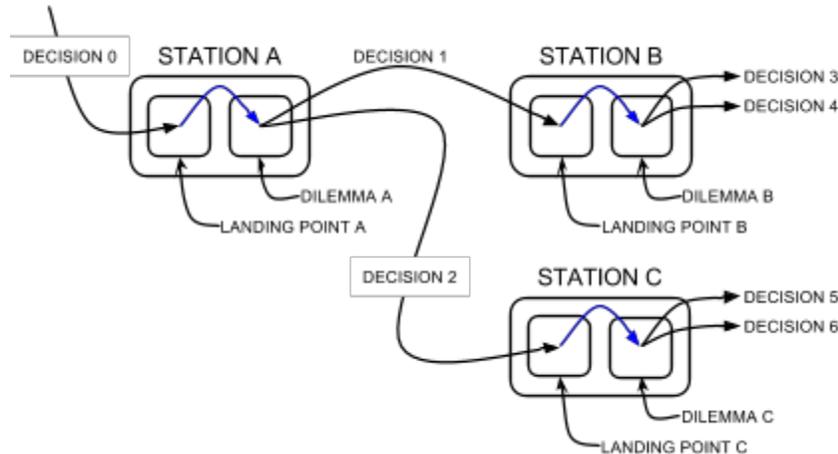


Defining Your Interface Piece

This document is a work in progress.

Requirements

At each station a user will be faced with a societal *dilemma*. The user must interface with the station by answering questions, pressing buttons, or by some other means - their input eventually culminating in a decision on how they would deal with that particular *dilemma*. Based on the user's decision, the station will then send the user to the *landing point* of another station. This *landing point* will display quantitative evidence on how other civilizations fared when they made the same decision. This landing point then leads to a related dilemma faced by the landing station and it all starts over again.



Enticing the User - When your station is not being used, it must entice users to come play with it. It can glow, make noise, or otherwise get someones attention.

Interface - In order to illustrate your dilemma, you must design and fabricate a user interface. The user interface is composed of two distinct parts:

- User Prompts - When a user first approaches your station, you need to ask them questions or [elicit](#) their input in some way. (i.e. illuminate printed questions, show questions on a screen, or ask questions verbally)
- User Input - In response to the use prompts, the user must respond in some way (i.e. press a button, turn a dial, the prompts, the user must input information to the station. The user input must include:

Feedback - As the user is interacting with your station, you must provide them with live feedback on how they are doing (i.e. which decision they're leaning towards). The display can be mechanical (i.e. a tipping scale), electrical (led status), auditory, or some other ingenious method.

Final Outcome - Once the user has completed their work at your station, you must clearly communicate which decision they have made (and thus which path they are following).

Reset - The station must have a manual and automatic reset which preps the station for the next user.

Global Communication - Your station must be able to effectively communicate with the master Arduino. You will be given libraries to make this easier - you just need to implement them properly. Your station must accept the following inputs:

- Request for user data: when requested, your station must provide all user responses since the last request.
- Attention Getting: when requested, your station must go crazy and attract attention.

Materials:

Each group will receive the following materials:

- (1) [Arduino UNO](#)
- (1) [Prototyping Shield & Mini Breadboard](#)
- (1) [LCD Shield](#) or [Motor Shield](#)
- (65) [Jumper Wires](#)
- (1) Hobby Servo
- Up to 10 Lights or LEDs
- Up to 3 Buttons or Switches

Each group may negotiate additional items, including:

- Audio interfaces
- Lights & LEDs
- Specialty Sensors

Considerations:

- User Inputs - Input can be discrete (i.e. on/off only) or variable (accepts a range of values).
 - Discrete - this can be done using buttons and switches.
 - Variable - this can be done most easily using variable resistors, including: slide potentiometers & rotary potentiometers.
- Processing data - At some point your Arduino will have to consider all of the discrete and variable inputs and make a decision on which path the user will take. You have to make and program these rules.
- Allotted Time - Take note of when a nearly final product is due. Look at a calendar and see how many weeks that actually is. This project cannot be completed last minute.
- Scope - You want to build something that you will be proud of for years to come. Start by thinking big, then refine your idea(s) through the proposal process. And remember - Mike & Scott give good advice on scoping.
- Environment - Your finished station will be exhibited in a very crowded place. It may be light, dark, quiet, or noisy - so your piece needs to be usable in any of these environments.
- Durability - Things break. When people are touching them - they break a lot. Try to design something that can stand up to some abuse.

Interface Proposal

Names:

1. How will you prompt the user (how do you ask the user questions or prompt a response)? Describe what it will do and how it will look.

2. How will the user provide input to your station (how will they answer the questions/prompts you described above)? Describe what it will do and how it will look.

3. How will the station provide feedback to the user (how will it let them know which decision they are leaning towards)? Describe what it will do and how it will look.

4. How will your station communicate the final outcome (i.e. their decision)? Describe what it will do and how it will look.

5. When your station isn't being used, how will it entice users to approach it?

Before drawing the picture, please print this page (and only this page) and get a signature from Tasha or Scott. Keep the signed copy (it's what you're graded on).

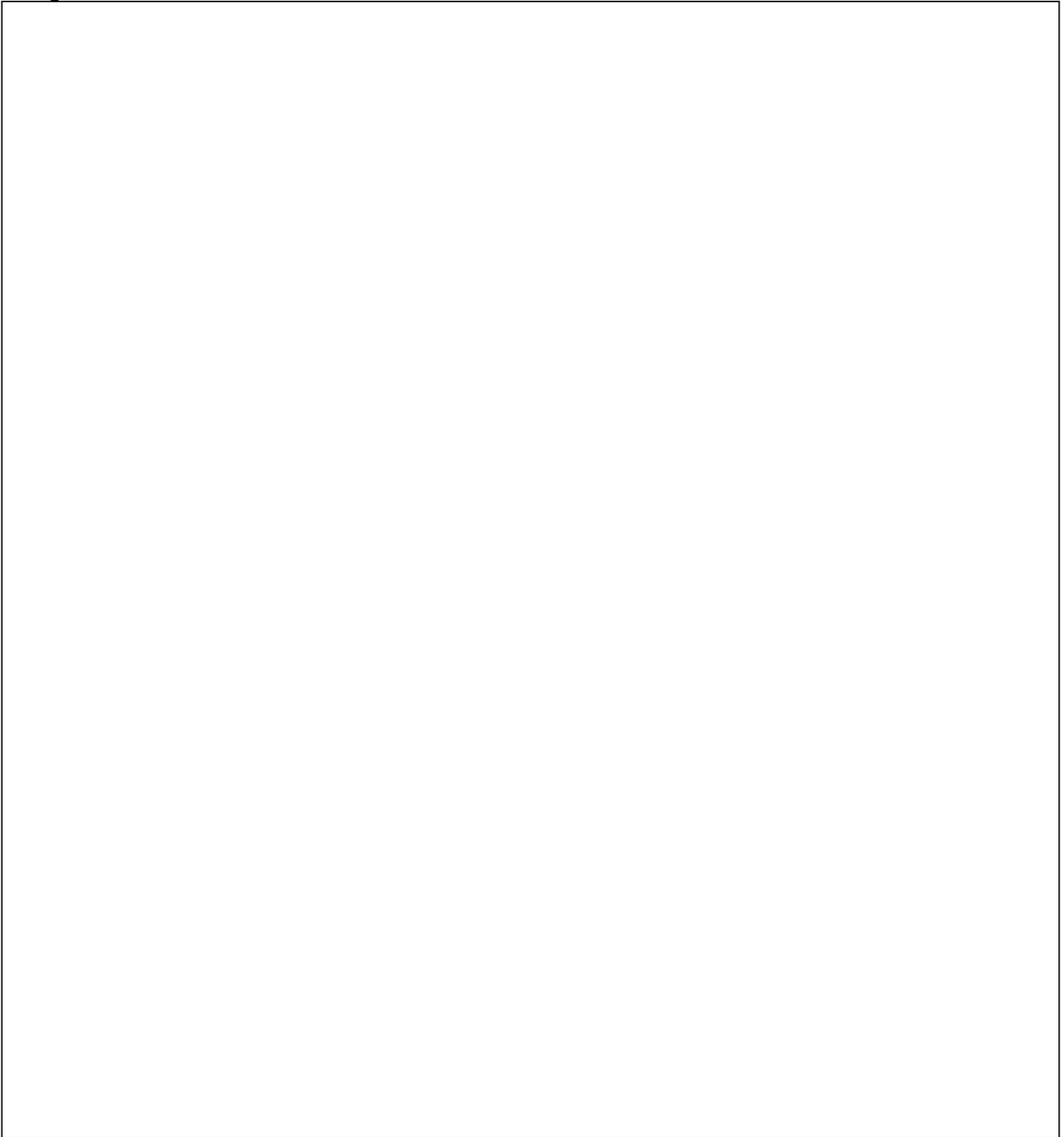
Proposal Approval

(by Tasha or Scott only)

Signature

Date

Draw a Picture of the whole station. How will the landing point, evidence, dilemma, prompts, and feedback be arranged? What will the look like? Be sure to use lots of notes and annotations.



After completing your picture, show this page to Tasha or Scott for approval. Keep the signed copy (it's what you're graded on).

Drawing Approval
(by Tasha or Scott only)

Signature

Date