**1. Title Page/Project Title:**  
    - Infinity Starship  
    - Humberto Garcia   
    - Date of submission: Sept 10, Version number: 0.1.0

**2. Executive Summary/Objective:**  
    - To create an arcade type endless vertical 2D space shooter where the player must try to survive the longest while killing waves of enemies with a score-based system until a game over with losing 3 lives.

**3. Introduction/Background:**  
    - For many enjoyers of 2D space shooters or just games in general. People will have fun trying to play it for the fun of the retro-arcade nostalgia feel and the space fantasy of shoot’em up mechanics that will run locally on their desktop Windows computer through keyboard-based controls. They can decide to play casually for the fun of surviving as long as possible, or for the competitiveness of the scoring-system, to beat the current high scores stored from their friends or family.

**4. Features**  
    1. Play Screen Window with the main movable spaceship (Starship) that is controlled by the player (Left to Right).  
    2. Enemy UFOs that give score points.  
    3. Shooting laser system that the player controls. Also have enemies shoot at random to try to kill the player.  
    4. Score system that keeps track/updates of points accumulated for destroying enemies and/or proceeding to next wave of enemies.  
    5. Infinite waves system that increases difficulty until player dies.  
    6. Life system, where the player and enemies die on laser collision or enemies reach player.  
    7. Game Over Window Screen, telling user their overall score, asking user for a specified player ID to be known by, and adding their name alongside their score to a leaderboard scoring storing system that can be also accessed from Leaderboard button in Main Menu.  
    8. Very Basic Main Menu Window Screen with Title, Play button, Leaderboard button, How to Play button, and Exit.

**5. Technology to Be used**

UI/Frontend: Windows Forms App (WinForms) with C# .NET Framework

Backend Programming to access Server Data/Data Storage: C# with ADO.NET (Using OLE DB probably)

Database: Microsoft Access Database (Useful for simplicity), or MySQL or SQL Server (May not use since it may be overkill)

**8. Methodology/Development Approach:**  
    - Agile methodology with sprints that highlight most needed features from timeline/milestones created in step 9 week/s time frame. After completion of sprint, review what’s been completed, what needs to be adjusted, and work on the next sprint with next main needed requirements/features.

**9. Timeline & Milestones:**  
    - Week 1-2: Requirement gathering, setting up Visual Studio environment, and database requirements.

    - Week 3-4: Set up Play Screen Form (As gameboard) and gather requirements of the size of form and the graphics pixel sizes (basic shapes) that will be used for ease of coding them into the screen later. UML rough Diagrams of the classes and objects needed and their relation to the others.

    - Week 5-6: Create the spaceship (Starship Class), enemy (UFO Class) and begin coding the basic movement of the spaceship user controller (Starship Class), as well as the enemies moving by themselves. Create rough ERD of Data modelling the entities and their relation to others.

    - Week 7-9: Create shooting system (Laser Class) for both the user (shooting by command) and the enemies (shooting at random). Create collision (both for player and enemies) with simple temporary game over and next wave conditions as well as the basic score system keeping track of every game score resetting at zero after each games done (Score Class).

    - Week 10-12: Begin creating and connecting the database file that will be keeping the scoring system and add those scores to the database file in relation to the player ID. Frontend development on the Game Over Window Screen asking the user for player ID to be stored with relation to their score, updating the database file automatically and showing the existing current top 3 high scores.

    - Week 13-14: Frontend development on very basic design of the forms (Main Menu Window Form, How To Play Window Form, and Leaderboard Window Form). Set Main Menu to open the others (Main Menu Being the Parent Form). Have players be able to access visual representation of the database High Scores in the Leaderboard window if selected.

    - Week 15-16: Any bugs or polishing for any logged errors in priority of high severity. Getting ready for final presentation.

**10. Expected Outcome:**  
    - The result of the end project should be a small functional playable endless space invaders-like (Copyright of Taito Corporation in Japan, licensed to Midway in the US) inspired game prototype that runs locally as a Windows desktop application through keyboard controls, with a scoring system connected through the database.