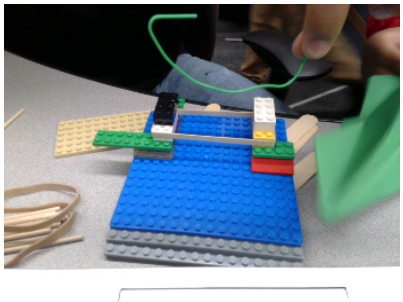
- List any links related to today's work
-

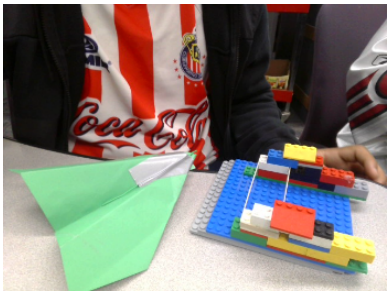
Today's Class Notes: <enter class lecture

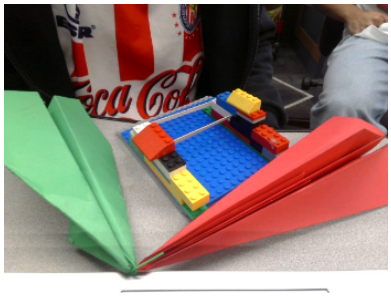
We made the airplane and it worked out but it did have some problems getting made like how to make it in general \
Day 2 we worked on improving the structure of the legos to support it more and give it more power and also fixing the airplane because it broke and tommeorow we will fix the clips and make it fly better

Day 3 we made another plane and it worked a bit more better than the other one but still wasnt that bad

Release day, didnt work at all. Failed







<8/29/23> <resistor lab >

We are supposed to see what the resistors volts and resistance is compared one to eachother

Planned Task List:

- Check resistors
-

Useful Reference Links:

- List any links related to today's work
-

Today's Class Notes: <enter class lecture notes here>
We checkeed the resistors and saw everything and the chartgesd

What Did I Working On Today (Labs, Robot Club, Other Projects)

circut	Measured R1	Measured R2	Measured RT	Calc R1+R2	Measured vt	Measured V1	Measured V2	Calc current vt+rt	Measured current
1	304.3k	300.2k	.604M	604.5	6.45V	3.225V	3.180V	7.054mA	7.10mA
2	.988k	.991k	1.980k	1.979k	5.19V	2.591V	2.598V	7.17mA	7.174mA
3	.555k	.555k	1.112k	1.11k	6.07V	3.037V	3.03V	7.182mA	7.21mA
4	304.3k	300.2k	.604k	604.5k	6.45	3.225V	3.180V	7.054mA	7.10mA

8/30/2023> <book >

I read elon musk and it basically just talked about his life and the early times and his inventions and how he made tesla and many more things

Planned Task List:

- The work that he gives us

Useful Reference Links:

- List any links related to today's work
-

Today's Class Notes:

What Did I Working On Today (Labs, Robot Club, Other Projects):
Reading the book so far and working later
Include pictures, Code or links to Code, and links to reference material.

What Will I Work On Next Time?
Talk more and learn more about the class

<9/6/2023> <book >

I read terrarian and the books is about a boy who went to fight zombies because they hurt a child and he wend to go see with his group what had caused the problem but the group all got killed and he was the only survivor he went back hokme and saw everyone there too had gotten killed

Planned Task List:

- The work that he gives us

Useful Reference Links:

- List any links related to today's work
-

Today's Class Notes: <enter class lecture notes here>

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Reading a book and the quizzes and learning about ohm
Include pictures, Code or links to Code, and links to reference material.

What Will I Work On Next Time?
Talk more and learn more about the class

<9/7/23> <3d design pictures of steps >

I was doing the steps of the 3d activity and it was actually very informative showing me the basic things of the app and how to move the blocks and duplicate them

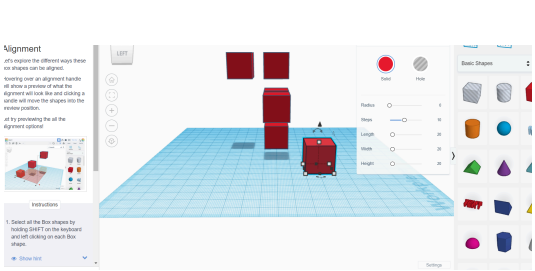
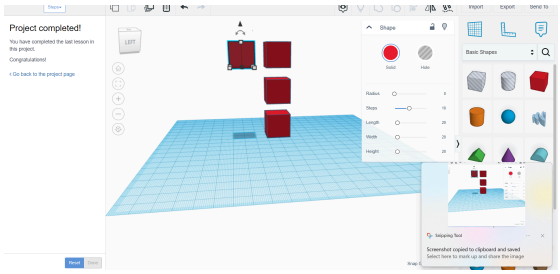
Planned Task List:

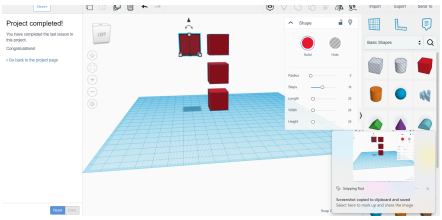
- Made the things like duplicate them and move them and hwo to chage the whole color and make it different

Useful Reference Links:

- List any links related to today's work
-

Today's Class Notes: <enter class lecture notes here>



<9/8/23> <Voltage divider circuits>

Write a short paragraph of today's Project Goals…25 words

Planned Task List:

- List each
- Task you are trying

- To accomplish today

Useful Reference Links:

- List any links related to today's work
-

Today's Class Notes: <enter class lecture notes here>

What Did I Working On Today (Labs, Robot Club, Other Projects):

circut	R1	R2	Calc R1+R2	CAL Vt	CALC it	CALC V1	CALC V2
1	330 ohm	680 ohm	1,010 ohms	5v	4.95mA	1.67V	3.36V
2	1k ohm	2k ohm	3k ohm	5v	1.66mA	1.660V	3.33
3	6800 ohm	1k ohm	7,800 ohm	5v	2.97mA		
4							

circut	R1	R2	Calc R1 R2	Given vt	Calc v1	Calc v2
1	330 ohm	680 ohm	1,010 ohm	5v	1.63	3.36
2	1k ohm	2k ohm	3k ohm	5v	1.66	3.33
3	680 ohm	1k ohm	1,680 ohm	5v	2,02	2.97
4	330 ohm	330 ohm	660 ohm	5v	0.5	2.5

circut	R1	R2	V1	V2
1	1K	2K	3.07	3.85
2	680	1k	2.093	3.07
3	330	680		2.093
4				

<9/11/23> <hoqw to use tool>

You press the button that allows the drill to start to move and then it starts to drill things on command

How to use tool
-make sure it had battery
-make sure it has a drill tip
-Choose direction of drill

-Make sure it has a screw
-Screw in the screw
Safety rules-
Keep vents open
Wear safety goggles
Keep drill bits sharp always
Keep all cords clear
https://www.youtube.com/watch?v=ltt-8SgSfwI https://www.youtube.com/watch?v=qK_qW-vEWfc

circut	Measured r1	Measured r2	Calc r1 r2	Measured vt	Measured v1	Picked v2	Measured current
1	299.2kohms	4.73kohms	303.93	5			

<9/12/23> <potentiometer >

Planned Task List:

- The work that he gives us

Useful Reference Links:

- List any links related to today's work
-

Today's Class Notes: <enter class lecture notes here>

circut	Measured v1	Measured v2	Measured vt	Calc R1	CALC R2
1	2.689	2.551	5.24V	1.006k ohm	0.541k ohm
2			5.24V		
3			5.24V		
4			5.24V		

<9/12/23> <quiz questions >

We made some question sbased off of the tool of choice which was a wrench

Planned Task List:

- The work that he gives us

Useful Reference Links:

- List any links related to today's work
-

Today's Class Notes: <enter class lecture notes here>

1 When using a wrench to tighten a bolt, what is the most important consideration for safety and efficiency?
A) The size of the wrench
B) The weight of the wrench
C) The color of the wrench
D) The length of your work breaks

2 Which type of wrench is best suited for loosening a rounded-off bolt head?
A) Adjustable wrench
B) Box-end wrench
C) Pipe wrench
D) Crowfoot wrench

3 What should you do if a wrench slips while applying force to a fastener?
A) Tighten your grip and continue
B) Curse loudly
C) Inspect the wrench for damage
D) Immediately apply more force

4 When using a torque wrench, what is its primary purpose?
A) To ensure fasteners are tightened to a specified torque
B) To measure the length of the bolt
C) To determine the weight of the tool
D) To count the number of turns during tightening

5 Which of the following is a safe practice when using a wrench to turn a fastener?
A) Keep your fingers close to the fastener
B) Apply maximum force from the start
C) Use an extension for added leverage
D) Work quickly to finish the task sooner

6 If you encounter a stubborn, rusted bolt while using a wrench, what is the best course of action?
A) Use penetrating oil to loosen the rust
B) Apply more force until it loosens
C) Hammer the wrench to break the rust
D) Replace the wrench with a larger one

7 When working in a confined space with limited movement, which type of wrench would be most suitable?
A) Adjustable wrench
B) Box-end wrench
C) Pipe wrench
D) Strap wrench
8 What is the primary function of a click-type torque wrench?
A) To emit a clicking sound when tightened enough
B) To measure the length of the fastener
C) To provide a visual display of torque applied
D) To measure the temperature of the workpiece

9 What should you do if you notice a wrench is damaged or has a loose handle while working?
A) Replace it immediately
B) Continue using it cautiously

C) Tighten the handle with pliers
D) Ignore the issue; it won't affect performance

1When storing wrenches in a toolbox, which method helps maintain their safety and organization?
A) Hang them on hooks
B) Toss them in randomly
C) Arrange them by color
D) Keep them in a pile at the bottom

Answers:

A) The size of the wrench
A) Adjustable wrench
A) Tighten your grip and continue
A) To ensure fasteners are tightened to a specified torque
A) Keep your fingers close to the fastener
A) Use penetrating oil to loosen the rust
A) Adjustable wrench
A) To emit a clicking sound when tightened enough
A) Replace it immediately
A) Hang them on hooks

<9/13/23> <book >

I read hamlet and it was interesting because of the words they say and how much they describe certain scenes but it is sorda slow pased and thats what makes it a little boring

Planned Task List:

- The work that he gives us

Useful Reference Links:

- List any links related to today's work

Circut	Derived V1	Pick V2	Measured Vt	Calc R2	Measured R2
1	2.697 volts	2.303 Volts	5.12 V		10.32k ohms
2	1.409 volts	3.591 volts	5.21V	8.68k ohms	8.68k ohms
3			5V		
4			5V		

<9/14/23> <code >

```
int my_analog_Value = 0;
int analog_0 = A0;

void setup()
```

```
  Serial.begin(9600);


  pinMode(analog_0, INPUT);


  my_analog_Value = analogRead(analog_0);
  Serial.println(my_analog_Value);
}

void loop()
{
  my_analog_Value = analogRead(analog_0);

  Serial.println(my_analog_Value);

  if (my_analog_Value > 1)
  {
    Serial.println("dig");
  }
}
```

<9/15/23> <arduino light sensor >

I read destructipon and tiweas talking about how a man was making a weather machine inside his home and how it would be very weird how he used it

Planned Task List:

- The work that he gives us

Useful Reference Links:

- List any links related to today's work
-

Today's Class Notes: <enter class lecture notes here>

Test	brightness	Selecter r1	Measured v2	Measured vT	Derived vp	calc I	Calc rp
1	Covered	10k ohms	4.23	5.07	.84		
2	Some light	10k ohms	1.393	5.07	3.67		

3	room	10k ohms	1.454	5.07	3.616		
4	brighter	10k ohms	1.694	5.07	3.376		
5	Full bright	10k ohms	2.984	5.07	2.086		

<9/18/23> <arduino while code>

```
var = 0



while var < 5:

    print("var:", var)

    var += 1
```

```
const int buttonPin = 2;
bool buttonPressed = false;

void setup() {
  pinMode(buttonPin, INPUT);
  Serial.begin(9600);
}

void loop() {
  while (!buttonPressed) {
    int buttonState = digitalRead(buttonPin);

    if (buttonState == HIGH) {
      buttonPressed = true;
      Serial.println("Button has been pressed!");
    }
```

<9/20/23> <book >

I read toreira and it was very interesting because of the adventure that theyre doing and they healed the main character with some random heart object that didnt make him die and its really adventerous thats why i liked it

Planned Task List:

- The work that he gives us

Useful Reference Links:

- List any links related to today's work

<8/20/2023> <what we did >

Today in the free time i sanded down my 3d prints and made them all smooth with the sanding machine. then started to work on my project with my partner we started to do the coding that makes out project start ticking down and How we would have to make it look and make it not seem dangerous

<9/21/23> <book >

I read hamlet again anad got a little bit more ahead and it was interesting because of the part that hes tricking his step father into seeing if he is guilty of murder and the plan is working. It was also interesting because he is confusing the whole castle with him acting like he is crazy over the kings daughter but he really is just doing it so they lower their expectations to think hes weak

Planned Task List:

- The work that he gives us

Useful Reference Links:

- List any links related to today's work

Hands on lab

WRENCH
Proper safety and protection

Eye protection (safety goggles of glasses), full face shields, cut- resistant or impact-resistant gloves, and safety shoes/boots are all forms of protection you can wear
Clean Before Using. Before using a wrench, take a minute or two to clean it.
#2) Don't Push
#3) keep away from Electricity. ...
#4) Don't Strike the wrench with hammers or mallets to tighten something
#5) Choose the Right Size

How to use

- adjust the movable jaws to fit
- always pull the handle towards the side with the adjustable jaw
- Use both hands on larger spanners and wrenches
- DO NOT attempt to increase the pulling leverage by adding an extension bar or pipe to the handle of any spanner or wrench.
- Pull on a wrench using a slow, steady pull
- do not use fast, jerky movements
- Stand aside when work is done with wrenches overhead
- Make sure adjustable wrenches do not slide open during use
    - To check for slide, put the wrench on the nut or bolt your going to tighten and then tighten it if it doesn't feel tight and secure you probably have the wrong size and run the risk of it sliding off

LAB

- Put on safety goggles to protect your eyes.
- Select one nut and bolt combination. Make sure they are of the same size.
- Use the ruler or measuring tape to measure the length of the wrench handle from the center of the bolt to the point where you will apply the bolt. Record this measurement.
- Attach the bolt securely to a stable surface, such as a workbench or a clamp.
- Using the wrench, attempt to tighten the nut onto the bolt. Try to make it as tight as possible while keeping track of the time it takes to tighten it. Use the stopwatch or timer to record the time in seconds.
- Repeat this process with the same nut and bolt combination three times, recording the time it takes to tighten the nut each time.

<8/21/2023> <what we did >

I basically just started to make a 3d print againa nd it started to print anothe key chain and i also worked on my project a little bit and tried to see how the sound sensor works and how it functions
https://docs.google.com/presentation/d/1K-aJxtsPJv8Aa9GZ_1QbhDu0spz0PB27q4-EFAZ9mGk/edit#slide=id.ga5fa60bb47_0_249

```
const int arduinoBoardLED = 13;
int delayTime = 100;

void setup()
{
  Serial.begin(9600);
  pinMode(arduinoBoardLED, OUTPUT);

}

void loop()
{
  for (int i = 3; i<100; i +=3)
  {
    digitalWrite(arduinoBoardLED, HIGH);
    delay(delayTime);
    digitalWrite(arduinoBoardLED, LOW);
    delay(delayTime);
    Serial.print("Blink i = ");
    Serial.println(i);
  }
  delay(3000);
}
```

<9/25/2023> <what we did >

We worked on our slides a bit in the start of the class then after we wrorked on some coding and seeing the way we can make the arduino count. And in the end we did free time and in the free time we worked on our project \

<9/27/23> <book >

I read tereria and in this chapter they went through the desert and they fought a bunch of monsters which they defeated and none of them died and they also just learned more about eachother swhile doing the voyage

```
// C++ code
//
#include <Adafruit_LiquidCrystal.h>

int seconds = 60;

Adafruit_LiquidCrystal lcd_1(0);

void setup()
{
  lcd_1.begin(16, 2);

  lcd_1.print("defuse bomb");
}

void loop()
{
  lcd_1.setCursor(0, 1);
  lcd_1.print(seconds);
  lcd_1.setBacklight(1);
  delay(500); // Wait for 500 millisecond(s)
  lcd_1.setBacklight(0);
  delay(500); // Wait for 500 millisecond(s)
  seconds -= 1;
}
```

<10/9/2023> <what we did >

I soldered the whole free time

<10/11/23> <book >

I read tereria and i chose it because its a comic book and its actually very interesting with hwo the events happen and how different they are

```
const int trigPin = 11;
const int echoPin = 12;

int var = 0;
int counter = 0;

// defines variables
long duration;
int distance;

void setup() {
  // UltraSonoc Pins
  pinMode(trigPin, OUTPUT); // Sets the trigPin as an Output
  pinMode(echoPin, INPUT); // Sets the echoPin as an Input

  // initialize digital pin LED_BUILTIN as an output.
  pinMode(LED_BUILTIN, OUTPUT);

  Serial.begin(9600); // Starts the serial communication
}

void loop() {
  // Clears the trigPin
  digitalWrite(trigPin, LOW);
  delayMicroseconds(2);

  // Sets the trigPin on HIGH state for 10 micro seconds
  digitalWrite(trigPin, HIGH);
  delayMicroseconds(10);
  digitalWrite(trigPin, LOW);

  // Reads the echoPin, returns the sound wave travel time in microseconds
  duration = pulseIn(echoPin, HIGH);

  // Calculating the distance
  distance = duration * 0.034 / 2;

  // Prints the distance on the Serial Monitor
  Serial.print("Distance: ");
  Serial.println(distance);
```

```
  // ---------------------------------------------------------

    if  (distance <= 10)
      {
      Serial.print("OBJECT IN THE WAY");
      Serial.println(distance);
      }

    if  (distance <= 10)
      {
      counter++;
      Serial.print("count: ");
      Serial.println(counter);

      }

delay(500);



}
```

Wildfire management needs infrared sensors. They help identify fires early by picking up on minute temperature variations, especially at night and in low light. These sensors give firefighters important information for monitoring fire behavior, making act quickly and efficiently to protect people and property from the horrible power of wildfires.

<10/16/2023> <article >

The israel war is affecting many things in the tech as it has many different attacks on the people and the technology that theyhave affecting the whole system that they have. Also the many people that are dying it can also effect them because of that and how they just lose poeple in their company in general.

Continuous improvements in data analytics, artificial intelligence, and sensor technologies will create the development of wildfire prevention and prediction systems. Real-time environmental data will be provided through the widespread deployment of IoT sensors, and AI-driven models will enhance prediction abilities. Public participation in data sharing and early warning systems will boost community involvement. Improved coordination, communication, and robotics and drone integration will increase the ability to respond quickly.

```
// C++ code
//
#include <Adafruit_LiquidCrystal.h>

int seconds = 60;

Adafruit_LiquidCrystal lcd_1(0);

void setup()
{
  lcd_1.begin(16, 2);

  lcd_1.print("defuse bomb");
}

void loop()
{
  lcd_1.setCursor(0, 1);
  lcd_1.print(seconds);
  lcd_1.setBacklight(1);
  delay(500); // Wait for 500 millisecond(s)
  lcd_1.setBacklight(0);
  delay(500); // Wait for 500 millisecond(s)
  seconds -= 1;
}
```

https://www.tinkercad.com/things/1zci2rjrfpV?sharecode=KWRF2enbaFhnqigM3RNPshu7IhYoPh9gORUJSDQ2LXk

As hyperspectral sensors and satellite and aerial imaging technologies advance further, it will become increasingly easier to collect precise information on crucial wildfire factors. With the help of these sophisticated sensors, fuel loads will be thoroughly understood, enabling more accurate assessment and control. They will also monitor the health of the vegetation, looking for signs of stress or dryness that could increase the risk of fire. In the continuous fight against wildfires, this high-resolution imaging will also help identify probable ignition sources, facilitating speedier preventative and response tactics.

<10/23/2023> <piezoelectric device>

A piezo device can convert electrical energy and make it into mechanical by the piezo electrical effects

```
#include "pitches.h"

// notes in the melody:
int melody[] = {

  NOTE_G1, NOTE_A1, NOTE_G1, NOTE_C1, NOTE_B1, NOTE_G1, NOTE_G1, NOTE_A1, NOTE_G1, NOTE_D1,
NOTE_C1, NOTE_G1, NOTE_G1, NOTE_G1, NOTE_E1, NOTE_C1, NOTE_C1, NOTE_B1, NOTE_A1, NOTE_F1,
NOTE_F1, NOTE_E1, NOTE_C1, NOTE_D1, NOTE_C1
};

// note durations: 4 = quarter note, 8 = eighth note, etc.:
int noteDurations[] = {

  8, 8, 8, 8, 8, 8, 8, 8, 8, 8, 8, 8, 8, 8, 8, 8, 8, 8, 8, 8, 8, 8, 8, 8,
};

void setup() {

  // iterate over the notes of the melody:

  for (int thisNote = 0; thisNote < 8; thisNote++) {

    // to calculate the note duration, take one second divided by the note type.

    //e.g. quarter note = 1000 / 4, eighth note = 1000/8, etc.

    int noteDuration = 1000 / noteDurations[thisNote];

    tone(8, melody[thisNote], noteDuration);

    // to distinguish the notes, set a minimum time between them.

    // the note's duration + 30% seems to work well:

    int pauseBetweenNotes = noteDuration * 1.30;

    delay(pauseBetweenNotes);

    // stop the tone playing:
```

```
    noTone(8);

  }
}

void loop() {

  // no need to repeat the melody.
}
```

tone() works by labeling the pin, setting the hertz value, and setting the duration of the beeping, the pitches.h file changes the pitch tone by initializing it.

1.) its interesting because i could play a whole song with this code

2.) i could make a whole song as a future project

3.) i could play around and make sounds to make soundtracks for a game

```
const int trigPin = 11;
const int echoPin = 12;


int var = 0;
int counter = 0;

int piezoPin = 8;

// defines variables
long duration;
int distance;
```

```
void setup() {
  // UltraSonoc Pins
  pinMode(trigPin, OUTPUT); // Sets the trigPin as an Output
  pinMode(echoPin, INPUT); // Sets the echoPin as an Input


  // initialize digital pin LED_BUILTIN as an output.
  pinMode(LED_BUILTIN, OUTPUT);


  Serial.begin(9600); // Starts the serial communication
}


void loop() {
  // Clears the trigPin
  digitalWrite(trigPin, LOW);
  delayMicroseconds(2);


  // Sets the trigPin on HIGH state for 10 micro seconds
  digitalWrite(trigPin, HIGH);
  delayMicroseconds(10);
  digitalWrite(trigPin, LOW);


  // Reads the echoPin, returns the sound wave travel time in microseconds
  duration = pulseIn(echoPin, HIGH);


  // Calculating the distance
  distance = duration * 0.034 / 2;

  // Prints the distance on the Serial Monitor
  Serial.print("Distance: ");
  Serial.println(distance);

  // ---------------------------------------------------------

    if  (distance <= 15)
      {
      Serial.print("OBJECT IN THE WAY");
      Serial.println(distance);
```

```
    }

  if (distance <= 15)
    {
    tone(piezoPin, 1000, 100);
    delay(1000);
    }

  if (distance <= 10)
    {
    tone(piezoPin, 1000, 200);
    delay(1000);
    }

  if (distance <= 6)
    {
    tone(piezoPin, 1100, 500);
    delay(1000);
    }

   if (distance <= 3)

    {
    tone(piezoPin, 1200, 1000);
    delay(1000);
    }

delay(100);


}
```

<11/1/23> <book >

I read who is henry ford and it basically just talked about his young life and how he got motivated t work on cars and how he was a boy genius and he knew many things at a very young age

<11/3/23> <art >

The article is talking about how in the whole month there will be different events with the solar system one being jupiter being on opposites of earth, meteor showers. Also the moon and jupiter being aligned together one day of the month.

<11/6/23> <article >

The article is talking about how people can translate the expressions of a cat to see how they feel and what theyre trying to say. For example if they move a certain whisker theyre going to be able to understand what that would mean also if they make a certain pose.

<11/7/23> <article >

a child type android. and the topic of the video is that androids are getting advanced with everything and theyre becoming more human with their characteristics and their actions. this technology might be useful in the way that they can help older people that need help with any necesities. i found this interesting because of how real it looks and how the motions are just like a humans. you should watch this video because it shows you the future technology of the world with robots.

https://youtu.be/2mRelJNLLto

the child robot

<11/8/23> <book

Who were the wright brothers was the book i read and it talks about everything in thei young life and how they created the airplane. Also how they invented the airplane in their backyard basically. Also how they impressed everyone

<11/13/23> <article >

With new climates there is different micro diseases coming out of the ground. Different sizes would bring different virus defenition and more danger to people. Many nucleaic acid and proteins are also coming out with the diseases that can cause major damage to peoples systems and health

```
int add(int a, int b) {
    return a + b;
}


void displayResult(int result) {
    std::cout << "The result is: " << result << std::endl;
}

int main() {
    int num1, num2, sum;


    std::cout << "Enter the first number: ";
    std::cin >> num1;

    std::cout << "Enter the second number: ";
    std::cin >> num2;

    sum = add(num1, num2);

    displayResult(sum);

    return 0;
}
```

<11/27/23> <article >

Microchips are being more advanced and with that the ability that they have is being more realistic when started and when launched.

<11/28/23> <article >

The video i watched is interesting because of how important it can be for the people to be able to have someone up there with them that could be a companion. With tha companion you can be much more less lonely and use it as an escape. With that escape it can help you through the time that youre up there in the mission

<11/28/23> <book >

The book talks about the early life of benjamin franklin and his achievements that he learned and made through his life. Talks about the invention of the lightning rod and things like that . also about his early life and how he was able to learn how to print because of his sibling who had a printing shop.

<12/01/23> <article >

The tesla cyber truck is going to be very powerful i the sense that ut will have the 3 versions with some different adjustments to them. With certains thighs being a adjusted the prices will begin to start to range from different prices. Also with so much horse power the amount of money will equal the amount of hp that it has and it goes hand to hand.

<12/04/23> <article >

This article talks about a chip that could fit on your fimger that is so small that you can make certain lasers that cna helpful. It can help detect certain things too with how much is getting put into it can help with things like prosthetics that can help you feel anything as if there were nerves in the prosthetic

<12/05/23> <article >

Space junk is major to the development that anyone has to go anywhere besides earth because of the debrees the debris causes the rockets to have critical damage once they would go into space. And if any malfunctions causing the spaceship to explode or anything then it would be worse. It just causes more problems for the astronauts and the engineers to do anything because of all the junk.

<12/07/23> <article >

They can start tl detect the chat gpt that is being used and is highlighted. But they also have a bunch of data that they take from you. With that they can take your info with everything that you have. Maybe by using someof the things that you agreed to in the terms and conditions.

<12/11/23> <article >

Theyre making transparent wood because of the less use of materials like wood and even tho its called wood they use different things like plastic to make it all work and function.

<12/15/23> <article >

Eye tracking is the main thing that can know what youre looking at and the computer will just know how to read what youre seeing and computing how to render it.

<1/9/24> <article >you can use both to be more exact and more info with the journalist but if you want genera info on some type of situation you can just ask the AI

<1/18/24> <article >

The article is about a meet where they come together and talk about certain things like chips,boards and system of a computer and its chips.there is a bunch of exhibits and shows that show zthe certain things of a chip and certain things of computers.

<1/19/24> <article >

When the ai got bad things in their coding they started to exploit it and use it to their advantage now the scientists are beginning to wonder if they should completely take that feature oiff the robot. As with that robot he can just do things and make it go to a big extent and make it worse than it is.

<1/22/24> <article >

They created a new design from the old one with the new one being 3d printed and more of a odd style of shape and of design. With this people were confused with the un ordinary design that the person was using being far from the usual and more abstract. Also with different materials the weight and shape of the racket might be easier to swing compared to the old fashion design that might seem like it was slower by the shape or any other aspect.

<1/23/24> <article >

theyre trying to make silicone a semi contdutor after many test and error showing that it isnt really compatible with humans and theyre doing it so that it can work with them. And now theyre changing the old and most common materials for it and making it more things like silk and then they see how they react to certain things in nature and with humans witht their reactions.

<1/25/24> <article >

The launvh of virgin galactics is going to start but its different from what they usually do as an airline theyre now going to space and starting on january 26 that its going to open up. And theyre going to stary and make a galactic voyage by then. They also are going to send 4 spacemen to the voyage with them and will go to a hight of about 45,000 feet up

<1/26/24> <article >

They give a lot of money to certain projects, also if certain projects that are winning or have winnin potential get a competition win you can get a certain amount of money. With this money pool that there is on the company then there

is a lot of interest from certain experts that would want money just to compete int their competition. Also with that the experts will flood with the certain cash pool that is there also.

<1/29/24> <article >

It gives more info to people about coding in general with something called 40 40 that they give more exposure to people under the age of 40. And about 40 applications are sent and only 40 get accepted from all around the world and there is only an acception to that amount for them to get accepted.

<1/29/24> <robot club project>

For our project club me and tony are going to make a escape room type game that once opening a suitcase it will activate with a light sensor and then it had a timer and as the timer tiks theres gonna be more challenges with certain time and having to use a number pad that you have to guess the numbers

The video was great, and I had the chance to experiment with the code and apply what I learned. Now, if I come across situations in my future projects where I need to use while loops or if statements, I believe I'll be more efficient and quicker in my coding. This lecture equipped me with valuable techniques that I can readily use whenever these coding tools are needed

The video was great! I got to experiment with the coding and put what I had learned into practice. I believe I can now write code more quickly and effectively if I ever need to use while loops or if statements in my future projects. I took away from the lecture some helpful insights that I can put to use the next time I require these coding skills.

<2/1/24> <article>

BMW is starting to use humanoid like robots that BMW argued that they would be dangerous unsafe and having tedious tasks. And other mode tedious tasks would be for humans, theyre going to be made into the companies slowly but surely with other companies. And many people are concerned about the insurance in case anything does happen to them which the workers dont have and they re pleading for

<2/2/24> <article>

AI is predicting the amount of people that can get alzheimers and how they do it is with certain scans that can detect certain things in your brain. With that they see the differences and they compare them to a normal person. Also with tests and depending on the score that you would get on a test it would show the amount og it that you have the alzheimers.

<2/6/24> <article>

The batteries on a electrical car are being more thermal monitored and seeing what different type of batteries react to different type of things to see how they run with the vehicles. They are currently trying tape on the batteries to see how

they work with it and it is gfoing well as they beat the heat that they transmit but they also noticed that they cant take it as much as they could before with the tape. With the new tape that theyre using called Ttape and with that it made it so that it can take more heat.

<2/8/24> <article>

There is new technology that is trying to make medicine off the research that nasa is making and seeing if it was possible to get new rewatch for medicine and increasing new and more efficient fuel size to more new things like more durable breaks

<2/8/24> <tech challenge cosmic quest>

We decided the idea and it is a wheel with bands that will shoot the ball with enough power to reach the area

<2/12/24> <article>

The citieds are developing and Eco-cities' dynamics have been gradually changing since the mid-2010s due to the increasing impact of data-driven technologies and solutions in smart cities. This change is in line with a more intelligent strategy for environmental sustainability, which is defined by the fusion of key eco-city domains with smart city domains.

<2/12/24> <article>

Today i did all my work and then i started working on my robot club project

<2/13/24> <article>

The article talks about how companies like meta from facebook and epic games that has games like fortnite still havent made the metaverse and the answer is actually very simple talking about how they just need a little bit of work for and they focus more on getting more people in their game then anything else t

<2/15/24> <guest speaker and what i did earlier>

In the free time all iwas doing was catching up on the assignments that i had missing because there were sorda a lot but i finished them before the guest speaker came into the room

<2/16/24> <article>

The article i read talked abou the way that chat gpt is going to be able to remember the things you ask it to compute and keep iy in their system as wehen they tested it they had some type of memory to the things you would ask it and keep it in the system. And with that theyre going to be able to respond more logically and with better more relevant responses. In class today i caught up with all my assignments that i had missing and made sure i finished them all

<2/26/24> <article>

This article talks about teslas new robot and how it is starting to walk around their workshop and how it looks with its new and more fresh look that it has compared to the old videos of it. Also saying that the robots could be sent to people as early as next year to their homes and with time it is set to remove some of the dangers that it has. Also eliminating the way people have to do repetitive tasks with the robot. Elon musk is expectibnf the robots to be able to thread a needle by next year and i could cost up to 20.000 dollars.

<2/26/24> <free time>

In free time i started soldering some wires for me and anthionys robot club project to make them loineger tyo make the parts connect with eachother and make it work more simple with less clutter everywhere in the box

<2/29/24> <article>

In the article it talks about a basketball without air and how it can change the sport entirely but for right now its not really reliable because its used more like a social media stunt for fame instead of a game type of ball. The ball is also really expensive compared to a normal ball being 2,500 dollars and really isnt worth the price for a airless ball. Nm

<3/4/24> <article>

In this article it talks about how you cant buy drones and certain things of droned from some countries because of restrictions that they have. One of the many reasons is because they can send vital information to other different countries and it could leak all of it with some things the drones have in them. As some of the government have seen this before as they have leaked information before and they see how it effected certain companies with the leaks that happened.

<3/5/24> <interesting technology>

The vision pros are something i saw recently and it was just surprising because its very different as its more oigf a portable vr headset that you can do multiple things with. The person was moving their hands around im guewssing fixing the things that he had on the screen but they were messing with the vision pro basically.

<3/6/24> <book>

The book i read is a romance novel talking about a girls life and how her mother treats her very bad as she wants everything to revolve around her and the daughter wants to change the ways of the family. With that the mom makes decisions that are very rash like not allowing her to go out with a boy and tells her that he can rather date another one of her daughters instead of that one and the girl gets mad. Really the book is just the mother msaking everything go with her wishes.

<3/7/24> <article>

In this article is talks about how reliable the apple vision pros are with their repairment and its a pretty bad hassle with all of the components that it has trying to disassemble it but also it has to be different because of how new it is knowing there isnt much extra for people to be re using it and changing the lace plate as an example. Also how not many of them would be used just to give up and be used as a spare just for a new set.

<3/8/24> <article>

In this article it talks about hwo charging your phone over night dosent really mess up your battery because of the limit your phone has that makes it that it charges slower so you can leave it over night as it will slow the charging process and then make it easier for yourself to charge.

<3/11/24> <article>

This article talks about the bias there is when applying for a job and it has been shown with studies that with more diverse people the job acceptance rate is a lot lower. Also very bias towards men and less women have been accepted to the job and it just goes to show that many of the jobs just go off many non diverse people to get the job.

<3/12/24> <article>

This article talks about the testing on animals to see if a product is safe also to see if they have any negative effects to the animals or if it just kills them in general and theyre seeing if they still have to do that with a person. Seeing if irritation to the person was a thing or if any type of bad side effect happens to them.

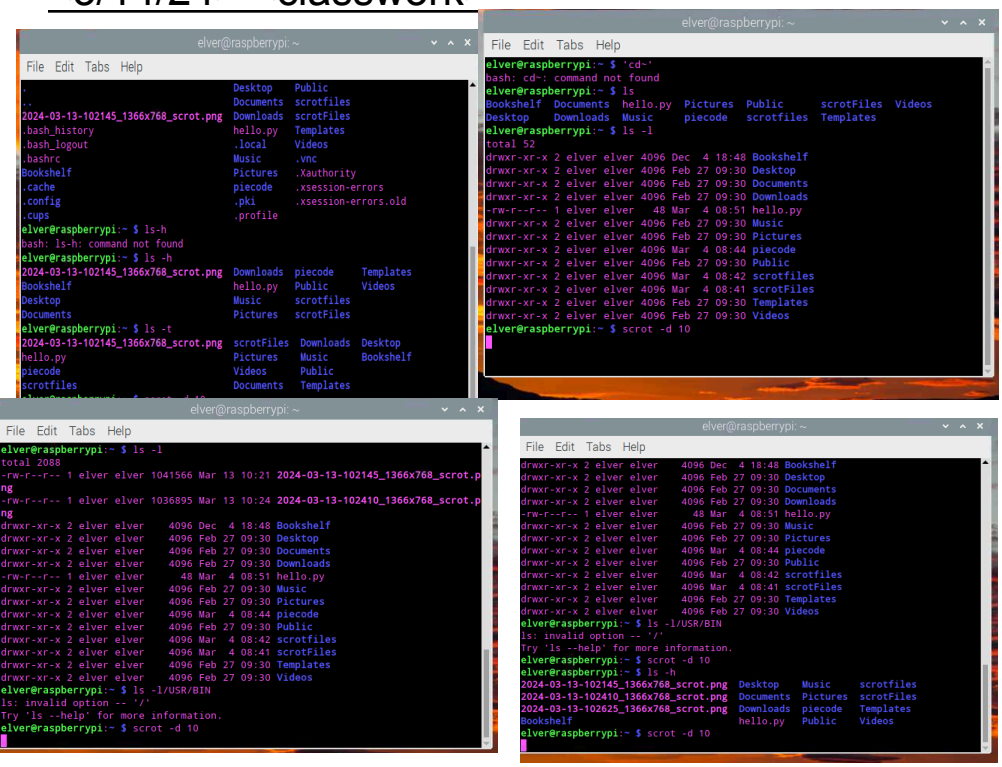
<3/12/24> <open lab>

We started mapping out the whole box and how the layers would be able to stack with eachother without it breaking or it causing any damage to the other layers of the gane

<3/13/24> <open lab>

I was catching up on missing assignments that i hadnt done and co

<3/14/24> <classwork>



<3/14/24> <free time>

In the free time i finished all the missing assignments and then started working on my robot club

<3/15/24> <article-opinion>

In the article i read about the rocket launch and how it really went weird but learned alot with many of the things that they did as the plasma shields were getting really hot and they effected the rocket majorly with the lkaunvh also with the indian ocean crash it hurt the world more too because of all the trash too.

<3/18/24> <article>

Health technology can be very important for the people in space because of the many hardships that happen while in space like the delay in communication that can deeply effect a persons mental health as to reley a message they have to wait a longer more extended time. They also have to change the way that they have to do certain things as on earth it will be different then in space

<3/19/24> <article>

I didnt know how to solve the math problem and for the article i feel like theres many ways to do that to fix that specific situation

<3/19/24> <free time>

I was trying to code the keypad on tinkerkad making a password for it while making it show on an lcd

<3/20/24> <book>

In the book i read this one girl is seeing her mothers ghost and it keeps haiunting her intil she told her that he hated her so it began to disappear.

<3/20/24> <free time>

I finished the lcd keypad with as password and start

<3/21/24> <article>

In the article we read how there are different types of landscaping abilities connected with the new area of the market which is like a home security system but with this its more advanced from different areas connected with the different wifi systems.

<3/21/24> <freee time>

I didnt really understand the assignments but i took my time and did they all in the free time and i also fixed the keypad for my project and made it so the numbers get kept onto a record so people can see what numbers theyve put in if they get it incorrect.

<3/22/24> <article>

In this article it talks about the new inventions of doordash being available through drone and not through someone driving and it would seem more viable as only wendys is only going to try it for now but i see it as a good idea because of the less use of gas

<3/25/24> <article>

In the article i read it talksabout the nrutalink and how it is able to make monkeys see even if their vision is obscure and how it can also help them with regaining their vision if they had lost it. Also talking about how a paraplegic person is able to play video games when they implanted them with the chip making it easier and more efficient.

<3/27/24> <book>

Today i read a book called ;like chocolate for water and it is about a girl who is forced to take care of her mother for the rest of her life just because shes the youngest and shes a women. But as the story progresses she discovers that she can also do other things without her mother knwoung like falling in love and other activities too that swont gwt the mother mad.

<4/08/24> <article>

This article talks about the different chips and how they help develop new things for the military such as technology for 3d printing and how it helps make new things they need for the military. It also shows how layer through layer they change the new technology.

<4/09/24> <article>

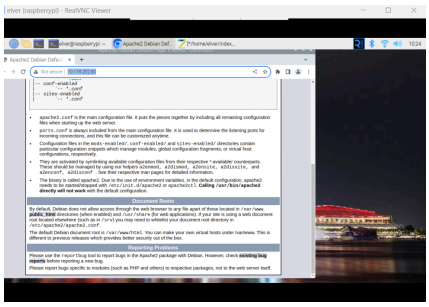
In this article it talks about how theyre gong to recycle the eclipse glasses for next years so they wont just go to waste. As you can send them the glasses so they can keep or you just keep them for later usage as many say that those glasses are very important

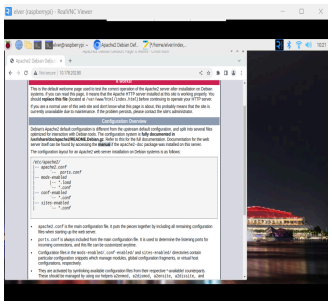
<4/15/24> <article>

In this article it talks about how many company workers of open ai have leaked much important information that has made competitors and others prosper from it. They caught 2 of the msny people that were leaking that information and have been fired showing that theyre cracking down on the security and taking consequences for their actions.

<4/16/24> <article>

Robots are going to be a amajor point of the future as they will probably begin to stary doing everything beginning with jobs as they will probably take over the simple jobs that people have like a server or even a cashier. As it ewould be more beneficial to the employer as they use less money to make a robot do the jobs instead of paying wages for an actual person. It will also cause isolation in certain areas for the people that are against it that wont be able to like the idea of having robots there.





<4/17/24> <article>

My book is talking about the banned books in the world and how many people dont have the privilege to read books in certain areas because of the banning of them.

<4/17/24> <article>

This article talks about sweden becoming the 38th country to become a nasa accomplice that can explore the moon and explore whatever is other people havent explored.

<4/18/24> <article>

Ai is advancing alot with everyo ne and theyre all competing to get to the best

```
rbg = rgb.upper()
if hardware_test_messages : print("rgb = ",rgb)

my_color_disc = ("RED":"FF:00:00"."GREEN":"00:FF:00","BLUE":"00:00:FF"
            for color in my_color_disc:
            print(color)
            if color == rgb:
            print(my_color_disc{rgb})

return rgb

def rgbWrite(r,g,b)
            REDRGB.Changedutycycle(r)
            GREENRGB.changedutycycle(g)
            BLUERGB.changeddutycycle(b)
            if hardware_test_message :print("red =" r
```

<4/23/24> <article>

In the article it talks about how everything is changing with the advancements of engendered technologyand making it so that not many workers have jobs because of the robot wave of workers that are taking the jobs from people. Also about 72% of the workers are now pure robots making it so that the majority is now not human and people losing jobs

https://skribbl.io/?CoCUkip0

<4/30/24> <article>

The military's development of a material that renders individuals invisible to infrared sensors marks a significant advancement in stealth technology. This breakthrough grants them a substantial advantage by allowing for undetectable movement and operations, enhancing their tactical capabilities in various environments. Such innovation showcases the continuous evolution and sophistication of modern warfare strategies.