CSA09 – Programming in Java
Day 5 Assignment Questions

1. Develop an Event Handling Applet Program in Java to print a message When the button is clicked

A.)program:

```java
import java.awt.*;
import java.awt.event.*;
import java.applet.*;

public class EventHandlingApplet extends Applet implements ActionListener {
  Button button;
  Label label;

  public void init() {
    label = new Label("Press the button to print a message.");
    add(label);

    button = new Button("Click me!");
    add(button);
    button.addActionListener(this);
  }

  public void actionPerformed(ActionEvent e) {
    label.setText("Hello, world!");
  }
}
```

2. Generate a Java Code to Write and Read the String "WELCOME TO SSE" using FileOutputStream and FileInputStream class

A.)program:

```java
import java.io.*;

public class FileStreamExample {
  public static void main(String[] args) {
    try {
      String str = "WELCOME TO SSE";
      FileOutputStream fos = new FileOutputStream("file.txt");
      fos.write(str.getBytes());
      fos.close();

      FileInputStream fis = new FileInputStream("file.txt");
      byte[] buffer = new byte[1024];
      int length = fis.read(buffer);
      fis.close();

      String readStr = new String(buffer, 0, length);
      System.out.println(readStr);
    } catch (IOException e) {
      e.printStackTrace();
    }
```

```
    }
}
```

3. We define the usage of capitals in a word to be right when one of the following cases holds:
   All letters in this word are capitals, like "USA".
   All letters in this word are not capitals, like "leetcode".
   Only the first letter in this word is capital, like "Google".
   Given a string word, return true if the usage of capitals in it is right.
   Example 1:
   Input: word = "USA"
   Output: true
   Example 2:
   Input: word = "FlaG"
   Output: false
    Constraints:
   1 <= word.length <= 100
   word consists of lowercase and uppercase English letters.

```
class Solution {
    bool detectCapitalUse(string word) {


    }
}
```

A.)program:

```
class Solution {
   public boolean detectCapitalUse(String word) {
      int countUpperCase = 0;
      for (int i = 0; i < word.length(); i++) {
         if (Character.isUpperCase(word.charAt(i))) {
            countUpperCase++;
         }
      }
      if (countUpperCase == 0 || countUpperCase == word.length() || (countUpperCase == 1 &&
Character.isUpperCase(word.charAt(0)))) {
         return true;
      }
      return false;
   }
}
```

4. You are given an array of characters letters that is sorted in non-decreasing order, and a character
   target. There are at least two different characters in letters.
   Return the smallest character in letters that is lexicographically greater than target. If such a
   character does not exist, return the first character in letters.
   Example 1:
   Input: letters = ["c","f","j"], target = "a"
   Output: "c"
   Explanation: The smallest character that is lexicographically greater than 'a' in letters is 'c'.
   Example 2:
   Input: letters = ["c","f","j"], target = "c"
   Output: "f"
   Explanation: The smallest character that is lexicographically greater than 'c' in letters is 'f'.
   Example 3:

Input: letters = ["x","x","y","y"], target = "z"
Output: "x"
Explanation: There are no characters in letters that is lexicographically greater than 'z' so we return letters[0].
 Constraints:
2 <= letters.length <= 104
letters[i] is a lowercase English letter.
letters is sorted in non-decreasing order.
letters contains at least two different characters.
target is a lowercase English letter.

```cpp
class Solution {

    char nextGreatestLetter(vector<char>& letters, char target) {


    }
}
```

A.)program:
```java
class Solution {
   public char nextGreatestLetter(char[] letters, char target) {
      int left = 0;
      int right = letters.length - 1;
      while (left <= right) {
         int mid = left + (right - left) / 2;
         if (letters[mid] <= target) {
            left = mid + 1;
         } else {
            right = mid - 1;
         }
      }
      return left < letters.length ? letters[left] : letters[0];
   }
}
```

5. Program to show syntax of conditional and looping statement by menu choice : **Find/Debug** erron in following code
```java
import java.util.Scanner;
public class Menusel
{
  public static void main(String args[])
  {

     Scanner scan = new Scanner(System.in);

     charchoice;

     do
     {
       System.out.println(Help on : ");
       System.out.println("1. if");
       System.out.println("2. switch");
       System.out.println("3. while");
       System.out.println("4. do-while");
       Syste.out.println("5. for\n");
```

```java
        System.out.println("Choose any one : ");
        choice = scan.next().charAt(0);
      }while(choice < '1' && choice > '5');

    System.out.println("\n");

    switch(choice)
    {
      case  1' : System.out.println("The if :\n");
        System.out.println("if(condition)\n{\n\tstatement\n}");
        System.out.println("else\n{\n\tstatement\n}");
        break;

      case '2' : System.out.println("The switch :\n");
        System.out.println("switch(expression)\n{");
        System.out.println("\tcase constant: statement sequence\n\tbreak;");
        System.out.println("\t//...\n}");
        break;

      case '3' : System.out.println("The while :\n");
        System.out.println("while(condition)\n{");
        System.out.println("\t// body of loop\n}");
        break;

      case '4' : System.out.println("The do-while :\n");
        System.out.println("do\n{");
        System.out.println("\t// body of loop\n\n}while(condition);");


      case '5 : System.out.println("The for :\n");
        System.out.println("for(initialization; condition; iteration)\n{");
        System.out.println("\t// body of loop\n}");
        break;
    }

  }
}
```

A.)program:
```java
import java.util.Scanner;

public class Menusel {
    public static void main(String args[]) {
        Scanner scan = new Scanner(System.in);
        char choice;
        do {
            System.out.println("Help on : ");
            System.out.println("1. if");
            System.out.println("2. switch");
            System.out.println("3. while");
            System.out.println("4. do-while");
            System.out.println("5. for\n");

            System.out.println("Choose any one : ");
```

```
        choice = scan.next().charAt(0);
    } while (choice < '1' || choice > '5');

    System.out.println("\n");

    switch (choice) {
        case '1':
            System.out.println("The if :\n");
            System.out.println("if(condition)\n{\n\tstatement\n}");
            System.out.println("else\n{\n\tstatement\n}");
            break;

        case '2':
            System.out.println("The switch :\n");
            System.out.println("switch(expression)\n{");
            System.out.println("\tcase constant: statement sequence\n\tbreak;");
            System.out.println("\t//...\n}");
            break;

        case '3':
            System.out.println("The while :\n");
            System.out.println("while(condition)\n{");
            System.out.println("\t// body of loop\n}");
            break;

        case '4':
            System.out.println("The do-while :\n");
            System.out.println("do\n{");
            System.out.println("\t// body of loop\n\n}while(condition);");
            break;

        case '5':
            System.out.println("The for :\n");
            System.out.println("for(initialization; condition; iteration)\n{");
            System.out.println("\t// body of loop\n}");
            break;
    }

    }
}
```