# As we are nearing the end of this course, you must use the knowledge you have gained throughout the year to design a product(prototype) using the materials in your raspberry pi kits. Your product must address a practical need.

# Minimum Requirements

# Use a minimum of 2 sensors (sensor must control something)

1. Use a minimum of 1 motor for physical control of at least 1 aspect of system.
2. Use a minimum of 2 inputs (switches, GUIzero buttons, slider etc.)
3. Use a minimum of 2 outputs (LEDs, buzzers, etc.)
4. A functioning GUI (should be aesthetically pleasing)

# Specifications

Date:

Group Members: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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Innovation Chosen: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Rough sketch and/or description of problem to be solved

List project/design specifications (What measurements will be involved, ) :

List objectives for a successful solution (How will you decide if your product meets the needs) :

Draw and/or describe three possible designs that can be employed as a solution(you can draw on paper and insert pictures below):

Design 1

Design 2

Design 3

What are the pros and cons of each of the three designs?

|  |  |  |  |
| --- | --- | --- | --- |
|  | Design 1 | Design 2 | Design 3 |
| Pros |  |  |  |
| Cons |  |  |  |

Is there any way of combining the different designs? Why or why not.

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Which design would be the best to use?

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# Research

Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

What alternatives exist to achieve your specifications?

|  |  |
| --- | --- |
| Name of 1st alternative |  |
| Reference |  |
|  |  |
| Name of 2nd alternative |  |
| Reference |  |

Are the alternatives better than your initial design in any way? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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Will your design change as a result of the research? Why or why not? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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Is there a consensus among your group members about the design? If not explain why. \_\_\_\_\_\_\_\_\_\_\_\_\_\_

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# Prototyping

Ideally, what material would be used to build the final version of this project? (be specific, instead of ‘plastic’, look up what kind of plastic)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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What material would be the best to use economically? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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What material would be the cheapest to use to build a prototype of the project but still have the capacity to complete the task? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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# Code Design

Complete pseudocode (flow chart or pseudocode) and attach them to this journal.

# Journal

Keep a record of your ideas and discussions and what dates they occurred.

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