**RUP Vision Document for**

**The “BSinCS” Game:**

**Defining Overview, Stakeholders, Goals and**

**Components**

**Technical Project CSCE 543**

**Gaurav Palande, CSCE, CSULB**

**Gagandeep Bansal, CSCE, CSULB**

**BSinCS**

**Vision**

**Version 1**

**Revision document History**

|  |  |  |  |
| --- | --- | --- | --- |
| **Date** | **Version** | **Description** | **Author** |
| 09/15/15 | 1.0 | Preliminary version of the BSinCS game | Gagandeep Bansal , Gaurav Palande |
| 12/13/15 | 2.0 | Added complete features | Gaurav Palande |
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# Vision

## 1. Introduction

### 1.1 Purpose

​The purpose of this document is to collect, analyze, and define high-level needs and features of “BSinCS”, an academic driven computer role playing game set. It focuses on the capabilities needed by the stakeholders, and the target users, and why these needs exist. The details of how BSinCS fulfils these needs are detailed in the use case and supplementary specifications

### 1.2 Scope

This Vision Document applies to the BSinCS game, which will be developed by the Team Dynamos, students of CECS. Team Dynamos will develop this Windows based application to serve as a game. BSinCS is an academic driven computer role playing game set which will be played in CSULB’s campus premises. The objective is to create a rich experience that help student to complete his bachelor’s with fun. BSinCS will be a multi­player game. You’ll play a single, specific character, with multiple players that are AI.It will be an entertaining game.

### 1.3 Definitions, Acronyms and Abbreviations

Abbreviations:

|  |  |
| --- | --- |
| CECS | Computer Engineering and Computer Science |
| BSinCS | Bachelor of Science in Computer Science |
| BS | Bachelor of Science |
| CSULB | California State University Long Beach |
| AI | Artificial Intelligence |
| QP | Quality Points |

### 1.4 References

Applicable references are:

* Lectures notes by the Professor Michael Hoffman https://bbcsulb.desire2learn.com/d2l/le/content/308384/Home
* University website www.csulb.edu

### 1.5 Overview

The vision document illustrates the problem with the current entertainment aspect of the education system and proposes a solution. It also describes the stakeholders and the users, along with their environments, associated with the proposed solution. The document gives an overview of the product with respect to the features, standards, requirements and supporting documentation.

## 2. Positioning

### 2.1 Business Opportunity

Simulating the experience of the BS student in CSCE department of CSULB can be an important aspect for promoting CSULB as an education destination for computer education. This involves immersing the user, in this case the gamer, in an environment which familiarizes him with the various courses available for BS within CSCE. In addition, the game will act as an entertainment medium for existing students and faculty within CSCE. The user can define the sequences of courses undertaken to achieve the BS degree during the game. This game is designed to be installed on the user’s computer. A possibility that the game be embedded on CSULB’s CECE website can also be envisioned.

### 2.2 Problem Statement

|  |  |
| --- | --- |
| The problem of | lack in variety in the current education related promotional as well as entertainment mediums within CSULB |
| affects | current and prospective BS students as well as faculty |
| the impact of which is | current and prospective students losing interest in pursuing the BS degree with CSULB |
| a successful solution would | A simple, easy to comprehend, graphical, entertaining, role playing game. The product simulates the experience of the BS student in CSCE department of CSULB. This involves immersing the user in an environment which familiarizes him with the various courses available for BS within CSCE thus generating interest in the department’s coursework. |

### 2.3 Product Position Statement

|  |  |
| --- | --- |
| For | Current and prospective BS students as well as faculty |
| Who | Feel the need for an educational cum entertainment medium that promotes the experience of obtaining a BS degree through CSULB |
| The BSinCS game | is a windows based role playing game |
| That | Provides human players, as a student, the ability to play against two computer AI’s (simulating opponents) in a race to gain Quality Points toward graduation. |
| Unlike | Current available promotional mediums in CSULB that do not promote the educational experience for obtaining a BS degree in an entertaining format. |
| Our product | Follows the player through the four years of undergraduate study that culminates with you earning a BS in CS. You begin as Freshmen. There is one human player and two AI players The students move around the game board and play Game Cards, which often present some type of challenge to the student and offer some reward for passing. The rewards take two forms: Quality Points, which move you along to graduation or the next grade. The game also includes Skill Chips which increases the player’s skill in three areas: Learning, Craft and Integrity. These three skills are what allow a player to complete a challenge |
|  | Presented in the game cards. |

## 3. Stakeholder and User Descriptions

### 3.1 Market Demographics

The target market segment includes CSULB’s current and prospective students as well as faculty who’s major or area of interest is CS. The users are anticipated to be consumers who already use computer or laptops on regular basis for personal, educational and/or business use. The game will be assessed for valuation in the near future and if integrated with future CSULB CSCE promotional campaigns, can generate income through increased enrollment.

### 3.2 Stakeholder Summary

|  |  |  |
| --- | --- | --- |
| **Name** | **Represents** | **Role** |
| Product Owner | This is a stakeholder who has requested for the proposed system and will benefit from its implementation | Major source for information regarding the environment in which the proposed system is to be implemented. Provides  Information regarding factors that may affect the systems integration in the system. |
| System Analyst | This is a stakeholder that works with the stakeholders to gather their needs. | Leads and coordinates requirements elicitation and use case modeling by outlining the system's functionality and delimiting the system; For example, identifying what actors exist and what use cases they will require when interacting with the system. |
| Requirements Specifier | This is a stakeholder that works with the Analysts to correctly translate requests/needs into requirements to be used for design | Specifies the details of one or more a parts of the system's functionality by describing one or the aspects of the requirements, this will include functional and non­functional. |
| Technical Reviewer | This is a stakeholder that must be involved regularly to  Maintain the development cycle. | Responsible for contributing feedback to the review process. This role is involved in the category of review that deals with the technical review of project artifacts. This role is responsible for providing timely, appropriate feedback on the project artifacts being reviewed. |
| Software Architect | This is a stakeholder that is primary for leading the system development. | Responsible for the software architecture, which includes the key technical decisions that constrain the overall design and implementation for the project |
| Project Manager | This is a stakeholder that is primary for leading the system development. | Plans, manages and allocates resources, shapes priorities, coordinates interactions with customers and users, and keeps the project team focused. Also establishes a set of practices that ensure the integrity and quality of project artifacts. |
| Market Analyst | This is a stakeholder that will assist our abilities to position our product successfully. | Ensures that there is going to be a market demand for the product's features and for the new service. |
| Software developer | This is a stakeholder that will develop the desired system as per the requirement | Implements, deploys and/or maintains the proposed system as per the product owner’s requirements. |

### 3.3 User Summary

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | **Description** |  | **Stakeholder** |
| Player | Primary end user playing against two AIs in the game in a race toward completing graduation. | Self |  |
| AI | End user playing against the player in the game in a race toward completing graduation. | Self |  |

### 3.4 User Environment

Initially the game will be developed as a standalone application for Windows operating system but in nearest future it will be developed for other operating systems like Mac OS and Linux. The user has to run the game on Windows operating system and start playing.

The player will play against two AI players and they will remain till end of the game. The students move around the game board and play Game Cards. The game ends with any player completing his/her graduation. This game will be played indoors as well as outdoor locations.

### 3.5 Stakeholder Profiles

*3.5.1* Professor. Michael Hoffman

|  |  |
| --- | --- |
| **Representative** | Product Owner, Requirement Specifier, Technical Reviewer |
| **Description** | Has requested for the proposed system and will benefit from its implementation. Will work with the Analysts to correctly translate requests/needs into requirements to be used for design. Is involved regularly to maintain the development cycle. |
| **Type** | Expert |
| **Responsibilities** | Major source for information regarding the environment in which the proposed system is to be implemented. Provides information regarding factors that may affect the systems integration in the system. Specifies the details of one or more a parts of the system's functionality by describing one or the aspects of the requirements, this will include functional and non­functional. Contributing feedback to the review process. This role is involved in the category of review that deals with the technical review of project artifacts. This role is responsible for providing timely, appropriate |
| **Success Criteria** | The success is completely defined by the completion of our system according to the given specification. |
| **Involvement** | Provide specification and Review the development to help evaluate our design. |
| **Deliverables** | Vision Document, Design document, Iterative working prototype of the solution till the desired solution is achieved. |
| **Comments / Issues** |  |

*3.5.2* Gaurav Palande and Gagandeep Bansal

|  |  |
| --- | --- |
| **Representative** | System Analyst, Software Architect, Project Manager, Software developer |
| **Description** | Works with the stakeholders to gather their needs. Primary for leading the system development. Develop the desired system as per the requirement |
| **Type** | Adept Software Developer |
| **Responsibilities** | Leads and coordinates requirements elicitation and use case modeling by outlining the system's functionality and delimiting the system; For example, identifying what actors exist and what use cases they will require when interacting with the system. Responsible for the software architecture, which includes the key technical decisions that constrain the overall design and implementation for the project. Ensures that the system is going to be maintainable and the architectural solution supports the functional and no requirements. Plans, manages and allocates resources, shapes priorities, coordinates interactions with customers and users, and keeps the project team focused. Also establishes a set of practices that ensure the integrity and quality of project artifacts. Implements, deploys and/or maintains the proposed system as per the product owner’s requirements. |
| **Success Criteria** | The success is completely defined by the completion of our system according to the given specification without any bugs or defects. The stakeholder will be graded for the successful completion of the project. |
| **Involvement** | The stakeholder is conducts analysis on the system, creates the solution architecture, and ensures completion of the project by following a process model. Delivers the working system by implementing, deploying, testing and then maintaining the system. |
| **Deliverables** | Project requirement Document and Customer Feedback of reviews conducted. |
| **Comments / Issues** |  |

### 3.6 User Profiles

### 3.6.1 Player

|  |  |
| --- | --- |
| **Representative** | End User |
| **Description** | The end users are typically educated, computer literate, and have access to the Internet. It is expected that each CS freshman will play this game. |
| **Type** | This is a casual user with experience in how to operate computer. |
| **Responsibilities** | The player needs to follow the game instructions and provide user input when requested. |
| **Success Criteria** | The success is completely defined by the ability of the user to play his moves. The first player to reach 100 QP wins the game |
| **Involvement** | The game being developed is for the student only so that he can complete his bachelor’s with fun. |
| **Deliverables** | Game application, Game instruction manual |
| **Comments / Issues** |  |

### 3.7 Key Stakeholder / User Needs

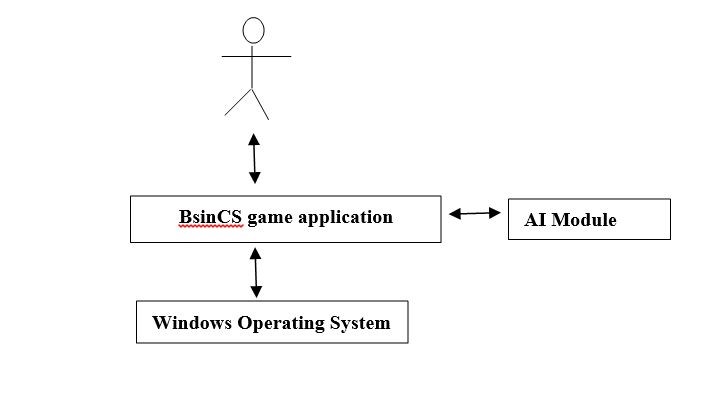
|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Need** | **Priority** | **Concerns** | **Current Solution** | **Proposed Solutions** |
| Fairness | High | Player should get fair chances in the game. | None | The turn based functionality will enable fair game play |
| Involvement | High | The system should  allow user input | None | The system waits for user input during the players turn |
| Variety in Game play | Moderate | The game play should give non consistent winners | None | The game uses randomized events during the course of game play |
| Definite purpose | High | The game should end with the winner achieving the said goal | None | The game ends when the winner  completes his graduation |
| Easy to use | High | The game should be playable without too much complications | None | Provide user friendly, highly intuitive application regardless of any computer system. |
| Responsive | Moderate to High | The game should be responsive to the user within acceptable time duration | None | The game will respond to the user input in real time |

### 3.8 Alternatives and Competition

3.8.1 There will be other CS students that are developing similar kind of game so they will be giving competition to this game.

## 4. Product Overview

### 4.1 Product Perspective



The “BSinCS” is an academic driven computer role playing game set that van be played by CSULB’s current and prospective students as well as faculty whose major or area of interest is CS. Team Dynamos is developing Window’s version of the game. The user has to run the game on Windows operating system and start playing.

The player will play a single, specific character, with multiple players that are AI. The students move around the game board and play Game Cards, which often present some type of challenge to the student and offer some reward for passing.

### 4.2 Summary of Capabilities

The table in this section identifies the main capabilities of the Game in terms of benefits and features.

|  |  |
| --- | --- |
| **Customer Benefit** | **Supporting Features** |
| Convenient, flexible access to the system | Local access |
| Student having difficulty in operating can play easily. | The game progresses with just click of mouse button. |
| Growth of interest in the CSCE graduation coursework | The inclusion of CSCE theme for the game |

### 4.3 Assumptions and Dependencies

* The player will complete the game.
* The system used to play the game supports all features of the game
* The execution of game will depend upon the move made by the user and AI.

### 4.4 Cost and Pricing

It is anticipated that existing computers of the developers will be used as the target machines and that no hardware budget is required. However pricing of the product will be decided in near future

### 4.5 Licensing and Installation

* There are no licensing requirements for V1.0 of the game, as it will be available only to CSULB college students.
* Installation of the game must be available via diskette, CD.

## 5. Product Features

* 1. **Earn a BS in CS**
  2. **Begin as Freshman**
  3. **One human player**
  4. **Provide two "AI" players**
  5. **Move "student" around the board**
  6. **Display ECS map**
  7. **Display CSULB map**
  8. **Display Game Card**
  9. **Play Game Card**
  10. **Collect "Quality Points"**
  11. **Collect Skill Chips**
  12. **Collect "Learning Chips"**
  13. **Collect "Integrity Chips"**
  14. **Collect "Craft Chips"**
  15. **Complete a challenge**
  16. **Display (or list) prerequisites for challenges**
  17. **Player card in correct room**
  18. **Check for correct room for card play**
  19. **Check player for prerequisites for challenge**
  20. **Lose Quality Points for playing in wrong room**
  21. **Lose Quality Points for lacking prerequisites**
  22. **Keep total Quality Points for each player**
  23. **Keep total of all player's QP (TQP)**
  24. **Advance to Sophomore Year when TQP >= 60**
  25. **Advance to Junior Year when TQP >= 90**
  26. **Advance to Senior Year when TQP >= 120**
  27. **Remove certain Freshmen Cards**
  28. **Remove all Freshmen Cards**
  29. **First player to 100 QP wins**
  30. **Name the players**
  31. **Provide a game board token for each player**
  32. **Move token around board**
  33. **Randomly select human player from 3 fixed players**
  34. **Set up Player1 (with Skill Chips)**
  35. **Set up Player2**
  36. **Set up Player3**
  37. **Start each player in ECS 308**
  38. **Deal 5 cards to each player**
  39. **Make human player go first**
  40. **AI player1 plays second**
  41. **AI player2 plays third**
  42. **Draw one card**
  43. **Place card in player hand**
  44. **Maintain player hand of cards**
  45. **Initial shuffle deck of cards**
  46. **Reshuffle deck of cards**
  47. **Maintain discard deck**
  48. **Move player token zero spaces on board**
  49. **Move player token one space on board**
  50. **Move player token two spaces on board**
  51. **Move player token three spaces on board**
  52. **AI players calculate which room to move to**
  53. **AI players determine which Game Card to play**
  54. **Discard Game Card after playing**
  55. **Discard Game Cards for each player until Player has < 8 (at turn end)**
  56. **Player gains Skill of their choice when QP % 15 == 0**
  57. **Maintain play turn**
  58. **Reuse discarded Game Cards**