**System Proposal**

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**Short project description**

Our app is going to be called Settlers of Catan Number Randomizer. Our objectives for this project will be to focus on creating a mobile technology app that is a number randomizer for the Settlers of Catan game.

We are going to create an application that can generate a visual representation of a Settlers of Catan board, given certain parameters, and obeying game rules that ensure that the board is randomized as well as playable. The general technologies and software systems that we are going to use in creating this project will be HTML5, JavaScript, jQuery, XAMPP, PHPStorm.

**List of important requirements**

| **Name** | **Purpose** | **Description** |
| --- | --- | --- |
| XAMPP | PHP Apache distribution environment | * Development tool to use localhost like a remote host to test developed web code |
| **PHPStorm IDE** | Cross-platform integrated development environment for PHP | * Editor for PHP * Code quality analysis and syntax highlighting * Necessary for general coding development and testing |
| **GIT** | Distributed revision control system | * Used to control different iterations and versions of the project * Has history and version-tracking capabilities * Used to clone local repository in conjunction with RedHat cloud app |
| **Red Hat OpenShift Cloud** | Cloud environment | * Linked with XAMPP testing environment * Will be cloning local Git repository |
| **GroupMe Messaging Application** | Group Communication | * Used to communicate with other team members about particular issues or duties that may arise during project development |

**Possible Risks**

Development Risks

* Multiple members of the team have little or no coding experience and may not be able to significantly contribute to the creation of the algorithm.
* Some team members’ lack of programming experience may detrimentally impact their ability to assist in the HTML and CSS development of the webpage.
* The team may allow feature-creep to broaden the scope of the project beyond the capabilities and resources of the team.
* The programming languages which the team is receiving training in may not be adequate to deliver the planned application.

Technology Risks

* Insufficient backup practices coupled with hardware failure could lead to the loss of critical project work.
* Poor security practices by any of the team members or the university could result in the theft or deletion of the team’s work.
* Host servers for the application may not be able to handle traffic to the website.

Organizational Risks

* The team currently has three avenues of communication: in person, via GroupMe, and via Facebook. This could lead to a breakdown of communication if not all group members are active and engaged in all three platforms.
* Due to the intangible nature of software development, staying within schedule while delivering a high quality product may be difficult.
* The lack of financial support for the project could significantly slow down or throw the project off track.
* Eight groups are sharing one critical training resource, Professor Nguyen, which could make access to Professor Nguyen and his expertise problematic.

Legal Risks

* The rights holders of Settlers of Catan could find our project infringing on their copyright and take legal action.
* Failure to follow the license agreements associated with the project’s development applications could result in loss of access to critical programs.

**5. Technologies**

Group 8 will be utilizing the following technologies within the system:

1. jQuery

2. HTML5

3. JavaScript

4. PHP

5. CSS3

6. MySQL

**6. Documentation**

Group 8 will provide:

1. Source Code

2. Technical documentation

3. Weekly updates to project sponsor

4. Weekly group member participation evaluation

**7. Quality Control and Testing**

Group 8 will implement the following tests:

1. Functional Testing

2. Performance Testing

3. Destructive Testing

4. Usability Testing

5. Non-functional Testing

6. Scalability Testing

7. Compliance Testing

8. Stress Testing

9.Security Testing

|  |  |  |
| --- | --- | --- |
| **Project Breakdown with time efforts estimation** | **Task Work** | **Time Required** |
| **1.1** | **Application Idea Creation** | **2 hours** |
| **1.2** | **Application Logistics** | **2 hours** |
| **---------------------------------------** | **---------------------------------------** | **---------------------------------------** |
| **2.1** | **Create System Environment (IDE)** | **2 weeks** |
| **2.2** | **Begin Application Development** | **1 month** |
| **2.3** | **Begin Preparing Presentation** | **2 weeks** |
| **---------------------------------------** | **---------------------------------------** | **---------------------------------------** |
| **3.1** | **Test/Debug Application** | **2 weeks** |
| **4.1** | **Deploy/Present Application** | **1 week** |

**9. Project delivery plan by stages**

The project will be implemented in the following stages:

Stage 1. Analysis and Design

|  |  |
| --- | --- |
| Tasks | System Proposal, High Level Design |
| Deliverables | System Proposal, High Level Design Documents |
| Estimate (work days) | 4 |
| Total man-hours for stage | 14 |

|  |  |  |  |
| --- | --- | --- | --- |
| **Labor category** | **Man-hours per category** | **Staff quantity** | **Man-hours per person** |
| All Team Members | 14 | 7 | 2 |

Stage 2. Implementation

|  |  |
| --- | --- |
| Tasks | DB creation, Create algorithm, create HTML/CSS for website, code website, etc… |
| Deliverables | Working mobile website with some bugs |
| Estimate (work days) | 20 |
| Total man-hours by stage | 50 |

|  |  |  |  |
| --- | --- | --- | --- |
| **Labor category** | **Man-hours per category** | **Staff quantity** | **Man-hours per person** |
| Programmer 1 | 15 | 1 | 15 |
| Programmer 2 | 15 | 1 | 15 |
| Team Members (Support) | 20 | 5 | 4 |

Stage 3. Testing and other QA tasks

|  |  |
| --- | --- |
| Tasks | Mobile Web Application Testing |
| Deliverables | Fully working application |
| Estimate (work days) | 3 |
| Total man-hours by stage | 7 |

|  |  |  |  |
| --- | --- | --- | --- |
| **Labor category** | **Man-hours per category** | **Staff quantity** | **Man-hours per person** |
| Programming/Support Team | 7 | 7 | 1 |

|  |  |
| --- | --- |
| Tasks | Mobile Web Application deployment |
| Deliverables | Deployment of created application |
| Estimate (work days) | 1 |
| Total man-hours by stage | 3 |

|  |  |  |  |
| --- | --- | --- | --- |
| **Labor category** | **Man-hours per category** | **Staff quantity** | **Man-hours per person** |
| Programmer | 3 | 1 | 3 |

Stage 4. Deployment

**Total project time frame: 28**

**Work Days spread: 10 Weeks**

**Total estimated efforts: 44 Hours**

**Time efforts by labor category**

|  |  |
| --- | --- |
| **Labor category** | **Duration, man-hours** |
| Programmer 1 | 28, 19 |
| Programmer 2 | 28, 19 |
| Team Members (Support) | 28, 10 |
|  |  |

**Maintenance and support terms:**

Services: Subject to your download.

Exclusions: Our app will have no obligation of any kind to provide support for problems caused by or arising out of any of the following: (i) modifications to the software not made by our application; (ii) use of the software other than as authorized in the Agreement or as provided in the documentation for the software; (iii) damage to the media on which the software is provided or to the machine on which the software is installed; (iv) your negligence or fault.

Restrictions: Support is delivered in English only unless you are in a location where our application has made localized support available.

Software Upgrades: When available, our application will provide updates, upgrades, maintenance releases.

**Contact Details:**

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