(Phase Two)
Software Design Description
(SDD)

ID	Name	Email	Mobile
20120247	Omar Hatem Abdel Kader	dantesprada@hotmail.com	01091188062
20120237	Abdullah Hussein Sayed	abdullah.mantawi@gmail.com	01154036519
20120243	Ali Mohamed Bastawy	alibasta2012@yahoo.com	01157526851

Version 1.0

Document Purpose and Audience ::

The Software Design Description (SDD) is created by system architect or designer and is considered the major deliverable from the detailed process

Purpose::

This document describes in details the system decomposition , classes and the sequence in which the "2D snake server game" should be operating with .

Audience::

This document is directed to the project manager which in this case our teacher assistant (TA) to keep him in touch with our progress .

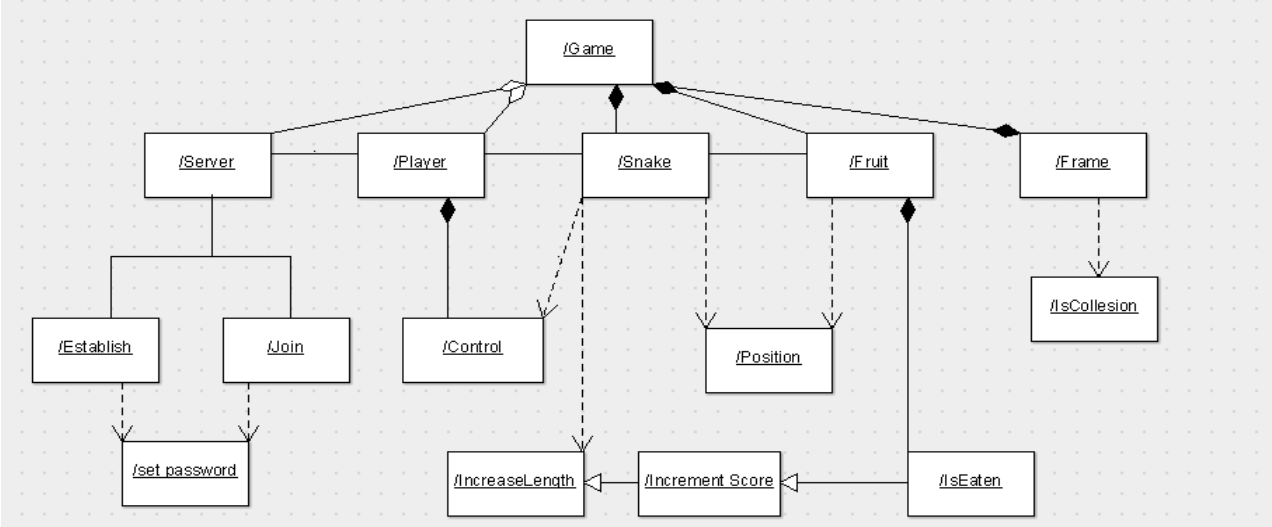
System Decomposition ::

In the following diagrams we will decompose our system into sub-system to make it easier to us to monitor how will the game operate .

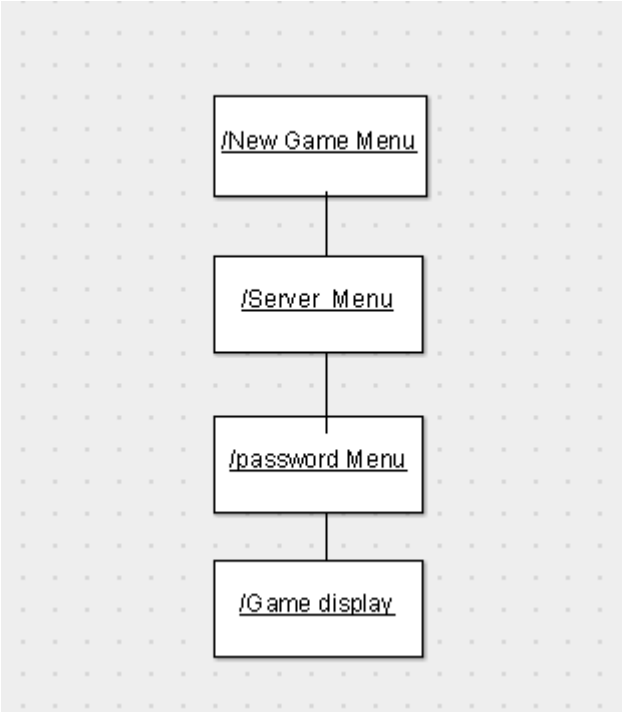
We will have two diagrams ::

1- General Operations
2- User Interface (UI)

This is the general operations that the game follows



The following is The user interface (UI) diagram



Now we will discuss the above 2 diagrams in details .

The first diagram decomposes the game into 5 main parts ::

1- Server
2- Player
3- Snake
4- Fruit
5- Frame

Every part of the above parts will be discussed in the terms of it's function and relation with other classes

Server ::

A)Function ::

The server here is considered as a parent class for establish server and join server classes . As it clear from there names they only establish or join a game server. In either case there is a set password function

B) Relations ::

It have one-to-one relation with class player (one player can establish/join server).

Player ::

A) Function ::

The player also known as user of the system is the one that control the snake using keyboard control

B) Relations ::

It have a one-to-one relation with class snake (one player can control one snake).

Snake ::

A) Function ::

Snake is simply the main object in our system having it's own shape and position function

B)Relations ::

Snake class have a one-to-many relation with class fruit

(one snake can eat multiple fruit)

Fruit ::

A) Function ::

Fruit simply appears in random places or positions in which the snake objectives is to eat it , if the fruit is eaten will lead to increase the score of the player and that leads to increase in the snake's length

B) Relations ::

It have many-to-one relation with class snake
(already mentioned in the above class)

Frame ::

A) Function ::

The frame or we can call it boundaries is where the snake is able to move in it and it hit the frame sides a collision occurs the leads to the game to end

B) Relations ::

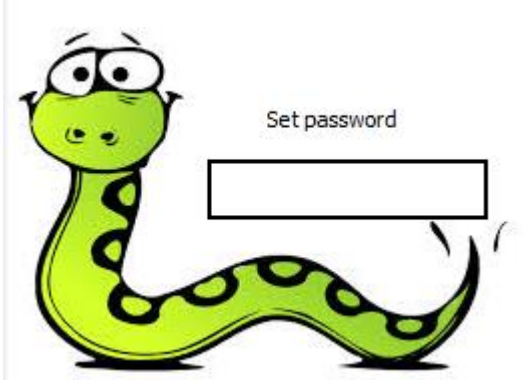
There is no relation with other classes but it is a part of the whole system

The Second diagram the user interface(UI) shows the interface that the user is supposed to deal use while playing the game the following pictures is our current prototype for the user interface

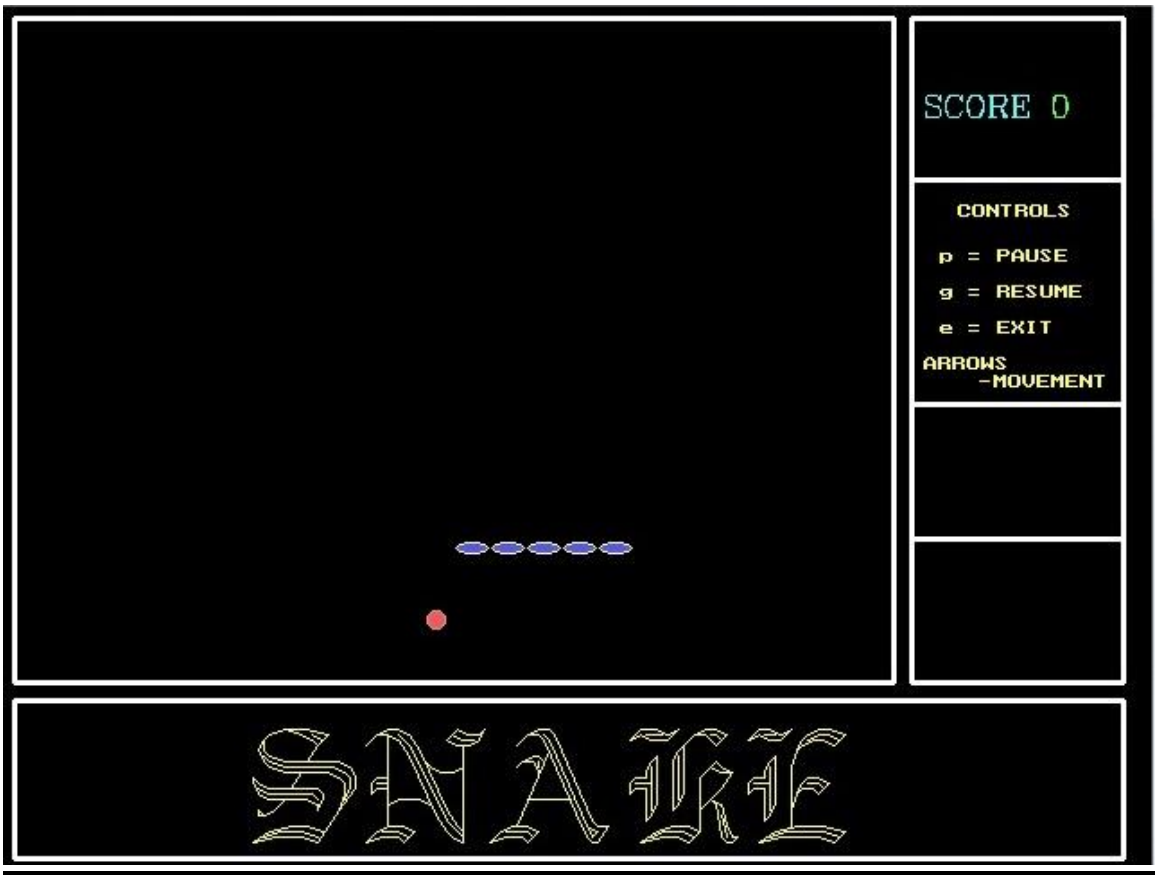
New Game Menu ::

Server Menu ::

Password Menu ::

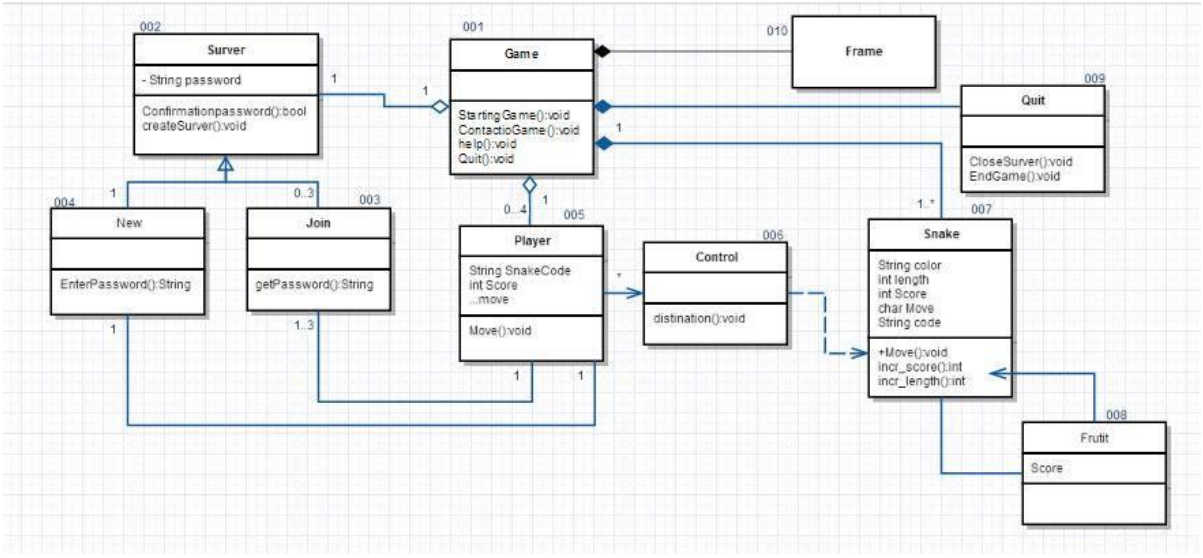


Game display ::



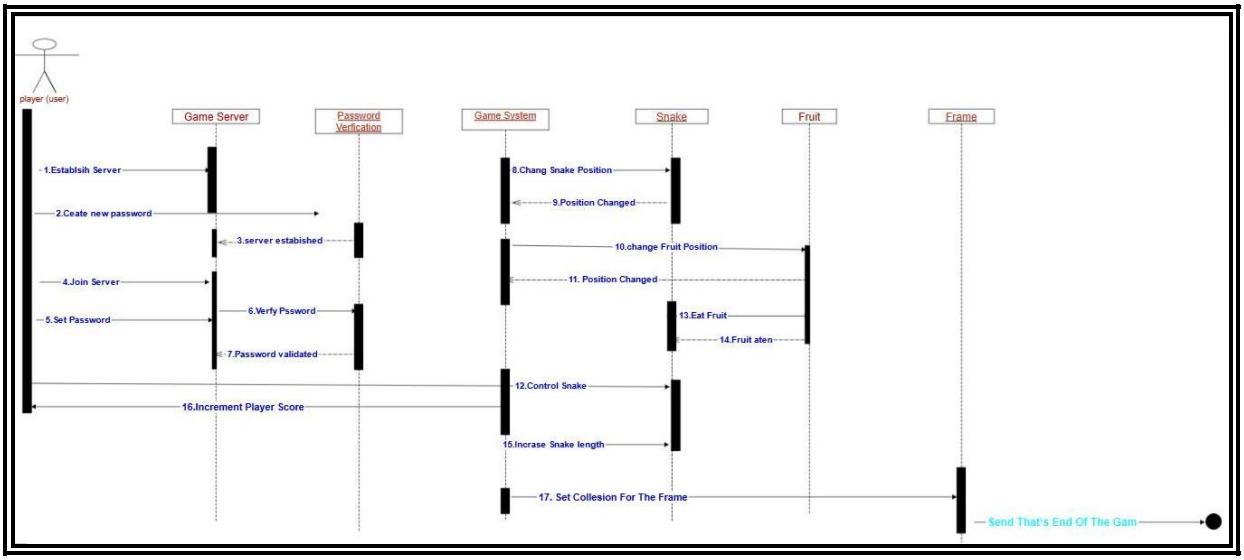
Class Diagrams ::

The Following Diagram contains class diagrams



Sequence Diagram ::

The following Diagram represents the sequence in which our system will operate .



Class Sequence Diagram Usage ::

Class Name	Sequence Diagrams	Overall Used Methods
Server	1,3,4,6,7	Establish Server, Join server, verify Password
New	2	Create new Password
Join	4	Join Server
Control	12	Control Snake
Frame	17	Set Collision
Quit	0	Exit From Frame
Game	All Sequence	All Previous Methods
Player	1,2,4,5,12,16	Establish Server, Join Server , Create new Password , Set Password , Control Snake
Snake	8,9,13,12,14,15	Change Position , Eat Fruit , increase Snake length, Control Snake

Fruit	**10,11,13,14**	**Change Position**

Ownership Report ::

In the following table we show the owners of each part in this document .

Item	Owner
Introduction and system decomposition	Omar Hatem Abdel kader
Class Diagrams	Abdullah Hussein Sayed
Sequence Diagrams	Ali Mohamed Bastawy