Development Specification

Battleship

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1. Introduction

1.1. Document Identifier

This project is a game (Battleships) written in C++. In this document will be shortly described everything you need to know about this project.

1.2. Scope

Introduction section provides overview of the document content as well as the brief description of the project requirements. Section Definitions of Terms and Acronyms includes description of all the terms and acronyms used in the document. Section References has links to the documentation and sources used to build this document. Problem Statement Section briefly describes the requirements and purpose of the project. In subsection Overview of Solution is described the architecture of the solution and subsection Source Code Organization describes The features that the project should support. Source Code Organization section describes the structure of the project files (sources, documentation), including the folder hierarchy, description of the build and test environments. Description of the Solution section includes details on the solution.

1.3. Definitions of Terms and Acronyms

There aren’t any terms or acronyms in this project.

1.4. References

There aren’t any references in this project.

2. Problem Statement

The project is a game named Battleship written in C++. The requirement was to write it without using any classes and objects. So it is written using only functions. Below is written functional features of the product:

1) Creation of game battlefield of 10x10 plates.

2) The Program randomly genereates coordinates. - 1 Battleship of 4 squares, 1 Destroyer of 3 squares, 1 ship of 2 squares and 1 ship for one square

3) Providing a simple parameters based way of firing shots for the console application.

2.1. Overview of Solution

For this project there are used only functions as it was required by the customer. Here are the main function for the project:

1) create_sea – creates two dimensional array for the board (sea).

2) show_sea – function is use for displaying the sea

3) put_horizontal – puts the ship in horizontal position

4) put_vertical – puts the ship in vertical position

5) kill_ship – this function is for shooting the ships

2.2. Source Code Organization

- Battleship – the top directory
    - src – contains the source code of the project
    - bin – contains the executable file

- obj – contains the object files of the project
- ReadMe – short description of the project and how to use it
- makefile – the top makefile for building the project
- tests – the test case implementation
- docs – all documentation that is needed

3. Description of the Solution

For creation of the board (sea) is used two dimensional array 10x10 where 0 defines the sea an 1 defines the ships. The program randomly genereates coordinates. But before putting it checks whenever the coordinates which are typed by player are free of other ships, there aren’t any ships next to it and if the coordinates are in the boundary of the board, and if note, program will ask you to type new coordinates until player types proper ones. After putting the ships in proper positions program will ask you to type the coordinates for shooting and will tell you if you missed, destroyed or damaged the ship. The program will also tell you if you shoot second time on the same position or if you shoot out of board. After each shooting program checks if there are any ships left. If there are, player will type the coordinates until all ships are destroyed. After destroying all ships the game will over.