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	+5V	1	150	150	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, status LED, pushbutton (minor loads)	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	200	200	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					320	mA
	Total Current Required on +5V Rail					400	mA
c2. Regulator or Source Choice	c2. Regulator or Source Choice	LM7805 5V Regulator	(range)	1	1000	400	mA
	Total Remaining Current Available on +5V Rail					600	mA
-5V Power Rail	**Component Name**	**Part Number**	**SupplyVoltageRange**	**Qty**	**AbsoluteMaximumCurrent (mA)**	**TotalCurrent(mA)**	**Unit**
	No -5V loads (not used in speaker design)	-	-5V	1	0	0	mA
						0	mA
						0	mA
						0	mA
	Subtotal					0	mA
	Safety Margin					0.25	
	Total Current Required on -5V Rail					0	mA
c3. Regulator or Source Choice	No -5V regulator (rail not used)	-	-	1	0	0	mA
	Total Remaining Current Available on -5V Rail					0	mA
+3.3V Power Rail	**Component Name**	**Part Number**	**SupplyVoltageRange**	**Qty**	**AbsoluteMaximumCurrent (mA)**	**TotalCurrent(mA)**	**Unit**
	No +3.3V loads (not used in speaker design)	-	+3.3V	1	0	0	mA
						0	mA

						0	mA
						0	mA
	Subtotal					0	mA
	Safety Margin					0.25	
	Total Current Required on +3.3V Rail					0	mA
c4. Regulator or Source Choice	No +3.3V regulator (rail not used)	-	-	1	0	0	mA
	Total Remaining Current Available on 3.3V Rail					0	mA
External Power Source 1	**Component Name**	**Part Number**	**SupplyVoltageRange**	**Outp**	**AbsoluteMaximumCurrent (mA)**	**TotalCurrent(mA)**	**Unit**
Power Source 1 Selection	Wall-mounted DC power supply	PJ-102AH	110VAC	+9V	800	800	mA
Power Rails Connected to External	+9V input rail (after fuse)	-	+9V	1	800	400	mA
	+5V Regulator	LM7805	+9V to +5V	1	1000	400	mA
	+3.3V low-dropout regulator	KA78RM33RTF	+5V - 20V	1	500	500	mA
	Total Remaining Current Available on External Power Source 1					400	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