**Assignment :- 1**

1.) Mention the difference between interpreter and compiler.

-> The difference between interpreter and compiler are as follows :-

*COMPILER*

a.) A compiler converts high-level language program code into machine language and then executes it. High-level languages are C and C#

b.) Complier scans the entire program first before translating into machine code.

c.)Compiler takes entire program as input.

d.) Intermediate object code is generated in case of compiler.

e.) Compiler takes less execution time when compared to interpreter.

f.) Examples include C, COBOL, C#, C++, etc

g.) Compiler requires more memory than interpreter.

***INTERPRETER***

a.) Interpreter converts source code into the intermediate form and then converts that intermediate code into machine language. The intermediate code looks same as assembler code.

b.) Interpreter scans and translates the program line by line to equivalent machine code.

c.) Interpreter takes single instruction as input.

d.) In case of interpreter, No intermediate object code is generated.

e.) Interpreter takes more execution time when compared to compiler.

f.) Examples include Python, Perl, VB, PostScript, LISP etc.

g.) Interpreter needs less memory when compared to compiler.

2.) Define a class Student with following members:

int roll, String name, float marks.

input() to take input of the details

display() to all details of a student.

Write a program to which will store details of a student and print the details using the above class.

import java.util.Scanner;

class Student {

String name;

String stu\_id;

int score;

public Student() {

this(" ", " ", 0);

}

public Student(String initName, String initId, int initScore) {

name = initName;

stu\_id = initId;

score = initScore;

}

}

public class Main {

public static void main(String[] args) {

Scanner in = new Scanner(System.in);

System.out.println("Input number of students:");

int n = Integer.parseInt(in.nextLine().trim());

System.out.println("Input Student Name, ID, Score:");

Student stu = new Student();

Student max = new Student();

Student min = new Student(" ", " ", 100);

for (int i = 0; i < n; i ++) {

stu.name = in.next();

stu.stu\_id = in.next();

stu.score = in.nextInt();

if (max.score < stu.score) {

max.name = stu.name;

max.stu\_id = stu.stu\_id;

max.score = stu.score;

}

if (min.score > stu.score) {

min.name = stu.name;

min.stu\_id = stu.stu\_id;

min.score = stu.score;

}

}

System.out.println("name, ID of the highest score and the lowest score:");

System.out.println(max.name + " " + max.stu\_id);

System.out.println(min.name + " " + min.stu\_id);

in.close();

}

}