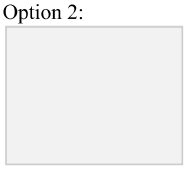
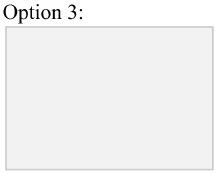
Component Selection

Temp Sensor - Jaden

Solution	Pros (2-3)	Cons (2-3)
Option 1:  Part # TMP102 $5.50 Link	Popular Reliable High Accuracy Wide temp range Low Power Consumption Digital Output Small Form Factor Wide Availability	Limited Resolution No built-in resolution Limited features Cost Not suited for extreme environments
Option 2:  Part # TMP1075DR $0.76 Link	High Accuracy Temp Digital Output for Easy Integration Low Power Consumption Small-Package size Wide Temp range	Limited Measurement Range Resolution of the Temp Range
Option 3: Part # TC74A4-3.3VCTTR $1.15 Link	Digital Output Wide Temp Range Accuracy Low Power Consumption Cost-Effective Availability I2C	Resolution Calibration No Humidity Sensing

Choice: TC74A4-3.3VCTTR
Rationale: Its compatibility and availability make it a great choice while also making it cost-effective.

Power Supply - Amy Valencia

Solution	Pros (2-3)	Cons (2-3)
Option 1:  Adam Tech Part # PA-012 $9.34 Link	Wall mount No load power consumption	5V output may be too low Bound to wall
Option 2:  Adafruit Industries Part # 1528-1835-ND $24.50 Link	Not wall bound Can be recharged after use	Most expensive option 3.7V may be too low
Option 3:  Part # TKDY 9V 1.5A Power Supply Charger $12.99 Link	Continuous short circuit protection Multiple adapters	No data sheet From amazon, may not be reliable

Choice: Adam Tech PA-012
Rationale: The Adafruit battery is not bound to a wall outlet so it can be taken almost anywhere. It can also be recharged after every use and has a life cycle of at least 500 uses.

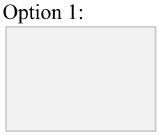
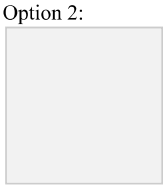
Switching Voltage Regulator - Amy Valencia

Solution	Pros (2-3)	Cons (2-3)
Option 1:  Microchip Part # MIC4575WU $4.32 Link	Output has a wide range (1.2-37V) Familiarity- previously used	Larger in size compared to other options Low in stock
Option 2:  ROHM Semiconductor Part # BD900N1G-CTR $1.34 Link	Not too big in size Reasonable output (1.25-13.8V)	Cheapest option - might not be good quality Lowest output range
Option 3:  Microchip Technology Part # LR12K4-G $1.97 Link	Highest output voltage (1-88V)	Smallest option Thru hole

Choice: Microchip MIC4575WU

Rationale: We chose the MIC4575WU switching voltage regulator because we had familiarity with a variation of the chip from a previous semester's project. Furthermore, the adjustable circuit is outlined in the datasheet with exact part numbers to generate the desired voltage output.

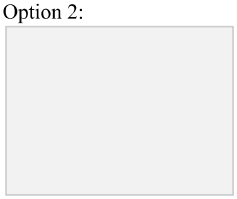
Motor Module - Sam

Solution	Pros (2-3)	Cons (2-3)
Option 1:  Seeed Technology motor Part #: 1597-114090046-ND Price: $5.20 Link	Cheap Datasheet provided Small	Short axle 23 week lead time
Option 2:  25D high torque gear motor Part #: HP25SG-370H-1220-171 Price: $11.85 Link	Longer axle Datasheet provided Small	More expensive No reviews
Option 3:  GearBox Reversible Electric Motor Part #: B07D28QKHY Price: $12.73 Link	Small Very clear dimensions	More expensive No pdf datasheet

Choice: Seeed Technology Motor

Rationale: Since all of the motors are close in size and specifications the Seeed Technology Motor being the cheapest makes it the best choice.

Light Sensor - Sivanee Naghichetty Premkumar
WILL NOT WORK, LOOK FOR SENSOR

Solution	Pros (2-3)	Cons (2-3)
Option 1: Light Sensor Part #: TMD26721 Price: $3.39 Link	Has inbuilt IR sensor and transmitter	Accessibility is limited
Option 2:  Digi-Key Part VEMT2023SLX01DKR-ND Price: $0.86 Link	Temperate range is between -40°C ~ 100°C cheap	Complicated design Max voltage breakdown is 20V
Option 3: 	Cheap Easy design	Max voltage breakdown is 20V No review