**ECE 411  
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**T-6 Decision Matrix for the Practicum**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Decision Criteria** | | **Intercom** | **Refrigerator/Freezer Thermostat (Kegerator)** | **Bluetooth Cassette Tape** | **RFID Motorized Lock** |
| **Cost** | **5** | 2 | 4 | 2 | 3 |
| **Weight** | **2** | 1 | 4 | 1 | 1 |
| **Battery Life** | **4** | 1 | 1 | 1 | 2 |
| **Technical Ability to Develop** | **3** | 2 | 2 | 4 | 3 |
| **Interest** | **5** | 1 | 3 | 2 | 2 |
| **Parts Availability** | **2** | 2 | 3 | 5 | 3 |
| **Score**  *(lower is better)* | | 31 | 59 | 48 | 50 |

**Rationale:**

Weight

* We chose the weight of the criteria base on being students. In that, as students we have limited funds to purchase the parts while simultaneously being very driven to explore our own new ideas. i.e cost and interest are weighted higher than all other aspects project design criteria.

Values

* Cost (based on funds of the team)
  + 5 - $140 to $200
  + 4 - $100 to $140
  + 3 - $70 to $100
  + 2 - $40 to $70
  + 1 - $1 to $40
* Weight
  + 5 - 100 to 200 lbs.
  + 4 - 60 to 100 lbs.
  + 3 - 30 to 60 lbs.
  + 2 - 10 to 30 lbs.
  + 1 - 0 to 10 lbs.
* Battery Life
  + 5 - 10 hours
  + 4 - 50 hours
  + 3 - 100 hours
  + 2 - 200+ hours
  + 1 - Wall Outlet (Forever) or External Source
* Technical Ability to Develop
  + 5 - Don’t know anything
  + 4 - Have an idea
  + 3 - Know the basics
  + 2 - Intermediate knowledge
  + 1 - Knowledge on everything
* Interest (votes)
  + 5 - 1
  + 4 - 2
  + 3 - 3
  + 2 - 4
  + 1 - 5
* Parts Availability
  + 5 - No one makes it
  + 4 - Takes some effort to find
  + 3 - Needs some googling
  + 2 - Just about everywhere
  + 1 - Everyone makes it

**Conclusion:**

* From the results of the decision matrix we decided to explore the development of the intercom system. Most importantly, we are confident in the technical abilities and methods which are required to complete this project. All the parts needed are readily available and there are already similar existing products in the marketplace, which we can use for product research if necessary. In addition the project interests all of us due to its everyday usefulness.