Engineering Design Notebook

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Project Title Drone Buddy

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Rules for Keeping an Engineering Design Notebook

1. On the front of the notebook enter the project title, your name and other information needed to return the notebook to you in case it is lost.
2. Keep a table of contents at the front of the notebook.
3. All entries must be done in ink.
4. Design notebooks do not have to be neat but they must be legible.
   a. Do not be obsessed with neatness at the expense of faithfully recording everything as it happens.
   b. Do not crowd the materials on the pages.
5. Make your entries at the time you do the work.
   a. Include all results and learned information whether favorable or unfavorable.
   b. Include all information even if you do not fully understand it at the time of entry.
6. If you make errors, just cross them out with an X or a single line.
   a. Do not mark through anything so that it can not be read.
7. Do not erase anything.
8. Never tear a page out of the notebook.
9. All data must be in their original form (calculations, charts, pictures, sketches on scrap paper, etc.), not after recalculation or transformation.
10. Rough drawings should be done directly in the notebook. More careful drawings such as machine drawings or computer-generated plots should be made and entered in the book.
11. Information on loose sheets of paper should be entered into the notebook by:
    a. Taping the loose paper to the next available blank page in the notebook
    b. Taping each corner of the loose paper
    c. Use a tape that will accept ink permanently
    d. Place your signature on the loose paper, continue across the tape and end on the design notebook page. Sign across each corner of the taped pare. Date the signature.
12. Information that can be retrieved easily (such as research articles from journals) should not be entered into the notebook. Enter only the needed information and the location and the location of the information in case you must retrieve it again.
13. Title each page of the notebook and enter the information on the Table of Contents.
14. Sign and date the notebook page at the space provided at the bottom.
15. Have your design entries witnessed and have the witness sign and date at the space provided.
    a. The witness needs to have the technical ability to understand the entry.
    b. The work can be witnessed periodically.
16. Every page of the notebook must be numbered.
17. No pages should be skilled. This is a chronological record of your work.

A good engineering design notebook is one that can be used to reconstruct your work even years after you have completed the original project. Other engineers should be able to use the notebook to reconstruct your work. The notebook will be used to determine the rightful owner of patents and other proprietary ideas.

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Title of Activity   First Meeting

Title of Project   Drone Buddy

Jerrin → EE
Me → CompE
Zach → ~~CompE~~ EE
Harsh → compE

design a drone
↳ follows user around
↳ can alert authorities if necessary

Winessed and Understood by _seibaraha Liya_   Date 11/25/2020

Recorded by _George Dewaraho_   Date 2/12/2020

Title of Activity TRP

Title of Project ~~ ~~ Drone Buddy

Dr. Jennifer Hasler will be our advisor

→ Currently nothing too prevelant about surveillance drones

→ some semi → autonomous drones
↳ google/amazon

To Do → Technical Review Paper

Winessed and Understood by _seibarcsha Suga_ Date 11/25/2020

Recorded by _teluye Srmonsleos_ Date 2/24/20

Title of Activity   Brainstorming

Title of Project   Drone Buddy

→ Possible drone features

⤷ Can we implement AI to detect dogs

⤷ lights / sound

⤷ ai to follow people with motion

camera & sonar?

⤷ might be easier ✗

no the motors make it too complicated

AI would need to be done with motion tracking from camera

Winessed and Understood by   seibacsha Singe   Date 11/25/2020

Recorded by   Grasy Saunders   Date 3/1/2020

Title of Activity   Dr. Hassler Meeting 1

Title of Project   Drone Buddy

Met with Dr. Hassler
→ she seemed nice
→ financial concerns !!!
→ can we find the cheapest option / is it cheap enough

how much will the drone weigh, will it
work for a long enough time so
that it can fly from a charging station
and ~~not~~ to the student and back

↳ trouble picking up signals?

Internet access

Skills Matrix
↳ I can possibly do some of
the code modification
for the drone due to my
control systems class

→ most likely will have drone
that mostly flies on its own
just some code modifications

Witnessed and Understood by _____ seharosha lingo _____   Date 11/25/2020

Recorded by _____   Date 3/6/2020

Title of Activity Timeline

Title of Project Drone Buddy

We will need → Drone

→ Database → footage

→ Server → need to be able
to witness drone

→ App → student will interface
with the app

can be done seperately

~~Drone~~

Research → Drone Components → testing

App

Server ⟶ testing

Database

Winessed and Understood by _seiharesha luya_   Date 11/25/2020

Recorded by _George Demmeos_   Date 4/1/2020

Title of Activity Bill of Materials

Title of Project Drone Buddy

☆ Not Final list

→ cheap flight controller more work than expensive one

total is over initial budget @ that Dr. Hassler Brought us

Winessed and Understood by _seibersha Singa_   Date 11/25/2020

Recorded by _George Sunnaker_   Date 4/11/20

Title of Activity _Project Proposal_

Title of Project _Drone Buddy_

→ in charge of
  ↳ introduction
  ↳ engineering analysis & experiment

Intro → semi autonomous drone to be used for security & surveillance

Objective create a safer environment where students feel more comfortable easier access to students

Motivation → crime rates are going up Surveillance decreases them

Background → ⬛ some limited use

Initial Metrics Testing
  ↳ make sure it flies
  ↳ make sure it's close enough to person

Winessed and Understood by _seibacsha Sirga_   Date 11/25/2020

Recorded by _Serge Sunados_   Date 4/17/20

Title of Activity Meeting for Semester 2

Title of Project Drone Buddy

- TO DO → ~~Project~~ Presentation
  proposal
  → will be given to Dr. Hassler
  need by next week

need to split up slides

No Danger Sensing AI
Cheaper flight controller
  we are around $800 over
  budget

if we do a good job w/ the proposal
we might be alright

Proposal → talk about parts, why
  you need it, how we'll get it
done

Winessed and Understood by _seibarsha Suya_ Date 11/25/2020

Recorded by _(signature)_ Date 5/19/20

Title of Activity _Meeting with Dr. Hasser 2_

Title of Project _Drone Buddy_

Presentation
- needs to be shorter, but with more detail?
- Condense slides
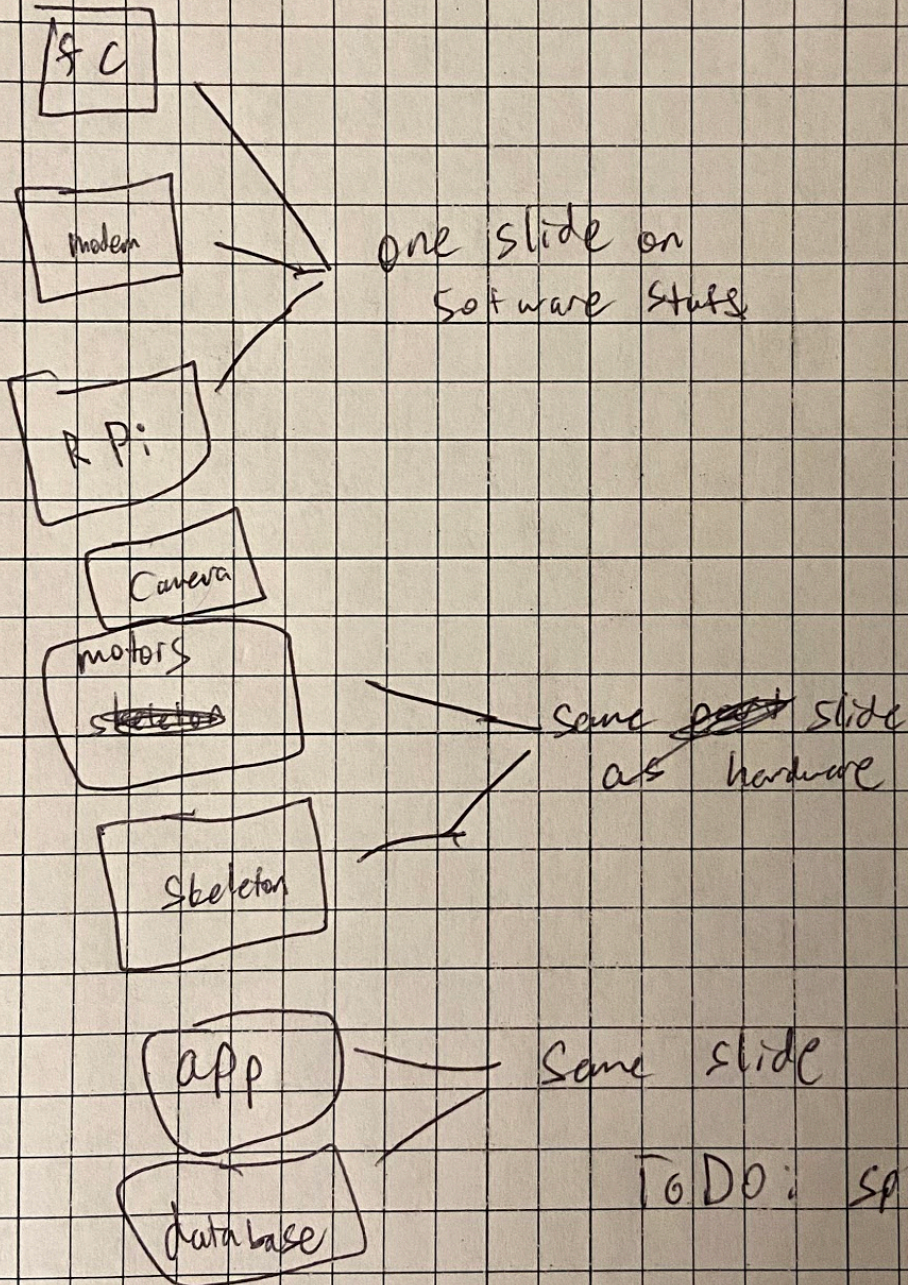
$C

Modem ⟶ one slide on
software stuff

R Pi

Camera
motors
~~sensors~~ ⟶ Same ~~part~~ slide
as hardware

Skeleton

app ⟶ Same slide

database

ToDO: split up presentation

Winessed and Understood by _seibachta Suya_ Date 11/25/2020

Recorded by _George Demanicos_ Date 8/31/20

Title of Activity _Proposal Project Recording_

Title of Project _Drone Buddy_

→ Intro ⎫
→ Surveillance ⎬ My responsibilities
→ App ⎭

Winessed and Understood by _seibarasha Singa_   Date 11/25/2020

Recorded by _brang Jacailas_   Date 9/16/20

Title of Activity _Ordering Parts_

Title of Project _Drone Buddy_

- Atlante orders set → Jerrin

- Harsh will get ~~something~~ some parts to test his code

- need to keep list
  ↳ on Google Drive !!!

Winessed and Understood by _sebacsha Suga_   Date _11/25/2020_

Recorded by _Suga Fernandes_   Date _9/22/20_

Title of Activity Drone Building Meeting

Title of Project Drone Buddy

First time in person for months

ECE 357
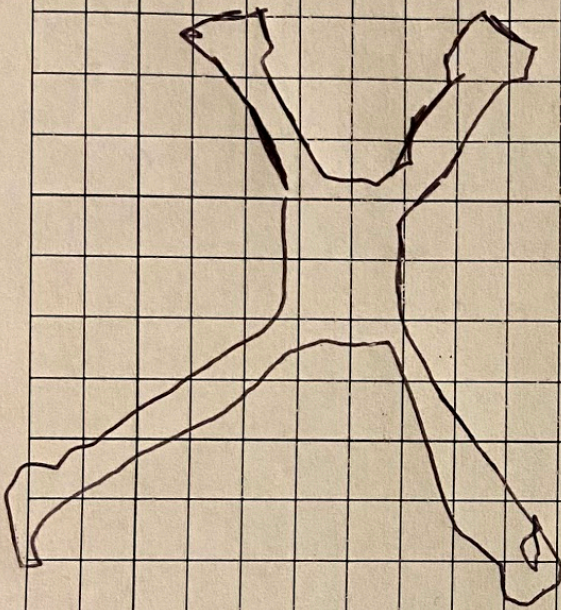
I assembled the skeleton

Zach was soldering the flight controller

→ busted ~~speed~~ speed controller
↳ did not fit

→ might need to fix

Raspberry pi too
↳ camera not compatible

Winessed and Understood by _seibacsha Suga_   Date 11/25/2020

Recorded by _Zoye Immakos_   Date 10/10/2020

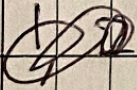**Title of Activity** Finish Soldering

Title of Project Drone Buddy

three wires from speed controler to each motor.
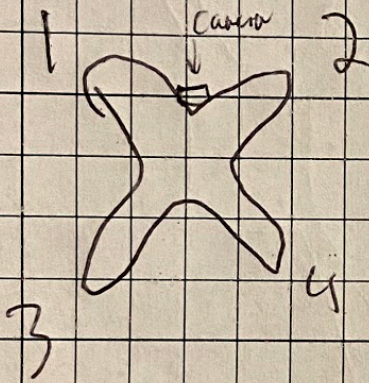
→ cannot construe the main one

other 2 if flipped that is okay test programming to see which way they turn

1 ✓
2 ✓
3 X → need to change code (easy fix)
4 ✓

Winessed and Understood by _seibecha Suze_ Date _11/25/2020_

Recorded by _George Durcanakou_ Date _10/17/2020_

Title of Activity 3D printing Camera Mount
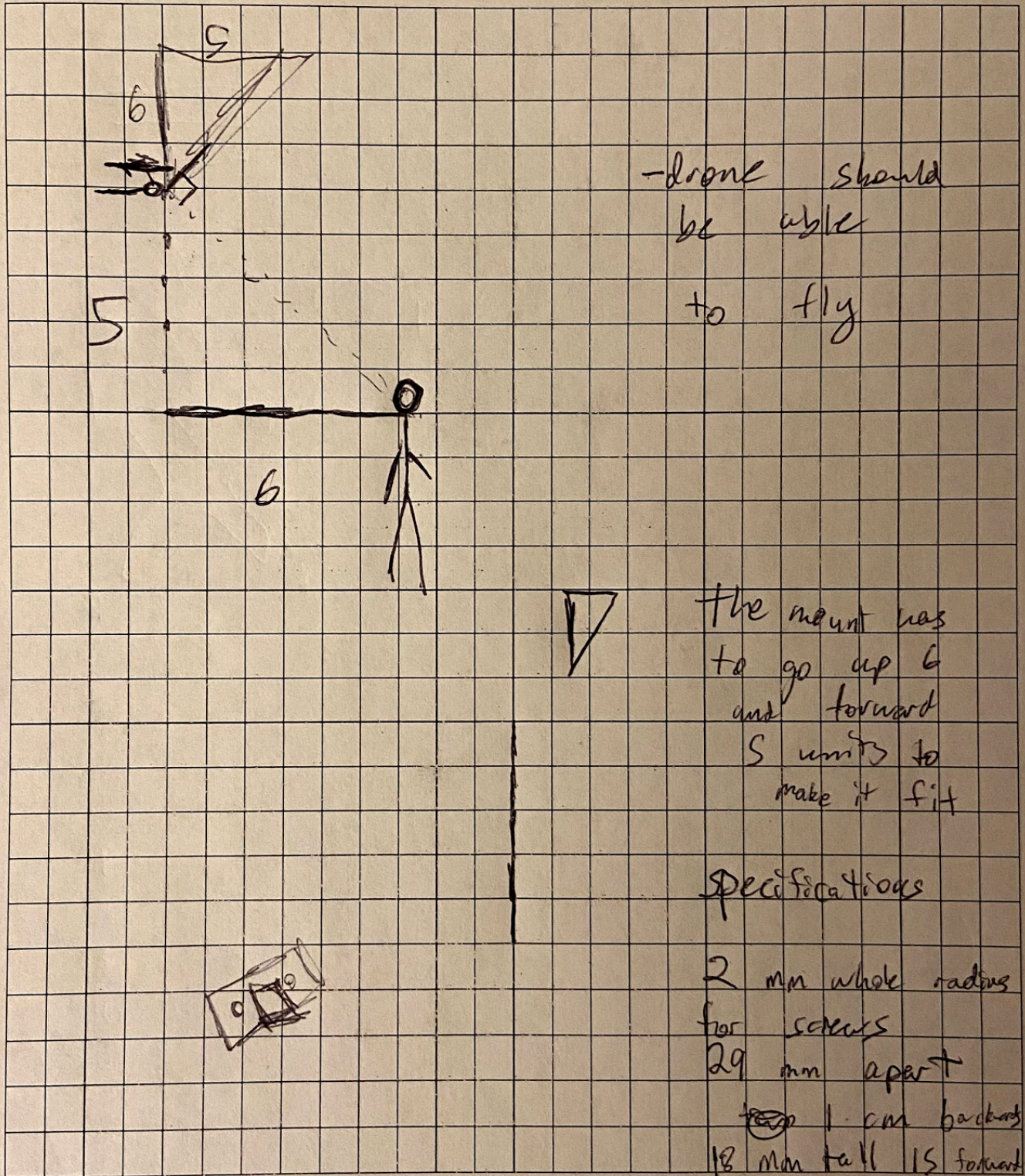
Title of Project Drone Buddy

- drone should be able to fly

The mount has to go up 6 and forward 5 units to make it fit

Specifications

2 mm whole radius for screws

29 mm apart

1 cm backwards

18 mm tall 15 forward

Winessed and Understood by _seibacsha Suga_   Date 11/25/2020

Recorded by _Deorg_   Date 10/24/2020

Title of Activity   3D Printing Raspberry Pi case

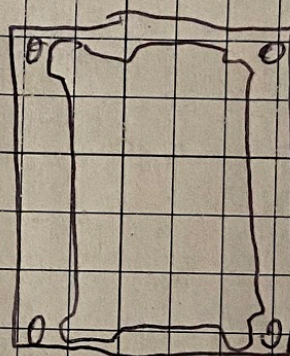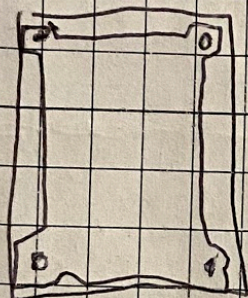**Title of Project**   Drone Buddy

→ extend code so that it is a bit wider

→ initial   new

Pros of switching

easier to close

case + fits better

~~easier to not be than~~

Cons wider, wires fits worse on drone

Continued on Page _____

Winessed and Understood by _____ seibacsha Suya _____   Date 11/25/2020

Recorded by _____ Derek _____   Date 11/7/2020

Title of Activity Flying Drone

Title of Project Drone Buddy

- used controller
- long way frome Semi-autonomous
- tested beta flight code with working drone

-

Witnessed and Understood by ___seibacsha Suga___ Date 11/25/2020

Recorded by ___Jung Framastos___ Date 11/14/20

Title of Activity — Discussion of Presentation

Title of Project — Drone Buddy

- I will design poster
  - ↳ go through example and give my own design
  - ↳ use helvetica Nune
  - ↳ Photoshop in library

Still needs GPS tracking Autonomously

needs lights & sounds
  - ↳ will research & try to implement

Harsh & Zach working on code

Jerrin will be testing it

Winessed and Understood by ___seiborosha luga___   Date 11/25/2020

Recorded by ___lucy danning___   Date 11/16

Title of Activity LED Research
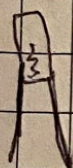
Title of Project Drone Buddy

Raspberry Pi
  ↳ problems, it was soldered
                off of other stuff

↳ I would need to connect to
        bread board

    ↳ simple boolean it's on Patrol

        LED 1 = true; } global
        LED2 = true;   variables

Problem → cannot connect

        LED1 = false; When
                        return home
                        function
                        is called

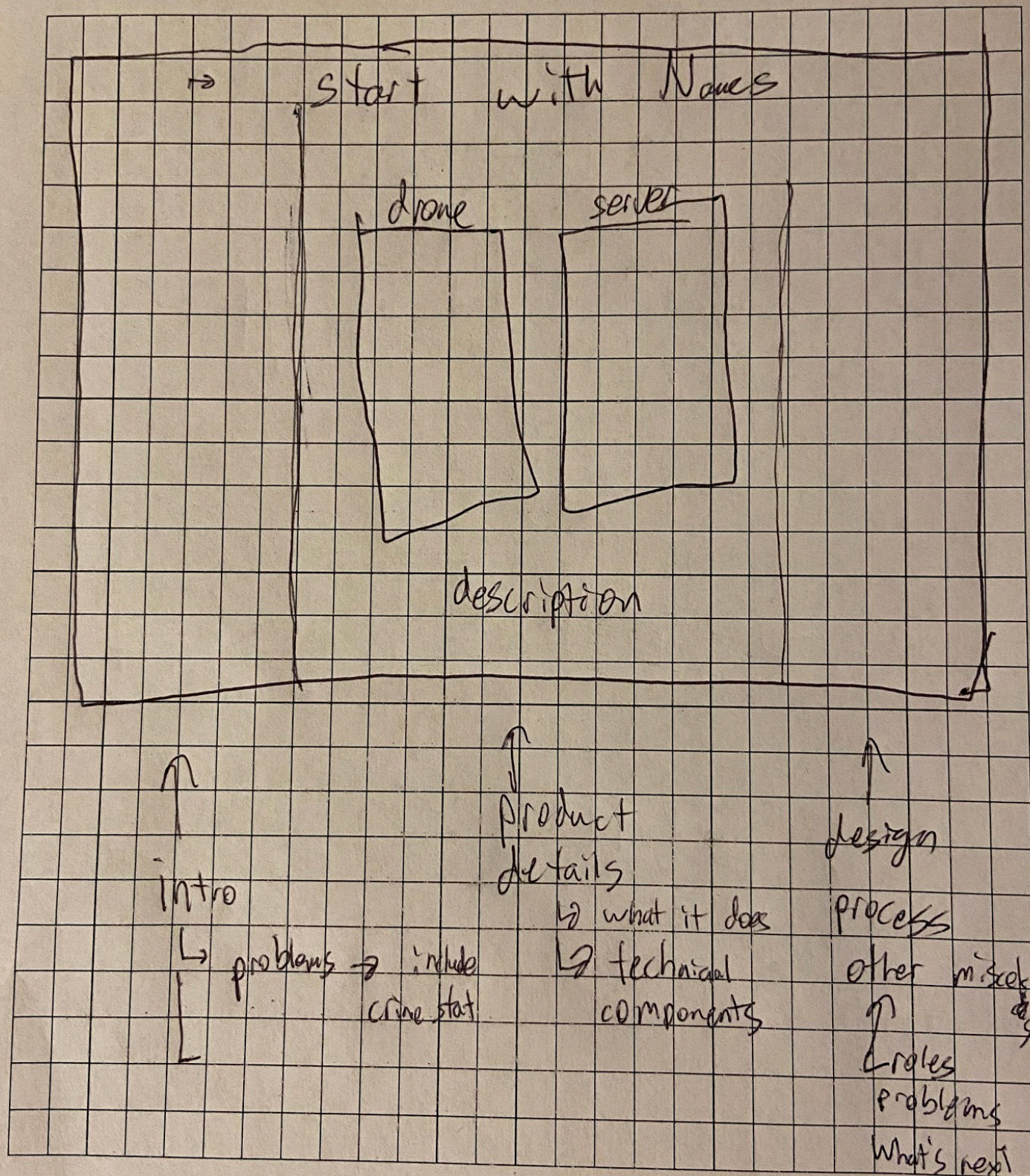Winessed and Understood by _____ Sebastha Linge

Recorded by _____ Jake Gurmala

Date 11/25/2020

Date 11/19/2020

Title of Activity ~~Slides~~ Poster

Title of Project Drone Buddy

Start with Names

drone   server

description

↑
intro
↳ problems → include
crime stat

↑
Product
details
↳ what it does
↳ technical
components

↑
design
process
other misc.
↑
↳ roles
problems
What's next

Winessed and Understood by   seibarisha Suya

Recorded by   Fewye Darmakoy

Date   11/25/2020

Date   11/21/2020

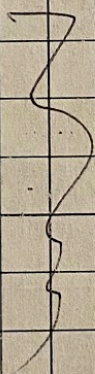**Title of Activity** Final Presentation Creation
Title of Project Drone Buddy

Zach & Harsh are still working on the code → flight controller got busted because of possible humid weather.

While they are doing that, me & Jerson will work on the final presentation

Intro
Problem
Solution
Drone
Firmware
Application
Problems
Future
Conclusion

will split up and practice

woken up at 1 am because due date was wrong 7.C

finished recording presentation went to bed @ 3

Witnessed and Understood by _seibarsha Suya_   Date _11/25/2020_
Recorded by _Kanye Saunders_   Date _11/22/2020_

Title of Activity   Expo
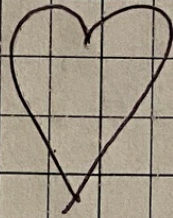
Title of Project   Drone Buddy

It went awesome

it's been real G T ♥

♥

Witnessed and Understood by _seibacsha Suga_   Date 11/25/2020

Recorded by _Seuza Dorendoy_   Date 11/23/2020