Team Number:	306
Project Name:	Sea Scout
Team Member Names:	Connor Bogenn, Harris Bokhari, Kai-ra de la Fuente, Skyler Riley
Version:	2

A. List ALL major components (active devices, integrated circuits, etc.) except for power sources, voltage regulators, resistors, capacitors, or passive elements

All Major Components	Component Name	Part Number	Supply Voltage Range	Number	Absolute Maximum Current	Total Current	Unit
	Microcontroller	PIC18F47K42T-I/PT	2.3 - 5.5 V	1	0.022	0.022	mA
	Temperature Sensor	TC74A0-3.3VCTTR	2.7 - 5.5 V	1	0.35	0.35	mA
	Humidity Sensor	HIH6030-021-001	2.3 - 5.5 V	1	1000	1000	mA
	Motor Driver	DRV8830DGQR	-0.3 - 7 V	2	2	4	mA
	Standard Motor	PPN7PA12C1	5 V	2	270	540	mA
	WiFi Board	ESP32-WOOM-32	-0.3 - 3.6 V	1	1100	1100	mA
						2644.372	mA

B. Assign each major component above to ONE power rail below. Try to minimize the number of different power rails in the design.
Add additional power rails or change the power rail voltages if needed.

(+)5V Power Rail (A)	Component Name	Part Number	Supply Voltage Range	Number	Absolute Maximum Current	Total Current	Unit
	Microcontroller	PIC18F47K42T-I/PT	2.3 - 5.5 V	1	0.022	0.022	mA
	Motor Driver	DRV8830DGQR	-0.3 - 7 V	2	2	4	mA
	Standard Motor	PPN7PA12C1	5 V	2	270	540	mA
	WiFi Board	ESP32-WOOM-32	-0.3 - 3.6 V	1	1100	1100	mA
					Subtotal	1644.022	mA
					Safety Margin	25%	

					Total Current required on (+) 5V Rail	2055.0275	mA
c1. Regulator or Source Channel	Voltage Regulator	LM2596DSADJR4G	0 - 12 V	1	3000	944.9725	mA
					Total Remaining Current Available on (+) 5V Rail	944.9725	mA
(+)5V Power Rail (B)	**Component Name**	**Part Number**	**Supply Voltage Range**	**Number**	**Absolute Maximum Current**	**Total Current**	**Unit**
	Temperature Sensor	TC74A0-3.3VCTTR	2.7 - 5.5 V	1	0.35	0.35	mA
	Humidity Sensor	HIH6030-021-001	2.3 - 5.5 V	1	1000	1000	mA
					Subtotal	1000.35	mA
					Safety Margin	25%	
					Total Current required on (+) 5V Rail	1250.4375	mA
c1. Regulator or Source Channel	Voltage Regulator	LM2596DSADJR4G	0 - 12 V	1	3000	1749.5625	mA
					Total Remaining Current Available on (+) 5V Rail	1749.5625	mA
	Component Name	**Part Number**	**Supply Voltage Range**		**Capacity (mAh)**	**Required by Regulators**	**Battery Life (hr)**
	12 V Battery	A23BPZ	0 - 12 V		45	0.06	750

Notes

External Supply Voltage should be determined by the dropout voltage for highest-voltage regulator (e.g., +14V for a +12V regulator).

If you have multiple units in your design (e.g., a base unit and remote unit) then you need a separate power budget for each unit