

ECE-411 Decision Matrix, Group Two

Introduction:

For our ECE-411 project we used a variety of decisions matrices to narrow down and conclude certain components of our project. These decisions lead to successful project development techniques within our group. Below is a list of our four entries:

Decision Matrix One: Deciding on our Practicum Project Based on Difficulty:

For the first decision matrix we implemented, it involved choosing our practicum project. We arranged the projects into a table and broke them down based off how difficult we thought they would be on a scale of one to five. One being the easiest and five being the hardest. Below is a look at what this table was composed of:

Project Ideas:	Difficulty (1 to 5):
Guitar Modulator	5
Collision Sensor	4
Multidirectional LED Audio Sensor	4
Word Clock	2

Now these values that we listed were just a combination of us as a group talking through the time that each one would take to build, the construction, and overall difficulty. These values were also the average number that all of us individually came up with based off our thoughts of the project.

Decision Matrix Two: Layout and Designs Further Breakdown

Deciding what we wanted the board to look like, what components, the sizing, etc. all were up for consideration. Budget is also a big factor, so we needed to make a matrix of what we wanted vs. was this realistic for the time and money we have, also the factor of is this consumer friendly.

Each category graded on a 1 to 10 scale:	Guitar Modulator	Collision Sensor	Multidirectional LED Audio Sensor	Word Clock
Cost:	7	5	8	4
Time:	9	6	8	4
Size:	4	3	7	4
Consumer Consumption: (in this case lower is better)	3	5	7	2
Total:	23	19	30	14

As we can see from the matrix above, the lower value is better and the project we would decide on.

Decision Matrix Three: Word Clock, Breaking up the work

The next important factor that we thought of was creating a decision matrix of our strengths. Group organization is key when creating a project. So, we built a matrix of who has strengths in certain areas and can contribute the most in that area or take lead.

Group Member:	Soldering:	Eagle: PCB Layout	Eagle: Schematic	Coding:	GitHub:	Documentation:
Teresa	x	x	x			x
Martin	x				x	x
Jennifer	x		x	x		x
Charles	x	x				x

Again, these areas don't reflect what a person solely focused on, just more so what their main strengths are and if they can take lead and teach others in these categories.

Decision Matrix Four: Concept Tables

Below is a concept table we used when deciding what we wanted the board to be composed of:

Display	Power	Size	Enclosure Style
LED Only Display	AC Power	Credit Card Size	Wood
Backlit "Plastic Display"	9V Battery	Small Enclosed Box	Plastic
LCD Screen	USB	Small Picture Frame	Metal
Laser Etched, for Backlit display		Phone Sized	3D-Print

This helped us on a solid design style for the Word Clock.