The code for Spacewars is structured so that each Server has several GalaxyManagers each controlling a Galaxy. Each of these GalaxyManagers has ClientManagers connected to it. The GalaxyManagers send Galaxies to the ClientManagers and the ClientManagers send ClientInput back. The ClientManagers each control one Client. On hyperspace a ClientManager is disconnected from one GalaxyManagers and added to another. Each manager runs in its own thread.

The code is divided into 14 classes and 4 packages as outlined below

The client package – implements client side

Client
Client extends a jFrame and displays the galaxy the player is currently in. This uses the jpct libraries to render the galaxy as a 3d scene. The use of jpct is limited to this class so that how the game is displayed is independent of the server.
ClientManager
This handles all the communication to and from the server for the client

The server package – implements server side

Server
This class represents a game server, it is responsible for starting and stopping the server process, and can run as a standalone server.
PlayerBinding
This class represents the join between a spacecraft and a client socket. It is responsible for the updating of the spacecraft from user input
GalaxyManager
This handles the server side communication with the client sending galaxies and receiving ClientInput. Each runs in its own thread

The common package – classes used by both the server and client

ClientInput
Detects and holds the clients key presses for sending to the server. Allows multiple keys to be pressed simultaneously. Acts as the only communication from the client to the server
Galaxy
an arena in the game. Holds a reference to all SpaceMasses within it. It also determines how the masses within it move and interact. This class is the only communication from the server to the client
SpaceMass
The basic entity on which all objects in the game universe are based each SpaceMass has a location, velocity, alive status and gravity_constant
Debris, Missile, Spacecraft and Star
Special types of SpaceMass

The launcher package- used to display and connect to a server

Launcher GUI
GUI for starting servers and connecting to them
Server List
Capable of storing and displaying server ip and name pairs