**4.1 Project Task Set:**

For this project, the decision to use the Waterfall process flow was made. The scale of the project overall is relatively small, making a linear approach to the process the simplest.

**Framework Tasks:**

* **Communication**:  
  The first step in the process is to establish the means of communications between members. This includes selecting tools to facilitate formal and informal communication, as well as laying out the availability of each member to select best meeting times and working schedules. This will reduce as many information related delays as possible by providing a steady flow to all members regularly. Adjustments will be made as necessary throughout the entire process.  
  Included tasks:
  + Create general availability calendar
  + Create an exception calendar
  + Create a document laying out communication plan
* **Planning:**  
  This phase in the process will consist of gathering preliminary estimates and an analysis of the general problem. This allows time to figure out both the general tasks that must be completed, and how much effort will be involved in those tasks to complete the project on time. This will allow planning the proper scheduling of tasks based on their estimated times to reduce tasks related delays in later stages of the process. Adjustments will be made as necessary throughout the entire process.  
  Included tasks:
  + Analysis of the problem
  + Estimations for effort to solve the problem
  + Create a document laying out the software project management plan
* **Modeling(Design):**  
  Towards the end of the planning phase, the modeling and design of the software can begin. This includes gathering a definitive set of requirements for the program, the design of the correlating algorithms, and the development of the testing plan. This is to ensure all requirements of the program are met, and reduces the time spent on the coding of the software.  
  Included tasks:
  + Gather software requirements
    - Develop Use Cases to develop a list of requirements
    - Develop Test Expected outcomes
  + Develop algorithms corresponding to the requirements
    - Create diagrams to visually describe relations and flows
  + Ensure each algorithm function matches a requirement
  + Ensure each requirement fits into an algorithm
  + Develop test cases for the algorithms to find possible errors
* **Construction:**  
  After the modeling and design of the software is completed, the algorithms will be converted into code. Testing on pieces of the software using the test cases is expected to take place both throughout the coding process, as well as upon its completion.  
  Included tasks:
  + Convert algorithms into code
  + Ensure all code matches an algorithm
  + Ensure each algorithm has a coded representation
  + Apply test cases to the code
  + Debug any discovered errors and correct them then re-apply test cases to the code

* **Deployment:**  
  This step takes the place of a presentation and demonstration of the software. This is to occur upon the expected completion of the software on April 28, 2017.  
  **Included tasks:**
  + Prepare final document
    - Prepare instructions to run code
  + Prepare presentation