**CSE1120 (Structure Programming II) & 2110 (Procedural Programming I) Modules**

**Major Learning Objectives:**

* Students work with structured programming constructs by adding the selection and iteration program control flow mechanisms to their programming repertoire.
* Students develop their understanding of the procedural programming paradigm. They move from a structured programming approach in which modules were handled through the use of program blocks to a more formal modular programming approach in which they are handled through **subprograms**.

This module can be completed on your own or with a partner. You can choose how you wish to complete the tasks (weebly, powerpoint, prezi, etc). **However, I want to see all work put into your OWN words. If you cannot put information in your own words, you do not understand it.**

 The list of tasks to complete this module is as follows:

1. Research loops as they relate to robotics. Describe when and why they are used. (Can be completed as a group)

2. Examine the decision making statement found here: <http://frc-west.github.io/courses/CSE1120/1-Decisions/1-StatementsasDecisions/>

* Choose a simple decision that you have made or have to make. Lay out your decision making process similar to this example. Your decision should have several viable options and will work best if there’s a number constraint (time, money, grades, etc). (Can be completed as a group. If doing group work, complete one per person but one copy):

Question: What should I eat for supper?

Qualifications: Time until supper, What I feel like, Funds to buy supper

Process:

 If I don't have any time until supper, go out to eat.

 If I have more than enough money to go out, go out to eat.

 If I don't have enough money,

 If I have enough time / resources to make what I feel like, make that.

 If I don't have what I need, make something simple.

* Try to program your decision using code like this.

if timeUntilSupper() < timeToMakeSupper():

 goOut()

elif money() > moneyToGoOut():

 goOut()

else:

 if timeUntilSupper() >= timeToMakeSupper(myPreference()):

 make(myPreference())

 else:

 make(simpleSupper())

3. CargoBot is a free app for IPad that forces you to think like a computer and hits many of the outcomes within our Robotics modules. Complete the tutorials in CargoBot. Once you have found a solution, it allows you to record a video of your solution. Record your solution and show Ms. Bartlett to receive credit for each tutorial.

4. As a group we will discuss how many of the games I would like you to solve in each level. We will look at time constraints, working as a group vs. individual, and any other concerns you might have before you begin.

Robotics I - Grading Rubric

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| --- | --- | --- | --- |
| Task  | 1 | 3 | 5 |
| Loops | Information was not presented using any suggested modes and lacked disorganization  | Project had some disorganization or could have been presented using a better mode | Project was laid out neatly and used an appropriate mode to present learning |
| Decision making 1 | Students decision was not presented in the manner expected or did not include options.  | Students presented a decision as an if else loop but did not attempt to present it as a code. | Students presented a decision as an if else loop and attempted to present it in code.  |
| Decision making 2 | Students decision was not presented in the manner expected or did not include options.  | Students presented a decision as an if else loop but did not attempt to present it as a code. | Students presented a decision as an if else loop and attempted to present it in code. |
| Decision making 3 | Students decision was not presented in the manner expected or did not include options.  | Students presented a decision as an if else loop but did not attempt to present it as a code. | Students presented a decision as an if else loop and attempted to present it in code. |
| Tutorials | Students have not completed this task to my satisfaction | Students have not completed several of the tutorials. | Students have completed all of the tutorials and have provided video evidence.  |
| CargoBot Levels | Students have not completed this task to my satisfaction | Students have not completed the agreed upon number of games from each level.  | Students have completed all of the agreed upon games from each level and have provided video evidence.  |
| Teacher Comments:  |