

Physics-Based Chipmunk2D Game

Software Requirements Specification

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Revision History

Author	Date	Version	Notes
Steven Palmer	October 7, 2015	1.0	Created document

1 Project Drivers

1.1 The Purpose of the Project

The purpose of this project is to produce a game that will be used as a demonstration for students in a third year software engineering game design course at McMaster University. The game will incorporate the [Chipmunk2D](#) physics library and highlight its capabilities.

1.2 The Stakeholders

1.2.1 The Client

The client for this project is [Dr. Spencer Smith](#) of the Computing and Software department at McMaster University.

1.2.2 The Customer

The customer for this project are students who will take the game design course in the future.

1.2.3 Other Stakeholders

Other stakeholders include future instructors of the game design course and other related courses.

2 Project Constraints

2.1 Mandated Constraints

2.2 Naming Conventions and Terminology

The terminology used in this project is given in [Table 1](#).

Table 1: List of terminology

Term	Definition
Boss	Important enemy with increased stats
Bounds	The boundaries inside which game play occurs
Character	A
Enemy	Hostile NPC; normally attacks hero
Hero	The main character of the game controlled by the user
NPC	Non-playable character; may be friendly or hostile

2.3 Relevant Facts and Assumptions

3 Functional Requirements

3.1 The Scope of the Work

3.2 Business Data Model and Data Dictionary

3.3 The Scope of the Product

3.4 Functional Requirements

Requirement #:	1	Requirement Type:	3.4	Use Case:	1
Description:	The hero shall remain in bounds				
Rationale:	The hero must remain in the intended boundaries of play for the game to function properly				
Originator:	Steven Palmer				
Fit Criterion:	Hero is unable to pass through walls and other obstacles				
Cust. Satisfaction:	5	Cust. Dissatisfaction:	5		
Priority:	High	Conflicts:	None		
Supporting Materials:	None				
History:	Created October 7, 2015				

4 Non-functional Requirements

4.1 Look and Feel Requirements

4.2 Usability and Humanity Requirements

Requirement #: 2		Requirement Type: 4.2		Use Case: 1	
Description:		The game shall be entertaining			
Rationale:		A game that is not fun is a failure			
Originator:		Steven			
Fit Criterion:		The game should be ranked at least 7/10 for entertainment based on a usability study			
Cust. Satisfaction:		2	Cust. Dissatisfaction:		5
Priority:		High	Conflicts:		None
Supporting Materials:		None			
History:		Created October 7, 2015			

4.3 Performance Requirements

Requirement #: 3		Requirement Type: 4.3		Use Case: 1	
Description:		The game shall maintain a framerate of at least 30 fps			
Rationale:		A framerate of 30 fps or greater will ensure smooth animation			
Originator:		Steven			
Fit Criterion:		The game shall			
Cust. Satisfaction:		2	Cust. Dissatisfaction:		5
Priority:		High	Conflicts:		None
Supporting Materials:		None			
History:		Created October 7, 2015			

4.4 Operational and Environmental Requirements

4.5 Maintainability and Support Requirements

Requirement #: 4		Requirement Type: 4.5		Use Case: 1	
Description:		The game shall support Windows, Linux, and OS X operating systems			
Rationale:		Students use a variety of operating systems			
Originator:		Spencer Smith			
Fit Criterion:		Check that game compiles and runs on each operating system			
Cust. Satisfaction:		3	Cust. Dissatisfaction:		3
Priority:		High	Conflicts:		None
Supporting Materials:		None			
History:		Created October 7, 2015			

4.6 Security Requirements

There are no security requirements related to this project.

4.7 Cultural Requirements

Requirement #: 5		Requirement Type: 4.7		Use Case: 1	
Description:		The game shall use the English language			
Rationale:		Students at McMaster University are expected to speak English			
Originator:		Steven			
Fit Criterion:		The game will use proper English free of spelling and grammar errors			
Cust. Satisfaction:		1	Cust. Dissatisfaction:		3
Priority:		Medium	Conflicts:		None

Supporting Materials:	None
History:	Created October 7, 2015

4.8 Legal Requirements

There are no legal requirements related to this project.

5 Project Issues

5.1 Open Issues

There are no open issues at this time. This section will be updated as required.

5.2 Off-the-Shelf Solutions

There are no off-the-shelf solutions.

5.3 New Problems

No new problems are expected to arise as a result of this project.

5.4 Tasks

5.5 Migration to the New Product

There is no product being replaced, and thus no migration is required.

5.6 Risks

There are no risks associated with this project.

5.7 Costs

There are no costs associated with this project.

5.8 User Documentation and Training

User documentation will be created with . Training will be provided via built-in tutorials throughout the game.

5.9 Waiting Room

At this point in the project timeline, there are no backlogged requirements. This section will be updated as required.

5.10 Ideas for Solutions

There are no ideas for solutions at this time. This section will be updated as required.