



Composition Notebook

Graph Ruled

Curtis Denzell Searle ECE388
- Project Weather Station.

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Team Composition:

Curtis Searle

Major: Electrical Engineering EE,
experience with multiple Sensors in embedded
systems (Steppers, motors, temp, ADC, etc.)
↳ Atmega 328 pb

Lead teams in both EGR303 and ECE 310

Christian Kumbwe

Major: Electrical Engineering EE,
Technical background in large scale system and
design projects.

Research in wave propagation

Managed others in technical field

Provides qualitative constructive criticism and is
a critical thinker

Detailed oriented in designn. + Pass group work together

Liberty DeAngelo

Major: Electrical Engineering EE,
Recent experience in large scale power
systems (Electrical grid)

Posses leadership skills, self motivated and
can accomplish multiple tasks at an
above satisfactory level

Highly interactive, creative, and organized
+ pass group work together

Chris Norton

Major: Electrical Engineering EE,
Unlisted technical background Familiarity with
a variety of technical topics.

Moderate programming skills in all relative

ECE 388 Software.

Continued...

Displays extraordinary problem solving skills
Highly independent, but collaborates personal
findings.

Team Composition pros:

Highly independent and self motivated to
accomplish tasks. High level interaction
and positive outlook. The team has apt or
experience with relevant technical skills
for ECE 388.

Team Composition Cons:

High independence can cause team
members to perform task that
overlap with others. No computer
engineer and no experience with
PCB design.

- Scheduled team meeting every Thursday
after class. ~ 4:30 pm EST.

Cuthm

Possible Projects to Pick:

Home Security System

May Sensors, IR, Buzzer, Lamp, etc.

Thermostat

trigger action based on temperature

Electronic Measuring tape

Resistive or Capacitive touch sensor system

Battery Maintenance System

Digital Lock

Solar panel

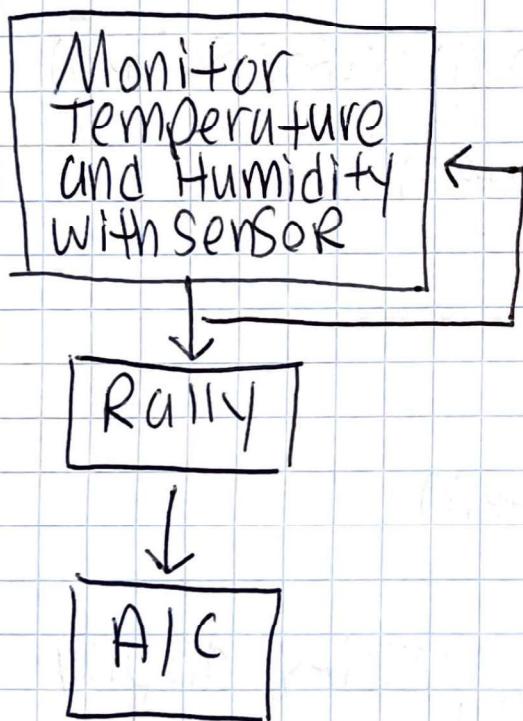
Motion activated system

Weather Station

Could monitor temp, humidity, display log data, display data

The project category Chosen is Weather Station.

Our initial idea for project is to monitor temperature and humidity then regulate an air conditioner. A temperature and humidity Sensor will monitor the environment and regulate a ac with the use of a relay to Send Signal



This project would require Sensor interface and hard wiring the A/C unit. hard wiring the A/C seem a big problem, ~~but~~ we are still in the BrainStorming phase so the project is not yet chosen.

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DHT11:

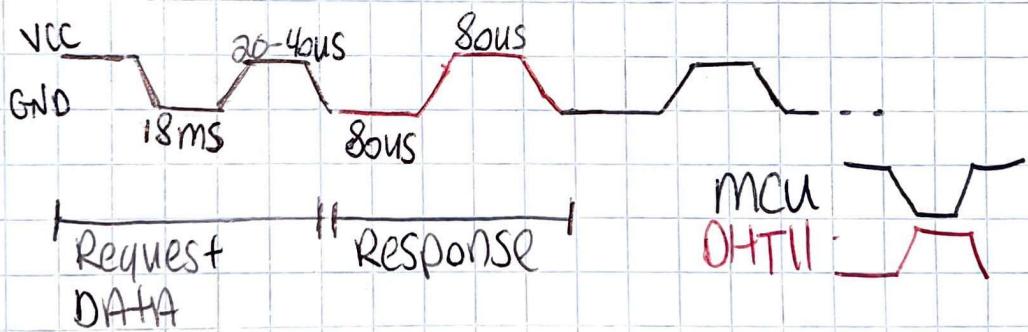
The DHT11 Can read both temperature and humidity So for our project it is highly taken into account



V	D	G
C	A	N
C	+	D
(+)	A	(-)



D	V	G
A	C	N
T	C	D
A	(+)	(-)



You must wait 1s after powering the DHT11 before writing instruction to it. The MCU will first request data and the DHT11 will respond to the request. After, transmission will start.

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Major Components:

BILL OF MATERIALS

PRODUCT	Climate Monitor System	
GROUP	ECE388 Group Awesome	
DATE	9/17/2022	
TOTAL COST	\$30.47	
PART NUMBER	PART NAME	DESCRIPTION
LM1084IS-ADJ/NOPB	1084IS-ADJ/NO	Linear Voltage Regulator IC Positive Adjustable 1 Output 5A DDPACK/TO-263-3
WH1602A	Display Module	LCD Display Module w/ I2C Back Pack (Already Own)
2271239	12 Volt DC Power	Volt DC 5 Amp 60 Watt Regulated Switching Table Top Power Supply 2.5m
694108301002	DC Power Jack	Power Barrel Connector Jack 2.50mm ID (0.098"), 5.50mm OD (0.217") Thr
MOS1/2CT52A121J	Resistor, 120Ω	Metal Film Resistors 120Ω ±300ppm/K ±5% -55°C~+200°C Axial Leaded Through Hole Resistors
SFR16S0003650FR50	Resistor, 365Ω	365 Ohms ±1% 0.5W, 1/2W Through Hole Resistor Axial Metal Film
KNP3W-200Ω±5%T	Resistor, 200Ω	400V 3W ±500ppm/°C ±5% -55°C~+125°C Axial Leaded Through Hole Resistors
FMP100JR-52-560R	Resistor, 560Ω	560 Ohms ±5% 1W Through Hole Resistor Axial Flame Proof, Safety Metal Film
MEA106K250D02	Cap, 10uF	±10% 250V 10uF -40°C~+85°C PET Axial Leaded, 25x46mm Film Capacitors ROHS
-	LEDs	Already Own
15366	DHT11	Temperature and Humidity Sensor (Already Own)
TL3305AF160QG	Push Button	Tactile Switch SPST-NO Top Actuated Surface Mount (Already Own)
ART PASSIVE BUZZER	PassiveBuzzer	Buzzers Piezo 5 V Through Hole PC Pins (Already Own)
P120PK-Y25BR10K	potentiometer	Hole, Snap In Potentiometer None 1.0 Kierros Conductive Plastic 0.05W, 1/20
ATMEGA328PB-AU	TMega328PB-A	TQFP-32_7x7x08P Microcontroller Units (MCUs/MPUs/SOCs) ROHS
X1E000021001900	16MHz Crystal	Hz SMD Crystal Resonator 9pF 60Ω ±10ppm -40°C~+85°C SMD3225-4P Crystals
1465	1528-1189-ND	Adapter Board

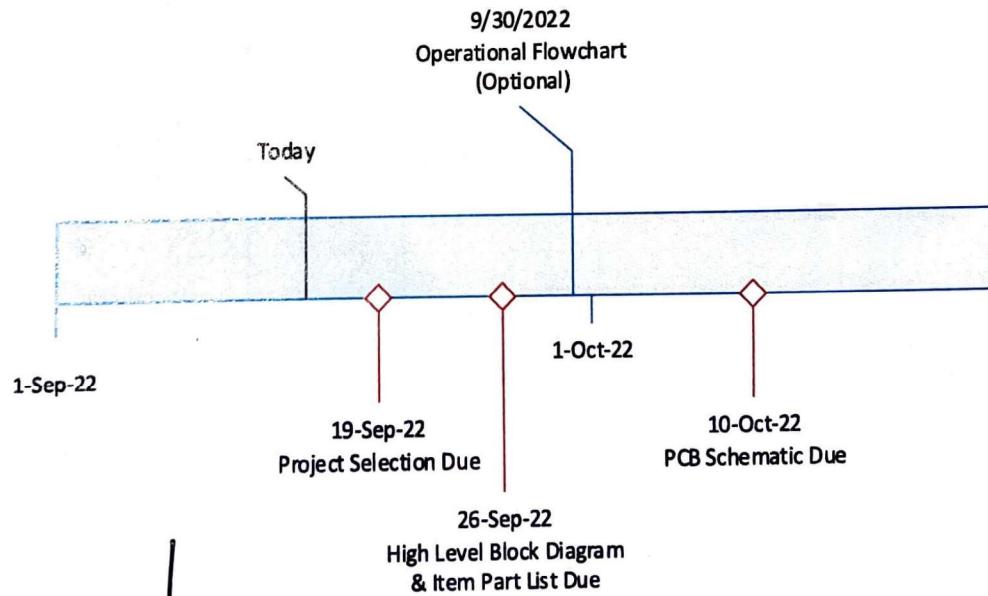
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This is the Course Schedule list Project Expectations by due dates.

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Course Schedule:

ECE 388 – PCB Project Timeline



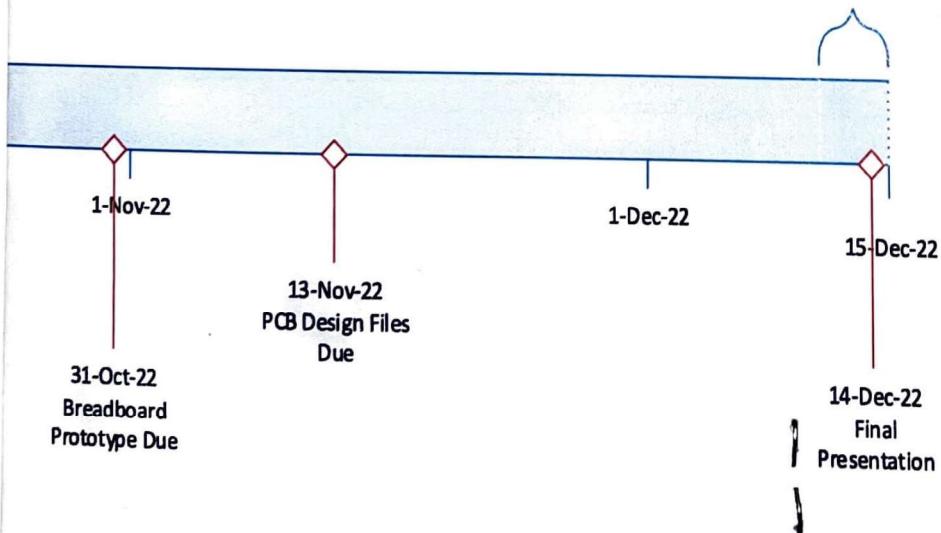
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Group:

- Curtis Searle
- Liberty DeAngelo
- Christian Kyambe
- Chris Norton

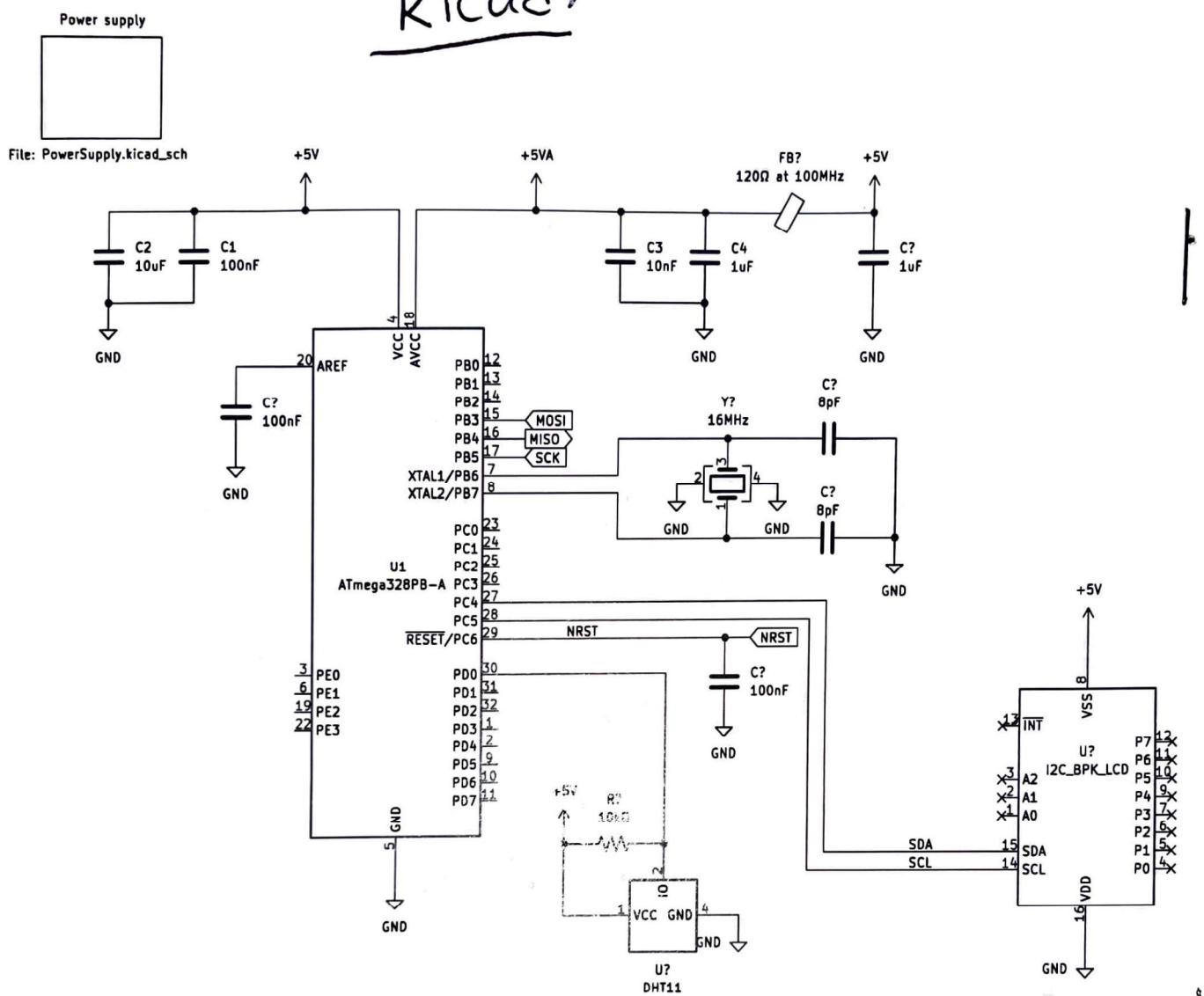
12/11/2022 - 12/15/2022
Finals Week



CXNOM

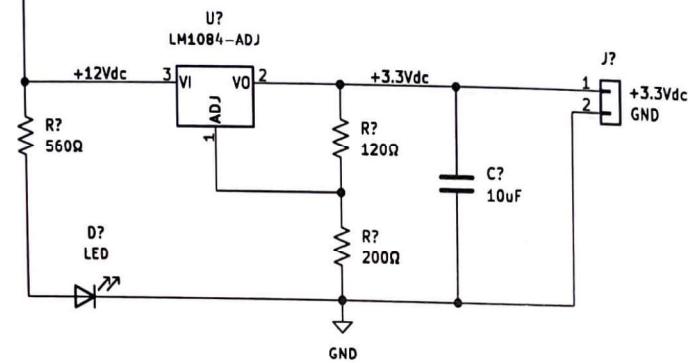
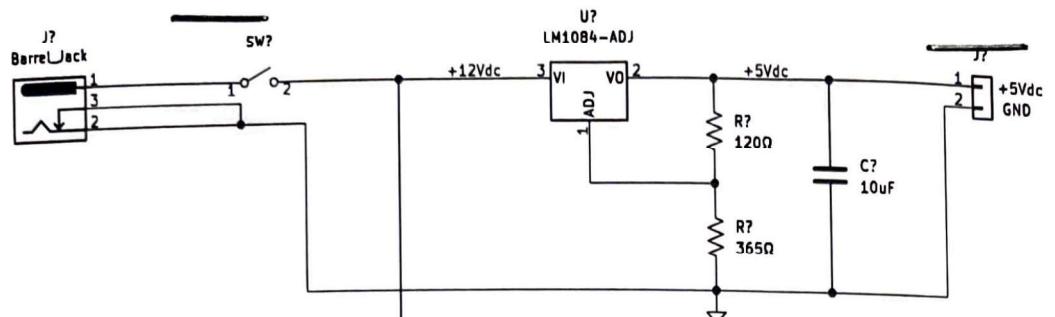
~~Kicad~~ Schematic include all required parts
for PCB design rough draft

Kicad:



Note: only rough draft
still need missing parts
and sensors

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Weekly recap will be attempted ever week and stored in this journal. 10/11/2022

Weekly Recap

- This week we discovered that we will have to program our Atmega328pb chip indirectly through USB (via Atmega32U4-MUR) or using bootlader method, in which we add a new component.
- Team member has appointment for Oct, 10th. Can not make lab that day.
- We do not have a method programmed to store data.

Negative:

The problem we currently face is deciding what method will be used to program our Atmega328pb chip. Although we do not have a means to store data it is not our highest priority.

Positive:

We are on track with class schedule and have a optimistic outlook of the work done and future. All team members are highly involved and participating.

C. Johnson