Plumbers on ICE

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Vision

Create a fully animated 2-dimensional game for the Android mobile platform. The game will be an arcade-style running-and-jumping game where the goal is to get to the end of the level as fast as possible.

Player scores will be stored in a database, and the scores will be accessible both from the mobile application as well as the website. An interactive high score page will also be maintained on a website.

Scope

Plumbers on Ice will create the project to showcase some of the technologies, methodologies, and skillsets acquired throughout their education at Metropolitan State University.

The project is to be completed by December 12, 2015 so that the gameplay can be demonstrated to show how the technologies work together.

The technologies that will be used for the project are Java (JRE 1.7), MySQL, PHP, HTML, CSS, and Javascript.

Github will be used for the SCM.

Milestones

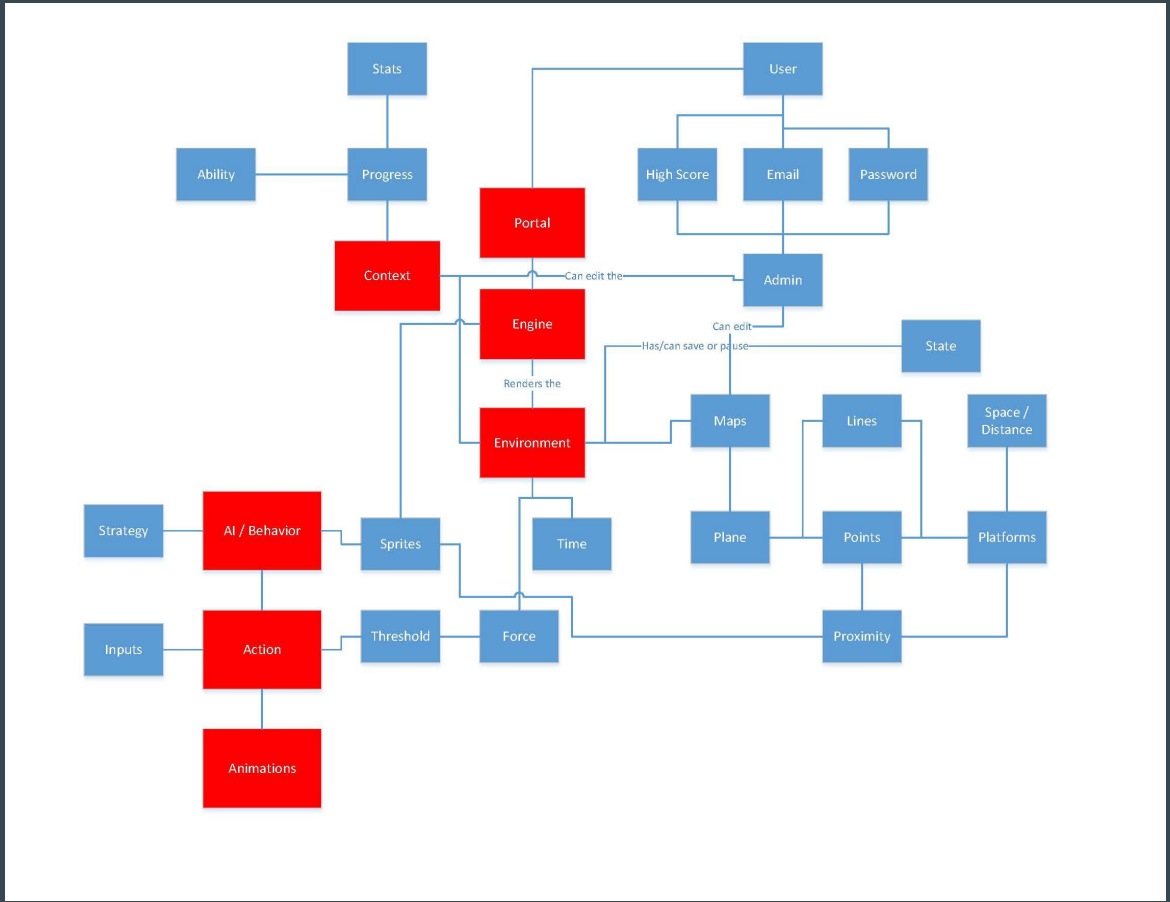
Completion of the project must be achieved by December 12, 2015. Progress milestones associated with the project are as follows:

1. Requirements specifications and analysis, achieved by 9/23/2015.
2. System design, achieved by 10/07/2015
3. Test plans, achieved by 10/28/2015
4. Coding and implementation, achieved by 11/18/2015

Project Estimates

Expense	Hours	Labor rate: $125/HR
System Design Labor	100 Hours	$12, 500
Technology Research Labor	100 Hours	$12,500
Coding and Implementation Labor	200 Hours	$50,000
Hosting Fees		$50
Total	400 Hours	$75,050

Domain Model



Glossary

Key Terms

Portal

Engine

Environment

Context

AI

Behavior

Action

Sprite

Animation

Requirements (1 of 4)

Req#	Requirement	Comments	Priority	Date Rvwd w/ Initials
E1	The engine must govern and render the environment according to context (stage, world, galaxy, etc.)		1	
E2	The engine must govern the behavior and placement of sprites within the environment.		1	
E3	The engine must govern the forces that act upon the sprites such as gravity, submergence in water, damage, powerups...		2	

Requirements (2 of 4)

E4	The engine must monitor context, progress, and be able to persist the state (High Scores)		2	
E5	The engine should be able alter state in the case of a pause, resume, or restart.		1	
E6	Time in the game simulation must move at the same speed regardless of platform or device.		1	
C1	The default configuration will be based on a set of minimum system requirements and for optimal performance.		1	

Requirements (3 of 4)

C2	A configuration menu shall be available for the user to customize their experience.		2	
C3	The user will be able to configure their input keys as desired.		1	
C4	The amount of detail provided as number of pixels can be configured by the user.		2	
C6	Additional maps can be added and configured to include sprites, platforms, and more animations by administrators using the level editor.		2	

Requirements (4 of 4)

S1	The user must register their account in order to download the installer.		1	
S2	An administrator can govern addition or subtraction of users, changing passwords, and any other changes to user accounts.		1	
S3	Each individual will be awarded a high score based on their in-game performance that can be accessed via the site’s user interface.		1	

Risks

- Mobile platform (i.e. Android)
  - The team has no pre-existing experience in developing for a mobile platform.
- Game engine
  - This is the most crucial component of the system, possibly the most time consuming, and the team has limited experience in this area.
- Design of game?
  - The team must come to a consensus on the basic design, essential mechanics, and limits on scope of the game as early as possible in the Elaboration phase
- Network multi-player???
  - Achieving good performance in multiplayer mode will likely be difficult. If we are not successful in this area, this feature could be dropped.

Actors

- Players
  - Players of the mobile game. May be a single actor, or multiple (two) actors in the case of multi-player.
- Website user
  - Usually these users will also be players of the game.
- Administrator
  - Will be able to do administrative actions through an interface on the website.

Use case diagram