

# **DigiPen Institute of Technology**

## **CSD1130**

### **Game Implementation Techniques**

#### **Homework 1**

#### **Game Flow - Game State Manager**

#### **Due date**

Friday, Jan 13<sup>th</sup>, 2023, at 3:00pm – Section A

Friday, Jan 13<sup>th</sup>, 2023, at 5:00pm – Section B

#### **Topics**

The homework will cover the following topics:

- Writing the game flow in pseudo-code

#### **Goal**

The goal of this homework is, by referring to the provided flowchart, to understand the game flow and be able to write the algorithm in pseudo-code. Once you have the pseudo-code written you will need to implement it in C for “Assignment 1”.

## **Submission Guidelines**

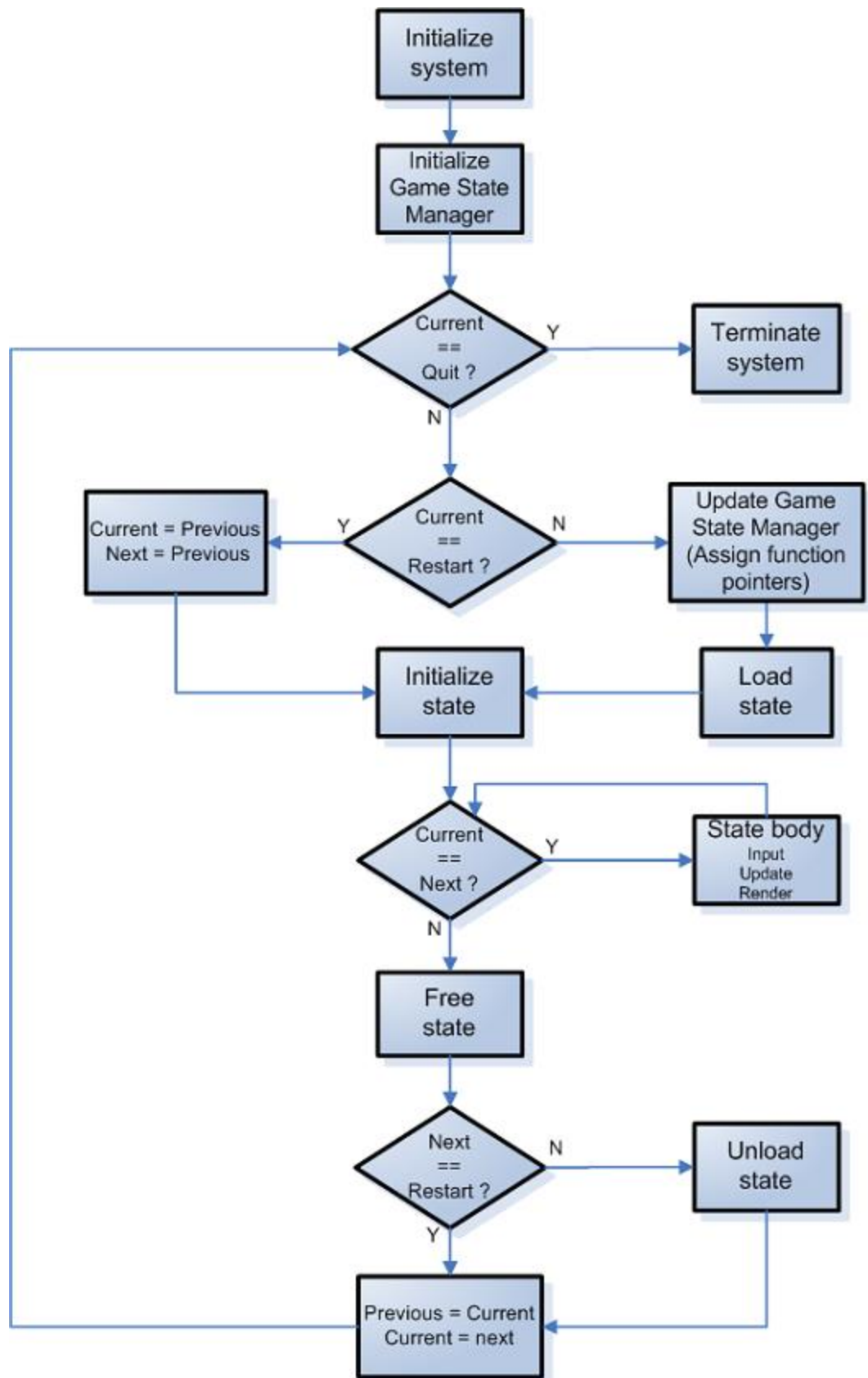
- No submission is needed. Just keep a copy of your work, so that you can compare with the correct solution, when provided to you!

## **Grade**

- Not graded.

## **Description**

- This homework is not graded and is part of the first assignment, where you need to implement the game state manager using the C programming language.
- For this homework, you need to write the pseudo-code of the following given flowchart:



## Pseudo Code Example

- Here is an example of a simple program that reads characters from a file and converts all the upper-case characters into lower-case and vice versa:

**OPEN the file**

**WHILE not end of file**

**READ a single character from the file**

**GET the ASCII value of that character**

**IF ascii value is greater or equal than 65 and less or equal than 91 THEN**

**ADD 32 to the ascii value**

**PRINT the character with the new ascii value**

**ELSE IF ascii value is greater or equal than 97 and less or equal than 123**

**SUBTRACT 32 from the ascii value**

**PRINT the character with the new ascii value**

**END IF**

**END WHILE**

**CLOSE opened file**

- To invoke procedures (functions) in pseudo-code you need to use one of two ways:
  - o Using the "CALL" keyword or by naming the specific procedure (function) "ACTION".  
For example, calling a Swap function that takes two parameters can be written as:
    - **CALL "Swap()" between currentItem and targetItem**
    - Or**
    - **SWAP between currentItem and targetItem**

## Extra – Additional 2 Steps

- You must include in the pseudo-code, the call of the following functions that are not shown in the flowchart diagram:
  - o CALL "FrameRateStart()"
  - o CALL "FrameRateEnd()"

## Notes

- When you see the word "state" in the chart, it means "game state".
- Make sure you can differentiate between "game state" and "game state manager".
- All the starting actions of each line in the pseudo-code are, and must be, all in capital letters.
- Do not add any extra step unless it is required.
- When you see a statement in the flowchart, then your pseudo-code must specify the owner.
  - o Example 1: **CALL "Update()" of the game state**
  - o Example 2: **CALL "Update()" of the game state manager**
  - o Example 3: **SET previous game state the same as current game state**

### **Possible Mistakes Criteria**

- Line not starting with capital lettered word
- Missing steps from the pseudo-code
- Miss-placed steps
- Extra steps added – That are not in the flowchart
- Messy and not clean presentation of the pseudo-code
- A programming statement used (like a C language statement)
- The “Extra” section is not added