Senior Software Project 1
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Software Requirements Specification

Document

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1. Introduction

1.1 Purpose

The purpose of this document is to detail the development of the Heartland Gaming Expo software. The document will go over every aspect of the software that we are going to develop. This document will help analyze the software and give us a better understanding of the project. The document will specify the requirements and specification of the software.The audience of this document includes the people who are going to use the software, and future developers. This document is the first step in the Software Development Cycle.

1.2 Scope

This software will work as a way to register for, judge contestants of, and administrate for Heartland Gaming expo. It will provide a way to register the teams for the competition using a website that will handle multiple registrations occurring at the same time. It will provide a way for the judges to judge each team by using an android app that backs information up locally so information is not lost if there is no network connection. The software will provide the administrator with a website from which he can get the results from the competition and modify the information for subsequent years of the competition.
The objective of this software is to overcome problems with the current implementation such as the inability for the current users of the current software to maintain the software. The benefit to this will be an easier way for the current users to interact with and update the information they need within the software. The software will be used at the Heartland Gaming Expo as the infrastructure needed for registering teams, judging teams, and administrating for the event.

1.3 Definitions, Acronyms, and Abbreviations.

1.3.1 QR code is short for Quick Response code which stores information, such as urls, so a user can use a QR reader to give them the information held within the QR code.
1.3.2 Metric: A sub-score within a category, such as “Graphics” or “Awesomeness”

1.4 References

This section has been omitted as we have no documents we will be referencing

1.5 Overview

This SRS document contains, in section 2, an overall description of the project and requirements at a level for non-technical readers and is primarily for potential users and customers. Section 3 discusses the design in more detail, this section is primarily for

developers. Section 4 discussed how changes to the SRS will occur. Section 5 tells who approves this document and section 6 contains extra information.

2. The Overall Description

The system is to be used for the administration, scoring, and registration at the Heartland Gaming Expo. The system has three primary functions, registration, judging, and administration with associated requirements.

(1) It must support the registration of teams and the assignment of teams to a category.
(2) It must support the judging of a team's submission by the set metrics.
(3) It must support the collection of the scores into a centralized location
(4) It must support user roles and authentication, set up by the administrator.
(5) It must support administration of the competition, including the setup of the application for a new competition as well as the management of an ongoing competition.

2.1 Product Perspective

This project will be independent and self-contained.

2.1.1 System Interfaces

The project does not interface with any external systems. We will only be interacting within the scope of the project.

2.1.2 Interfaces

While the interface is platform specific, some broad generalizations can be made. There are 3 primary interfaces.

(1) The first interface is that for administration, which is a website. This site should be navigable on a smartphone, tablet, and PC.
(2) The second interface is for registration, which is also a website. This site will primarily be navigated on a PC, but should also work on a tablet or smartphone.
(3) The judging will take place on an Android app. It will be navigable on a touchscreen and familiar to anyone who has used smartphone apps.

2.1.3 Hardware Interfaces

The app will be running on Android tablets. The exact specification of the tablet can change, as the client uses multiple tablets of different specifications. Example devices

will be provided for testing purposes, and the exact details can be gathered then. We will build the app on the android software platform.

2.1.4 Software Interfaces

This system will not be interacting with any external software, and will be entirely self-contained. The database used should be standalone and the application is not designed to work with a pre-existing or multi-purpose database.

2.1.5 Communications Interfaces

The communication will take place entirely on pre-existing technology and is managed by the operating systems of the host. This technology will primarily be TCP/IP networking.

2.1.6 Memory Constraints

This system should have no practical memory limitations. While a minimum amount will be necessary depending on the platform provided by the client, it is highly unlikely such a requirement will have a meaningful impact on the design of the product.

2.1.7 Operations

There will be three primary user roles.

(1) Registrar
This role will have permission to view and update the list of participants and submissions. As it will be used in a public setting, it must have limited access to any sensitive data.

(2) Judge
This role will be able to view all submissions, as well as quickly identify those they have already scored. They will have permission to score games and update the scores they have given. They will not have access to add or delete submissions, nor will they be able to view scores given by any other judges.

(3)Administrator
This role will have full access to all information, including adding and removing participants, changing categories, adjusting metrics within a category, viewing and adjusting scores, re-initializing the database for a new competition, and printing out the final scores.

2.1.8 Site Adaptation Requirements

When deploying the application to a new system, the database should be re-initialized to prevent invalid or corrupt data.

2.2 Product Functions

The system has three primary functions.

(1) Registration. The system must be able to register participants for judging and assign them a category.
(2) Judging. Judges must be able to find and score a participant's submission on a variety of metrics.
(3) Administration. The administrator must be able to define categories and metrics, as well as re-initialize the database in preparation for a new competition. Also, the administrator must be able to print out the rankings in each metric for a particular category.

2.3 User Characteristics

As the users will primarily be composed of volunteers, we must assume that the user will be non-technical and design the system in such a way that no prior knowledge will be necessary to use it.

2.4 Constraints

There are four primary constraints in the design of the system.

(1) The number of users will act as a constraint as the software must be able to handle that number.
(2) The hardware for the judging application will be running a version of Android. Which version is running could act as a limitation and updates to the system must be able to be handled by our software.
(3) Due to the need for reliability of the database, one constraint is that judges may lose network connection at any time. We must ensure that data is not lost during these times by storing the information locally until network connection is regained.
(4) We must be able to handle multiple teams registering at the same time as well as multiple judging applications altering the database at the same time.

2.5 Assumptions and Dependencies

The software is dependent on Android version. A stable Internet connection is required to keep the app running. We have to make sure that we will always have access to the database. The android tablets should be able to host the app and have enough power to operate during the event.

2.6 Apportioning of Requirements.

The first version of the product shall consist of the website for registration and the database to store that information in. This shall provide the ability to register teams, choose a category for the team, and give each team a QR code.
The subsequent implementations will implement the judging application and the administrator website and add the necessary elements to the database for each. The judging applications will provide the judges with a way to see what teams they have and have not judged, show them the judging criteria for a team, and allow them to judge teams. The administrator website shall allow the administrator to modify the database, remove information from the database each year, and determine the winners of the different categories. This shall all occur in subsequent versions of the software.
The registration portion shall be accomplished first with all other elements being accomplished later.

3. Specific Requirements

3.1 External Interfaces

This section has been omitted as there are no external interfaces. The system should be entirely self-contained.

3.2 Functions

The system has three primary functions.

3.2.1 Registration.

3.2.1.2 Teams must have a name and project name

3.2.1.3 Teams must select a category from a predefined list.

3.2.1.4 A QR code shall then be generated for the team that can be scanned by the judges.

3.2.1.5 The team's information shall be added to the database

3.2.1.6 Registration shall be done using a user of the class "Registrar", with the exception of specific administrative action.

3.2.2 Judging

3.2.2.1 Judges shall be able to scan a team's QR code to find the judging criteria for a team and judge them.

3.2.2.2 The judge shall also have a way to determine teams they have judged and teams they have not judged.

3.2.2.3 After a team is judged, the information shall be stored in the database before scoring.

3.2.2.4 The information shall be stored locally in case the network connection is poor and shall update the database with the information when network connectivity has improved.
3.2.2.5 The application shall be able to handle device crashing without loss of data.
3.2.2.6 Judges shall be able to rescore previously scored applications.

3.2.3 Administration
3.2.3.1 The administrator shall have a website from which they can find the winners of the categories after judging in a readable format.
3.2.3.2 The administrator shall be able to change elements related to registration and judging.
3.2.3.3 The administrator shall be able to define new categories and the metrics within the categories.
3.2.3.4 The administrator shall be able to add and remove users, as well as set the role of the users.
3.2.3.5 The administrator shall be able to add and remove teams from the competition.
3.2.3.6 The administrator shall be able to reinitialize the database in preparation for a new competition.
3.2.3.7 The administrator shall be able to see judging statistics for each individual judge.

3.3 Performance Requirements

The application must be scalable to meet any given performance requirements given adequate hardware and bandwidth.

3.4 Logical Database Requirements

Any database solution should be valid for implementation, and candidates should be validated based entirely upon context with other implementations. There are no special database requirements.

3.5 Design Constraints

1. Judging application must be able to be run on an Android tablet.
2. The judging application must be highly fault tolerant, including sudden shutdown or loss of internet.

3.5.1 Standards Compliance

This section has been omitted because there are no standards for us to comply with.

3.6 Software System Attributes

3.6.1 Reliability

The factors required to have the required reliability is the ability to store information from the judging app locally until a network connection is established and the ability to have multiple applications accessing and modifying the database at the same time.

3.6.2 Availability

All facets of the application must be operational during the competition. Specifically, the database must be operational and accepting input from registration, the judges, and able to provide the results.

3.6.3 Security

The client has made it clear that security is to be de-prioritized unless future development time allows for implementation. Security should still be considered during design, but must take a back seat to immediate functionality.

3.6.4 Maintainability

The system must be able to spend the majority of the year offline and be re-activated with minimal reconfiguration.

3.6.5 Portability

The registration and administration systems should be capable of running on any platform capable of browsing the web. The judging application must be run on Android. The Android app should not be tied to a specific version of Android.

3.7 Organizing the Specific Requirements

This section has been omitted as the current organization is suitable.

4. Change Management Process

After the completion of the software, change management will be delegated to the client and they may use any process of their choosing. During development, any changes requested should be submitted in writing to the current development team, providing a written explanation of the requested change and an authorization signature from the

client. This document can then be processed and stored in order to preserve documentation upon the dissolving of any teams.

5. Document Approvals

This section has been omitted as approval is assumed by the team working on the document.

6. Supporting Information

This document has been deemed simple enough to not need sections of supporting information.