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# Software Methods and Tools
# Assignment-2

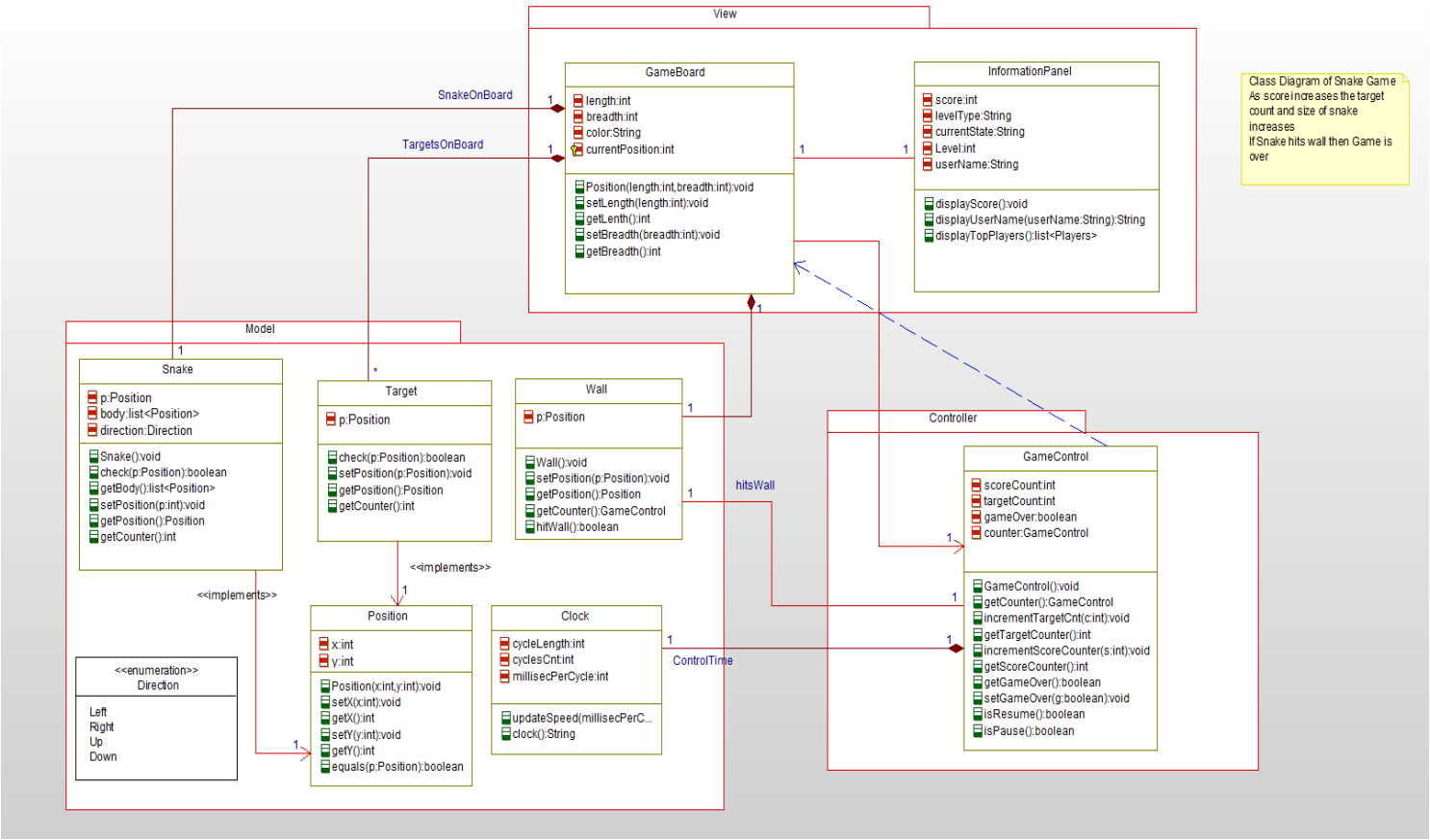
Submitted by:

Moulika Chadalavada

16234180

The main aim of this assignment is to create UML class diagram to capture classes and its relationships of Snake Game. The Snake game very famous video game, in which Snake moves in different directions to hit the target. As the snake hits more targets the score and targets increases and speed of snake also increases. The game is done when snake hits wall or eats its own tail.

The below is the Class Diagram that is designed in IBM Rational Modeler software to show all the classes involved in designing Snake game




In this class diagram, 3 packages View, Model, Controller are created where View package contains classes related to game GUI, Model package contains all the elements involved in Game such as Snake, Target etc., Controller package contains classes to know the status of game whether its completed or not.

Brief description is given for every class as follows:

**GameBoard**: This class represents the front-end of the game that contains attributes such as size of board, current position etc. All the objects of the game are displayed on Game board on which players can play the game.

**InformationPanel**: This class manages the user details such as name, and also stores the top players list. It also displays score details of user, play sounds etc.

**Snake**: The class contains the properties of Snake such as its size, position, direction etc. Snake can move in different directions such as left, right, up, down which are represented in enumeration class.

**Target**: This class contains the properties of target such as count of targets (as score increases targets also increases), position of target, etc. When snake hits one target then another target is automatically displayed on board.

**Wall**: This class contains the properties of Wall i.e., whether Snake hit the wall, distance of snake from wall etc. The snake can also kill itself by hitting the tail.

**Position**: This class contains the positions of objects Snake, Target by capturing x and y coordinates where Target and Snake class implements Position class

**Clock**: This class captures the cycles took to complete the level, also used to increase the speed limit as the score increases.

**GameControl:** This class is used to maintain the status of game such as Score, Level, and Game Over or not etc. Current Status of the game is also captured in Game Control such as game is paused, resumed or exited.