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**Submitted to:**

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**Class:**

BsCS 5th (A).

**Subject:**

Modern Programming Language.

* **Introduction:**

**Snake game** is an old and common game, Snake first appeared in **1997** on the Nokia 6110, along with the games Logic and Memory. It was **programmed by Taneli Armanto**, a design engineer in Nokia. The concept originated from the 1976 arcade game 'Blockade', developed and published by Gremlin.

* **Features:**

The snake game feature is to move snake on the screen using arrow keys to help snake eat food that appears on the screen thus increases the size of snake. If the snake hit one side of screen then it will die causing game over.If snake bites its tail the game will over. The Food will randomly appear on the screen.

* **Modules:**
* **LoginPage**

it includes:

**Play as guest**.

**Login**.

it will be only valid for:

**Name** = "**Admin**" and **Password** = "**123**"

**Exit**.

* **Snake**

**Linked** **list**.

**0(1)** insertion at size **increase**.

(**FIFO** approach) retrieve by head and add elements at tail.

**Methods in snake class:**

Movement of snake.

Check crashes.

* **cell**

**Private** data as discussed in **public** methods to **set** and **retrieve** them.

* **board**

**2D** array of cells (**grid**).

**Row** counts.

**Columns** counts.

Random **cell** designation as **food** on grid.

* **Game**

Credits (**Score**).

**Fixed** directions.

**Direction** members.

Boolean **game** **over** check.

**Update** method to update current values and game according to the **Snake’s** **movements**.

* **Purpose:**

**Snake** is a **classic** **game** that requires players to **assess** their **surroundings** and **find** the quickest or **safest** **route** to a point. This is an excellent opportunity to **learn** about **spatial** awareness and plan ahead to your next move.

* **Scope:**

The **main** **work** is to write a **snake game** using **Java programming language**. This game will **generate** **feeling** of **achievement** as the player eats the food and gets increment in snake’s size. Player has to move snake by **keyboard keys [up, down, left, right]** to **eat** the **food**. Each **eaten cell** **prolongs** the **snake’s** **size**.

* **Functional Requirements:**

**Java runtime environment (JRE)** or JDK**.**

**Netbeans** 8.2.

**Xampp "**xampp-windows-x64-8.0.13-0-VS16-installer"

**Moving** snake using **arrow** **keys**.

Random **food appearing** on screen.

**Eating food** make snake **longer**.

If **snake** **bites** its tail the **game** will **over**.

* **Non-Functional Requirements:**

File, Board **size**.

Game over **sign**.

Food, Background, Snake: design, **color and size.**