

**Computer Science and Engineering**

**Software Engineering Standards**

**System Requirements Specification**

**Version 1.0**

Document Number SRS-001

Project Team Number A11

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**REVIEW AND APPROVALS**

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**REVISION LEVEL**

|  |  |  |
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| **Date** | **Revision Number** | **Purpose** |
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# **1. INTRODUCTION**

## **1.1 Purpose**

MOBA Matchmaking is a matchmaking application that will make the process of finding fellow players a more fun and enjoyable experience by introducing other factors besides skill into the equation. Users will be able to set their own preferences for the type of players they would like to be matched with.

The purpose of this document is to explain the purpose and features of the system: what the system will do, what its system interfaces are, etc. This document is intended for the developers so they will understand how to design the application.

# **2. SCOPE**

This application will be a MOBA Matchmaking system for players of Dota. Users of this application will create accounts that are linked to their Dota profiles. They are able to set desired preferences of the type of players they expect to be matched with. Our algorithm takes into account these preferences and other factors to decisively match players in the database. Once matchmaking is complete, the user will be presented with a matched player’s profile which includes: in-game statistics, preferred play style, favorite characters, etc. The user is then able to determine whether or not they would like to play with this matched player. A player rating system is implemented so that the user will be able to the players they’ve played with. Overall this application is designed with the user’s freedom of choice in mind in order to create a positive experience for all our users.

## **2.1 Identification**

Systems Requirements Specification, SRS-001, Version 1.0

## **2.2 Bounds**

* One basic type of user.
* Users can create a profile, send private messages, and make public posts (requests to join party).
* Login and password is used for the identification of users.

## **2.3 Objectives**

* Priority will be given to developing an interface the users can use to coordinate teams and review various statistics
* Incremental lifecycle
* Software Requirement (SRS) Version 2.0 3/21/2016
* Software Project Management Plan (SPMP) 3/30/2016
* Software Analysis Specification (SAS) 4/11/2016
* Software Design Document (SDD) 4/25/2016
* Project Completion and Finished Product Fall 2016

# **3. OVERALL SYSTEM OVERVIEW**

## **3.1 Context Diagram**

Credential   
Management

Direct

Messaging

Add Friends

User

Join Party

Rate

Teammates

Public Text

Post

## **3.2 Additional Descriptive Items**

### ***3.2.1 Product Functions***

* Matchmaking service to match players with others of their preference.
* Player rating system
* Partner system for players who would like to form teams with their matches.
* Public posting ability
* Profile management

### ***3.2.2 User characteristics***

* Create a user-level account.
* Users can initiate a matchmaking queue with up to four members.
* Users are able to communicate with other users.
* Users are able to create public posts.
* Allow the user to decide on whether to play with a matched player.
* Ability to rate a player after playing a match.
* Ability to create partners.
* Users can initiate a team matchmaking queue.

# **4. DOCUMENT OVERVIEW**

## **4.1 Description of Document**

The rest of the Software Requirements Specification (SRS) includes:

* Section 5 contains references to the Software Project Management Plan (SPMP).
* Section 6 contains Business requirements. This section is subdivided into 6 subsections for Technology, Economics, Regulatory and Legal, Market Considerations, Risks and Alternatives, and Human Resource and Training.
* Section 7 contains specific requirements which is to be completed in Software Requirements Specification (SRS) Version 2.0.
* Section 8 contains the test plans with scenario testing and required simulators.
* Section 9 contains the review process for quality.
* Section 10 contains the traceability process.
* Section 11 contains the evolution of the Software Requirements Specification (SRS) throughout the life cycle.
* Section 12 contains explanations for certain implementations.
* Section 13 contains notes explaining certain decisions.
* Section 14 contains tables for tracking schedule and defects.

## **4.2 Organization**

The Software Requirements Specification (SRS) is organized into 14 sections with each section having its own subsections. Section 1, Introduction, explains the purpose the Software Requirements Specification (SRS). Section 2, Scope, which contains the identification of the document, system description, bounds, and objectives. Section 3, Overall System Overview, describes general factors that affect the product and its requirement. Section 4, Document Overview, describes the organization of the document. Section 5, Reference Document, contains reference documents to the Software Project Management Plan (SPMP). Section 6 contains Business Requirements.

Section 7, Specification Requirements, is N/A in current Version 1.0. Section 8, Test Plan Requirements, contains future testing of implemented functions. Section 9, Qualification Provisions, describes how the SRS will be reviewed. Section 10, Requirements Traceability, describes how each requirement is traceable. Section 11, Evolution of the SRS, describes possible future revisions of Version 1.0. Section 12, Rationale, contains explanations for each implementation. Section 13, Notes, contains additional information and explanation for the requirements. Section 14, Appendices, contains tracking tables for schedule and defects.

# **5. REFERENCE DOCUMENTS**

See next release for Software Project Management Plan (SPMP).

# **6. BUSINESS REQUIREMENTS**

# **6.1 Technology**

## **6.2 Economics**

## **6.3 Regulatory and Legal**

## **6.4 Market Considerations**

## **6.5 Risks and Alternatives**

## **6.6 Human Resources and Training**

# **7. SPECIFIC REQUIREMENTS (DESCRIPTIVE FUNCTIONAL AND NON-FUNCTIONAL REQUIREMENTS)**

Section 7 is N/A in Version 1.0. Will be completed in Version 2.0

## **7.1 Functional Descriptive Detailed Requirements**

## **7.2 Requirement Use Cases**

## ***7.2.1 Use Case Diagram***

## ***7.2.2 Use Case Descriptions***

## **7.3 Non-Functional Descriptive Detailed Requirements**

## ***7.3.1 System Capabilities, conditions, and constraints***

## ***7.3.2 Physical Resource Requirements***

## ***7.3.2.2 Computer Hardware Resources Requirements***

## ***7.3.2.3 Computer Software Requirements***

## ***7.3.2.4 Computer Communications Requirements***

## ***7.3.3 Environmental Conditions***

## ***7.3.5 Safety Requirements***

## ***7.3.6 Security and Privacy Requirements***

## ***7.3.7 System Human Interfaces***

## ***7.3.8 System Maintainability***

## ***7.3.9 System Quality Factors***

## ***7.3.10 Design and Construction Constraints***

## ***7.3.10.1 Life Cycle Model***

## ***7.3.10.2 Policies and standards - Methods, tools, and techniques***

## ***7.3.11 Personnel-Related Requirements***

## ***7.3.12 Training-Related Requirements***

## ***7.3.13 Logistics-Related Requirements***

## ***7.3.14 Packaging Requirements***

## ***7.3.15 Precedence and Critically Requirements***

## ***7.3.16 Other non-functional Requirements***

# **8. SYSTEM TEST PLAN REQUIREMENTS**

* Product will be tested with a small sample of users to determine that the implemented functions work as intended.
* A larger user base will be introduced to test the endurance of the system.

## **9. QUALIFICATION PROVISIONS**

## **9.1 Review Process**

### ***9.1.1 Self-Check***

Each member of the project is required to self-check the Software Requirements Specification (SRS). During the self-check each reviewer will be thoroughly looking for correctness, ambiguity, completeness, consistency, stable, verifiable, modifiable (malleable) and traceable. That can lead to future faults. After completing the self-check, each member must sign and date.

### ***9.1.2 Walkthrough***

Walkthrough team consist of four to six individuals. These members should be experienced senior technical staff members because they tend to find faults that would have a major negative impact on the project. There will be at least one representative for each workflow from the project group. There is also a client representative and a SQA representative. Material for the walkthrough needs to be distributed to the participants in advance. Each reviewer should study the material and develop two lists. First is a list of items the reviewer does not understand and another list of items the reviewer believes to be incorrect. The person leading the walkthrough will be the SQA representative. There are two ways to conduct the walkthrough. The first is where the participant presents their list of unclear items and items they think are correct. The second is document driven. The person responsible for each document should walk the participant through the document. The second type is interactive between the presenter and the participants. Faults found throughout the walkthrough are to be recorded and corrected later on.

### ***9.1.3 Inspection***

Inspections have five formal steps and should go beyond a walkthrough. The first is an overview of the document to be inspected is provided to the participants. In the preparation step, the participants try to understand the document in detail. Next the participant walks through the document with the inspection team. Fault finding commences after. Within one day the leader of the inspection team (the moderator) must produce a written report of the inspection. The next step is rework, where those responsible for the documents correct faults that were noted on the written report. The last step is follow-up, where the moderator must ensure that every issue raised has been resolved satisfactorily, by either fixing the document or clarifying items incorrectly flagged as faults. If more than 5 percent of the material inspected has been reworked, then the team must reconvene for a 100 percent re-inspection.

# **10. REQUIREMENTS TRACEABILITY**

## **10.1 Traceability**

Requirements should be have forward (to all artifacts spawned by this document) and backward (to previous stages of development) traceability. Forward traceability will allow in a forward direction tracing from requirements to postdelivery workflows. Backward traceability allows tracing in the direction of postdelivery to requirements workflows.

# **11. EVOLUTION OF THE SRS**

The Software Requirements Specification (SRS) Version 2.0 will have a completed Section 7. Tracking tables in Section 14 will be updated throughout the process. Section 2 deadlines maybe be postponed if project is not on time. Overall system functions in Section 3 may change as some functions are no longer necessary or additional functions are required. Section 12 will have additional rational if explanation is required. Section 13 will contain additional notes if required.

Overall Software Requirements Specification (SRS) Version 1.0 will undergo changes in future the version as faults, deficiencies, shortcomings, inaccuracies, or changes in system environment arises.

# **12. RATIONALE**

No additional rationales in Version 1.0.

# **13. NOTES**

No additional notes in Version 1.0.

# **14. APPENDICES**

## **14.1 Schedule Tracking**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Artifact or Deliverable | Who (Individual or Team) | Estimated | Actual | Difference |
| Software Requirements Specification (SRS) Version 1.0 | Team A11 | 3/7/2016 | 3/7/2016 | No difference |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

**Cumulative**

|  |  |  |  |
| --- | --- | --- | --- |
| Who (individual or Team) | Estimated | Actual | Difference |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

## **14.2 Defect Tracking**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Artifact or Deliverable | Who (Individual or Team) | Estimated | Actual | Difference |
| Software Requirements Specification (SRS) Version 1.0 | Team A11 | 25 | N/A | N/A |
|  |  |  |  |  |
|  |  |  |  |  |

**Cumulative**

|  |  |  |  |
| --- | --- | --- | --- |
| Who (individual or Team) | Estimated | Actual | Difference |
|  |  |  |  |
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