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Team Java Specification

Functionality

Our game will be based on the hemisphere games physics game “Osmos”. For multi player functionality we are enabling the game to be played by two players in either co operative or competitive game play.

The game will be set in space rather than on the cellular level and called “Dark matter”. The player controls an energy being making its way through space that has to consume stars and other space based matter in order to survive. The propulsion system is based on the Osmos one in so far as it relies on the principle of conservation of momentum to propel the energy being along. The player controls this by use of the left mouse button, clicking in the opposite direction in which the player desires to go jettisons a vesicle of energy in that direction and the player will move in the opposite direction to the vesicle due to the conservation of momentum. The universe will be frictionless partly for convenience and partly to model space. We envision adding gravity in the form of a super-massive black hole or other large object which the players will orbit around if we have time.

The players energy being will grown when colliding with beings or stars small than it however will shrink and cease to exist if colliding with energy beings bigger than it, the main game modes will involve just growing to be the biggest entity on the level however we also envision some objective based modes. As an original twist on Osmos we are also adding weapons on the right click, these could include anti matter which will shrink an opponent or a barrier that will form and stop an opponent in there tracks. We envision this being used extensively in multi and single player.

GUI Design

For our GUI design we are going use the Java Swing package. We were advised against using games libraries to achieve our goals and so will not be doing as such. The game should be able to be run in windowed and full screen modes. We are going to scale the size of the player display to adjust to the size of the players playing screen so proportionately someone playing on a larger screen will not be at a significant advantage over someone player on a smaller one. We are going to produce user stories to aid in the production of our GUI.

The level select and networking options will be present on a home screen after the game boots up after a level has been selected that level will load on the screen and the menu can then be accessed by pressing the escape key. The graphics will be based around a space/energy theme. A key part of the game is the fact that as a guide smaller objects than the player will appear blue/green indicating that they are able to be absorbed by the player and objects larger than the player will appear red.

As an added feature to the GUI if we have time we may add animations or rotating transparent pictures to the objects to make them look more impressive rather than just block colours on simple shapes.

Release Plan

We are going to use extreme programming and agile development principles to influence our

release plan. We plan to set targets for the weeks coding at the teams first weekly meeting on a Tuesday morning and then work hard to produce these goals by the following Tuesday. We plan to produce an fully working iteration of the code every week. We will make full use of subversion and all code that is submitted as a release version must be rigorously tested to ensure it works fully. We will also review our weeks progress in the following weeks meeting and compare our goals at the start of the previous week to our achievements.

Software Engineering And Testing

We will be making extensive use of extreme programming and agile development principles during the production of our game. We intend to start coding at the start of week 3 after we have reviewed each others specification to check that we are on the right track and all on the same page. We are going to be doing a lot of a pair programming with each member coding with each other member of the team for a minimum of one hour a week. We have already produced a timetable detailing when these pair programming sessions are. These sessions will aid in communication between the team members and make sure that the code is as cohesive as possible.

We will be using Maven to help produce tests and documentation for our code. The website Maven generates will be extremely useful. We intend on testing our good thoroughly to ensure that all our methods work and our code is as bug free as possible.

We also intend of creating user scenarios and stories to inform our coding based on the situations in which the game will be played and the possible users. We will all continue to make full use of subversion.

We are also making use of a “sandbox” in the SVN repository for playing around with bits of code that are not ready to be integrating into the main release, this we feel will also be useful for trying out new and experimental ideas that may benefit our game.

Networking

For our networking we will be in all likelihood using a client based server as based on research already performed this seems to the simplest least time consuming method of multi player networking.

Even though peer to peer may be a more elegant solution we are unsure of the possible time constraints that may be upon us when we come to implement the networking part of our game, also given our teams inexperience with sockets and networking we have decided to use a client based server for our game initially.

We will however experiment with implementing p2p and if it proves viable we will implement it.