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
	Speaker (FD3057 - kit)	LS1	AC-coupled	1	0	0	mA
	Curiosity Nano (PIC18F57Q43)	(board PN)	+5V	1	120	120	mA
	Amplifier NPN Transistor	2N3904	+5V	1	25	25	mA
	LM7805 5V Regulator	LM7805	+7V to +35V	1	1000	1000	mA
	Amplifier PNP Transistor	2N3906	+5V	1	25	25	mA
	Connector J2 (Header)	Conn_02x04		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. Add additional power rails or change the power rail voltages if needed.

+9V Power Rail	Component Name	Part Number	SupplyVoltageRange	Qty	AbsoluteMaximumCurrent (mA)	TotalCurrent(mA)	Unit
	No direct 9V loads (speaker system)	-	+9V	0	0	0	mA
	Subtotal					0	mA
	Safety Margin					0.25	
	Total Current Required on +9V Rail					0	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
	Push-Pull Amplifier (2N3904/2N3906)	Q1+Q2	+5V	1	50	50	mA
	Reserved/Other 5V Loads	-	+5V	0	0	0	mA
					0	0	mA
					0	0	mA
					0	0	mA
	Safety Margin				0	0.25	mA
	Subtotal					170	mA
	Total Current Required on +5V Rail					212.5	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
External Power Source 1	**Component Name**	**Part Number**	**SupplyVoltageRange**	**Outp**	**AbsoluteMaximumCurrent (mA)**	**TotalCurrent(mA)**	**Unit**
Power Source 1 Selection	Plug-in Wall Supply	(full part number)	110VAC	+24	5000	5000	mA
Power Rails Connected to External	+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