MSSE SOFTWARE, INC

Test Plan for

GolfScore

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Contents

1.0 Introduction

1.1. Objective

The Test Plan is an aggregation of information, which describes the entire test activity for this project. It covers the entire testing effort (unit, development test, system verification test, and Beta). It identifies the product requirements, schedules, resource requirements (people, effort and equipment), quality, assumptions, exclusions, and risks.

A preliminary Test Plan is prepared for the Project Team during the System Phase of PEAQ Process. This Test Plan will be updated in the earliest possible time of the Implementation Phase, so that progress can be tracked during implementation.

1.2. Project Description

GolfScore is a software application designed to process golf tournament data and generate comprehensive results for each golfer across multiple courses. The program operates by receiving input from a text file, following the specifications outlined in the Software Requirements Specification (SRS). Upon processing the input data, GolfScore produces three distinct output text files, adhering to the guidelines detailed in the SRS documentation.

1.3. Process Tailoring

The GolfScore program has been meticulously tested to ensure its functionality and reliability. The testing process follows a structured framework encompassing various phases to thoroughly validate the software.

- Entrance Test: This phase focuses on verifying the program's ability to execute correctly and handle input parameter errors according to the specifications outlined in the Software Requirements Specification (SRS). Detailed test cases for Entrance Testing are provided in Appendix C, referencing the SRS documented in Appendix A.
- Main Test: The Main Test phase aims to validate the accuracy of program execution. It scrutinizes whether the program precisely processes input data as specified and generates the expected output. Additionally, the program's handling of input and output errors is thoroughly assessed for correctness. Appendix C provides a comprehensive description of the Main Testing test cases.
- Exit Test: In the Exit Test phase, the program's output is scrutinized to ensure it meets the requirements. It verifies if the program has produced the necessary outputs, saved them in the correct format, and stored them in the designated location as per the specifications. The Exit Testing test cases are detailed in Appendix C.
- Regression Test: Following the identification and resolution of any defects uncovered during testing, a Regression Test is performed. This involves rerunning all tests to confirm that the software behaves correctly after addressing any issues that arose during earlier testing phases.

The test plan draws upon references, including the Software Requirements Specification for GolfScore (Revision 1, July 18, 2017), and the System Verification Test Plan for Advanced Color Module (Revision 2, February 22, 2000), to ensure comprehensive coverage and adherence to established standards.

By meticulously executing these testing phases and referring to the provided references, the GolfScore program undergoes rigorous validation, ensuring its functionality, accuracy, and robustness in meeting the specified requirements.

2.0 Assumptions/Dependencies

The development team adheres to a comprehensive testing strategy, including unit testing during the code development phase and integration testing to ensure seamless integration of individual components. Additionally, customer validation testing is conducted jointly by field personnel and customers to validate the software's functionality and usability in real-world scenarios.

To meet the established schedule, the development team is committed to delivering the GolfScore program by May 25, 2024. This timeline aligns with project milestones and ensures timely availability of the software to stakeholders.

By diligently executing unit tests, integration tests, and customer validation testing, the development team maintains a high standard of quality assurance throughout the software development lifecycle, ultimately delivering a robust and reliable product within the specified timeframe.

3.0 Test Requirements

1. **Entrance Tests:**
    - Programming Language Compatibility: The program is written in either C or C++.
    - Operating System Compatibility: The program runs on a PC running Windows 2000 or any later version.
    - Executable Type: The program will run as a stand-alone executable.
    - Execution Method: The program can be run from the command line prompt.
    - Input Parameter Validation: The program is run with valid input parameters.
2. **Main Tests:**
    - Number of Golf Courses: The number of golf courses specified for the tournament must be from 1 to 5.
    - Golfer Participation: Each golfer is expected to play each course once. The number of golfers entered in the tournament can be from 2 to 12.
    - Par Validation: Par for holes on each course must be either 3, 4, or 5.
    - Score Validation: Score earned by a golfer for each hole played is between 0 and 6 (inclusive).
    - Course Records: The first set of records in the input file (course records) exist and follow the specified format for each entry. There is a delimiter record that signals the end of course records.
    - Golfer Records: A second set of records (golfer records) exist in the input file and each entry follows the specified format. There is a delimiter record that signals the end of the input file.
3. **Exit Tests:**
    - Report Generation: The program should produce a number of reports corresponding to the specified options.
    - Report Saving: The generated reports should be saved as text files in the specified output directory (or if not specified, in the directory of the input file) with the extension ".rep".
    - Tournament Ranking Report: If requested, the tournament ranking report should contain a list of all golfers in the specified format. The list should be in descending order of final score and should be saved with an output filename of trank.rep.
    - Golfer Report: If requested, the golfer report should contain a list of all golfers in the specified format. The list should be alphabetical with respect to the golfers' last name and should be saved with an output filename of golfer.rep.

- Course Report: If requested, the course report should contain a section for each Golf Course listed in the input Course Records in the specified format..

4.0 Test Tools

To facilitate the testing process effectively, the following testing tools are necessary:

1. Defect Reporting and Tracking Software:

A defect reporting and tracking software enables testers to systematically document identified issues and track their resolution progress. Popular options include Jira, Bugzilla, or even a custom-built solution tailored to the project's needs.

2. Installation Media for Multiple Windows Versions:

Having installation media for various Windows versions beyond Windows 2000 ensures comprehensive compatibility testing. This includes versions such as XP, Vista, 7, 8, 8.1, and 10. Virtual machines can be set up to emulate different Windows environments, allowing testers to verify the program's functionality across diverse operating system configurations.Resource Requirements

5.0 Test Schedule

No.	Test	Start	Finish
1	Test Development	05.05.2024	25.05.2024
2	Program Availability	25.05.2024	--
3	Entrance Testing	26.05.2024	01.06.2024
4	Main Testing	02.06.2024	16.06.2024
5	Exit Testing	16.06.2024	22.06.2024
6	Regression Testing	22.06.2024	30.06.2024

6.0 Risks/Mitigation

The absence of a program enforcing compliance with input data structure significantly increases the likelihood of encountering errors in the input data.

7.0 Metrics

The following metrics data will be collected. Some will be collected prior to, and some after product shipment.

Prior to shipment:

Effort expended during DVT, SVT and Regression

# of defects uncovered during DVT, SVT and Regression, and development phase each defect is attributable to

Test tracking S-Curve

PTR S-Curve

After shipment:

# of defects uncovered and development phase each defect is attributable to

Size of software

Appendix A – Detailed Resource Requirements

No.	Test	No of Personel	No of Hours
1	Test Development	3	80
2	Entrance Testing	3	40
3	Main Testing	3	80
4	Exit Testing	3	40
5	Regression Testing	2	40

PCs that are capable of hosting virtual machines are required such that the program can be tested on multiple versions of Windows.

A virtualization software is required such that multiple versions of Windows can be installed to test the program.

Appendix B – Detailed Test Schedule

No.	Test	Start	Finish
1	Test Development	05.05.2024	25.05.2024
2	Program Availability	25.05.2024	--
3	Entrance Testing	26.05.2024	01.06.2024
4	Main Testing	02.06.2024	16.06.2024
5	Exit Testing	16.06.2024	22.06.2024
6	Regression Testing	22.06.2024	30.06.2024

No.	Test	Dependencies
1	Test Development	3 PCs 3 Personnel
2	Program Availability	GolfScore Progra
3	Entrance Testing	3 PCs 3 Personnel Virtualization Software
4	Main Testing	3 PCs 3 Personnel Virtualization Software
5	Exit Testing	3 PCs 3 Personnel Virtualization Software
6	Regression Testing	2 PCs 2 Personnel Virtualization Software