Team Number:	210
Project Name:	VibeWater
Team Member Names:	Asadbek, Neel, K, Jacob
Version:	1

¥ C1 31011.	-
A. List ALL major components (acti	ve devices, integrated circuits, etc.) except for
All Major Components	Component Name
	Opamp
	5V regulator
	PIC Discovery Nano
	•
B. Assign each major component al	bove to ONE power rail below. Try to minimize
+12V Power Rail	Component Name
+5V Power Rail	Component Name
	PIC Discovery Nano
	Opamp
c2. Regulator or Source Choice	+5V Regulator
	•
-5V Power Rail	Component Name

c3. Regulator or Source Choice	-5V Regulator
+3.3V Power Rail	Component Name
c4. Regulator or Source Choice	+3.3V low-dropout regulator
C. For each power rail above, select a	specific voltage regulator using the same pro
D. Select a specific external power so	urce (wall supply or battery) for your system,
External Power Source 1	Component Name
Power Source 1 Selection	Plug-in Wall Supply
Power Rails Connected to External Power Source 1	+5V Regulator
External Power Source 2	Component Name
Power Source 2 Selection	Battery
Power Rails Connected to External Power Source 2	+5V Regulator
E. Calculate Battery Life (if applicable)). For each battery, also check the worst-case
	Component Name

Notes

Power Budget

ower sources, voltage regulators, resistors, capacitors, or passive eleme

Part Number	SupplyVoltageRange
MCP6004	+1.8 to 6V
LM7805	+5V - 35V
PIC18F577Q43	1.8-5.1v

e number of different power rails in the design.		
Part Number	SupplyVoltageRange	

Part Number	SupplyVoltageRange
PIC18F577Q43	1.8-5.1v
MCP6004	(range)

LM7805 (range)

Part Number	SupplyVoltageRange

(full part number) (range)

Part Number	SupplyVoltageRange
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KA78RM33RTF +5V - 20V

cess as for major component selection. Confirm that the Total Remaining

and confirm that it can supply all of the regulators for all of the power rails

Part Number	SupplyVoltageRange
VI12-12-E-P5 9V 2A AC DC Pov	110VAC

LM7805 (range)

T.

Part Number	SupplyVoltageRange
(full part number)	+9V
LM7805	(range)

T

ifetime of the batter	y by indicating the capacity	in mAh.

Part Number SupplyVoltageRange

#): 1		
1	soluteMaximumCurrent (m <i>A</i>	TotalCurrent(mA)
'	30	30
1	1000	1000
1	500	200
	ı	
#):	soluteMaximumCurrent (m/	TotalCurrent(mA)
"		Total our on (m/t)
		0
		0
		0
	Subtotal	0
	Safety Margin	25%
Total Cur	rent Required on +12V Rail	0
	rent Available on +12V Rail	<u> </u>
	soluteMaximumCurrent (mA	TotalCurrent(mA)
1	500	500 30
1	30	21
·		_
		0
		0
	Subtotal	0
	Subtotal Safety Margin	0 0 0 530
	Safety Margin	0 0 0 530 25%
		0 0 0 530 25%
	Safety Margin errent Required on +5V Rail	530 25% 662.5
Total Cu	Safety Margin	0 0 530 25% 662.5
Total Cu 1 Total Remaining Cu	Safety Margin errent Required on +5V Rail	0 0 530 25% 662.5 1000 337.5
Total Cu 1 Total Remaining Cu	Safety Margin errent Required on +5V Rail 1000 errent Available on +5V Rail	0 0 530 25% 662.5 1000 337.5
Total Cu 1 Total Remaining Cu	Safety Margin errent Required on +5V Rail 1000 errent Available on +5V Rail	0 0 530 25% 662.5 1000 337.5

	0
Subtotal	0
Safety Margin	25%
Total Current Required on -5V Rail	0
	500
1 500	500
Total Remaining Current Available on -5V Rail	500
# psoluteMaximumCurrent (mA	TotalCurrent(mA)
	0
	0
	0
Subtotal	0
Safety Margin	25%
Total Current Required on +3.3V Rail	0
1 500	500
Total Remaining Current Available on 3.3V Rail	500

Current Available on each rail above is not negative.

Output Voltage soluteMaximumCurrent (mA totalCurrent(mA) +9V 5000 5000 1 1000 1000 Otal Remaining Current Available on External Power Source 1 4000 Output Voltage soluteMaximumCurrent (mA totalCurrent(mA) 500 500 1 1082.5 Otal Remaining Current Available on External Power Source 2 -582.5 Otal Remaining Current Available on External Power Source 2 -582.5	s simultaneously. If you need mul	tiple power sources, list each	separately below an
+9V 5000 5000 1 1000 1000 Total Remaining Current Available on External Power Source 1 4000 Output Voltage >soluteMaximumCurrent (m/A TotalCurrent(mA) 500 500 1 1082.5 Total Remaining Current Available on External Power Source 2 -582.5 Capacity(mAh) equiredByRegulators 1082.5		<u></u>	
1 1000 total Remaining Current Available on External Power Source 1 4000 Output Voltage >soluteMaximumCurrent (m/ TotalCurrent(mA) -9V 500 500 1 1082.5 total Remaining Current Available on External Power Source 2 -582.5 Capacity(mAh) equiredByRegulators 1082.5	Output Voltage	osoluteMaximumCurrent (mA	TotalCurrent(mA)
Output Voltage soluteMaximumCurrent (mA TotalCurrent(mA) -9V 500 1 1082.5 Otal Remaining Current Available on External Power Source 2 Capacity(mAh) equiredByRegulators 1082.5	+9V	5000	5000
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Output Voltage >soluteMaximumCurrent (m/ TotalCurrent(mA)	•	1000	1000
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-9V 500 500 1 1082.5 otal Remaining Current Available on External Power Source 2 -582.5 Capacity(mAh) equiredByRegulators 1082.5			
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1 1082.5 otal Remaining Current Available on External Power Source 2 -582.5 Capacity(mAh) equiredByRegulators 1082.5	-		· · · · · · · · · · · · · · · · · · ·
otal Remaining Current Available on External Power Source 2 -582.5 Capacity(mAh) equiredByRegulators 1082.5	-9V	500	500
otal Remaining Current Available on External Power Source 2 -582.5 Capacity(mAh) equiredByRegulators 1082.5	1	1082.5	1082 5
Capacity(mAh) equiredByRegulators 1082.5	ı	1002.3	1002.3
Capacity(mAh) equiredByRegulators 1082.5			
1082.5	otal Remaining Current Available	on External Power Source 2	-582.5
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1082.5			
		Capacity(mAh)	
			1082.5
Battery Life 0			_ [

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