**Project Name:** Basic Computer Architecture Scripts

**Start Date:** 1/11/21  
**End Date:** 4/30/21

**Team Member:** Emma Long

**Project Sponsor:** Dr. Ernst Bekkering

**Customer:** NSU Faculty

**Users:** NSU Students

**Purpose**:

The reason for this project would be for Basic Computer Architecture students to check their knowledge of such formulas selected. They will need to have an understanding of the formulas before using the calculator to understand and ensure that their answers are correct.

**Goals and Objectives**:

The goal of this project is to complete fully functioning scripts to run frequency, grey code, and 2’s complement calculations. Also, to help students expand their knowledge.

**Schedule Information** (major milestones and deliverables—features or code):

|  |  |
| --- | --- |
| Original  1/11-1/15: Proposal  1/18-1/22: Research/Modeling 1/25-1/29: Research/Modeling 2/1-2/5: Research/Modeling 2/8-2/12: Develop source code 2/15-2/19: Develop source code 2/22-2/26: Develop source code 3/1-3/5: Develop and run a test plan 3/8-3/12: Develop and run a test plan 3/15-3/19: Modify any errors that occurred during testing 3/22-3/26: Modify any errors that occurred during testing 3/29-4/2: Run test once errors are corrected 4/5-4/9: Confirm programs run smoothly 4/12-4/16: Review  4/19-4/23: Finish up/Publish on GitHub | Revised  1/11-1/15: Proposal  1/18-1/22: Research/Modeling 1/25-1/29: Research/Modeling/Coding 2/1-2/5: Research/Frequency Coding 2/8-2/12: Research/Grey Code Coding 2/15-2/19: Develop source code/2sComplement 2/22-2/26: Develop source code 3/1-3/5: Error checking 3/8-3/12: Visit BCA class and make corrections based off their input 3/15-3/19: Spring Break 3/22-3/26: Test plan and Testing 3/29-4/2: Testing 4/5-4/9: final reports and presentation, Github 4/12-4/16: final reports and presentation, Github 4/19-4/23: Finish up/review |

**Approach**:

I am planning to use a ~~waterfall~~ method and complete each step before moving on to the next.

More of an iterative type of approach.

**Constraints:**

Conflicting schedules of time due to work and other school courses.

**Assumptions:**

I can assume that the students own a computer and have some sort of understanding of frequency, grey code, and 2’s complement. I will also be assuming that users know how to run the calculator from the command line.

**Success Criteria:**

Fully functioning programs that will calculate frequency, grey code, and 2’s complement.

**Scope**:

Frequency calculator  
Grey code calculator  
2’s complement calculator  
An example of the calculations before they are actually performed

**Risks and Obstacles to Success:**

There are risks in the time constraint of the project.

**Project Priorities and Degrees of Freedom:**

The main priorities of this project are to complete the three calculators. If those are finished rather quickly and ahead of schedule then there will be room for enhancements and possibly another calculator of similar type achieved as well.