Power Budget							
Team Number:	202						
Project Name:	AutoCan						
Team Member Names:	Mohammed ,Veeda,Lia,Damian						
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**	**SupplyVoltageRange**	**Qty**	**AbsoluteMaximumCurrent (mA)**	**TotalCurrent(mA)**	**Unit**
	DC Motor (6V N20 Gearmotor)	(datasheet PN)	+6V to +12V	1	1200	1200	mA
	Curiosity Nano (PIC18F57Q43)	(board PN)	+5V	1	120	120	mA
	Op-Amp LM324	LM324	+5V	1	5	5	mA
	LM7805 5V Regulator	LM7805	+7V to +35V	1	1000	1000	mA
	Discrete H-Bridge (Q1–Q4)	PMOS+NMOS	+9V & +5V	1	10	10	mA
	Connector J2 (Header)	Conn_02x04	N/A	1	0	0	mA
B. Assign each major component above to ONE power rail below. Try to minimize the number of different power rails in the design.							
+9V Power Rail	**Component Name**	**Part Number**	**SupplyVoltageRange**	**Qty**	**AbsoluteMaximumCurrent (mA)**	**TotalCurrent(mA)**	**Unit**
	DC Motor (stall)	(N20 motor)	+9V	1	1200	1200	mA
	LM7805 Input (from 5V loads)	reflected	+9V	1	100	100	mA
	H-Bridge Overhead	gate losses	+9V	1	5	5	mA
					0	0	mA
					0	0	mA
	Subtotal					1305	mA
	Safety Margin					0.25	
	Total Current Required on +9V Rail					1631.2	mA
c1. Regulator or Source Choice	c1. Regulator or Source Choice	+9V Adapter	+12V - 35V	1	2000	2000	mA
	Total Remaining Current Available on +12V Rail					0	mA
+5V Power Rail	**Component Name**	**Part Number**	**SupplyVoltageRange**	**Qty**	**AbsoluteMaximumCurrent (mA)**	**TotalCurrent(mA)**	**Unit**
	Curiosity Nano (max)	PIC18F57Q43	+5V	1	120	120	mA
	Op-Amp LM324	LM324	+5V	1	5	5	mA
	H-Bridge Gate Drive	gate charge	+5V	1	5	5	mA
	External 5V (reserve)		+5V	1	0	0	mA
					0	0	mA
					0	0	mA
	Safety Margin				0	0.25	mA
	Subtotal					130	mA
	Total Current Required on +5V Rail					162.5	mA
c2. Regulator or Source Choice	c2. Regulator or Source Choice	LM7805 5V Regulator	(range)	1	1000	234	mA
	Total Remaining Current Available on +5V Rail					375	mA
-5V Power Rail	**Component Name**	**Part Number**	**SupplyVoltageRange**	**Qty**	**AbsoluteMaximumCurrent (mA)**	**TotalCurrent(mA)**	**Unit**
	Opamp	(full part number)	(range)	1	100	100	mA
						0	mA
						0	mA
						0	mA
	Subtotal					100	mA
	Safety Margin					0.25	
	Total Current Required on -5V Rail					125	mA
c3. Regulator or Source Choice	-5V Regulator	(full part number)	(range)	1	500	500	mA
	Total Remaining Current Available on -5V Rail					375	mA
+3.3V Power Rail	**Component Name**	**Part Number**	**SupplyVoltageRange**	**Qty**	**AbsoluteMaximumCurrent (mA)**	**TotalCurrent(mA)**	**Unit**

	Wifi transceiver	(full part number)	+1.8 - 3.3V	1	350	350	mA
						0	mA
						0	mA
						0	mA
	Subtotal					350	mA
	Safety Margin					0.25	
	Total Current Required on +3.3V Rail					437.5	mA
c4. Regulator or Source Choice	+3.3V low-dropout regulator	KA78RM33RTF	+5V - 20V	1	500	500	mA
	Total Remaining Current Available on 3.3V Rail					62.5	mA

C. For each power rail above, select a specific voltage regulator using the same process as for major component selection. Confirm that the Total Remaining Current Available

D. Select a specific external power source (wall supply or battery) for your system, and confirm that it can supply all of the regulators for all of the power rails simultaneously. If

External Power Source 1	Component Name	Part Number	SupplyVoltageRange	Output Voltage	AbsoluteMaximumCurrent (mA)	TotalCurrent(mA)	Unit
Power Source 1 Selection	Plug-in Wall Supply	(full part number)	110VAC	+24V	5000	5000	mA
Power Rails Connected to External Pow	+12V regulator	LM7812	+12V - 35V	1	1000	1000	mA
	+5V Regulator	LM7805	(range)	1	1000	1000	mA
	+3.3V low-dropout regulator	KA78RM33RTF	+5V - 20V	1	500	500	mA
	Total Remaining Current Available on External Power Source 1					2500	mA

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