**JAVA ASSIGNMENT**

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1. what is metaspace and heap memory?

Ans:In every programming language, memory is a vital resource and is also scarce in nature. Hence it’s essential that the memory is managed thoroughly without any leaks.Java 8 has introduced metaspace in jvm which manages memory for program.

MetaSpace grows automatically by default. Here, the garbage collection is automatically triggered when the class metadata usage reaches its maximum metaspace size.

In Java, a heap is a chunk of memory which is shared among all threads. In a heap, all class instances and the array is allocated. It is created when JVM starts-up. An automatic storage management system reclaims heap. It may be of fixed and variable size.

2. generate multiples of 2 until 20 using recursive function

Ans:

public class A {

static void mul\_table(int N, int i)

{

if (i > 10)

return ;

System.out.println(N + " \* " + i + " = " + N \* i);

mul\_table(N, i + 1);

}

public static void main (String[] args)

{

int N = 2;

mul\_table(N, 1);

}

}

3. check if two strings are equal or not

Ans:

class B{

public static void main(String args[]){

String s1="Rushikesh";

String s2="Gaurkar";

System.out.println(s1.equals(s2));

}

}

4. print the character count in a string say

string s ="helloworld" print h-1, e-1, l-3,o-2

Ans:

import java.util.\*;

public class C{

public static void CharWithFreq(String s)

{

Map<Character, Integer> d = new HashMap<Character, Integer>();

for(int i = 0; i < s.length(); i++)

{

if(d.containsKey(s.charAt(i)))

{

d.put(s.charAt(i), d.get(s.charAt(i)) + 1);

}

else

{

d.put(s.charAt(i), 1);

}

}

for(int i = 0; i < s.length(); i++)

{

if(d.get(s.charAt(i)) != 0)

{

System.out.print(s.charAt(i));

System.out.print(d.get(s.charAt(i)) + " ");

d.put(s.charAt(i), 0);

}

}

}

public static void main(String []args)

{

String S = "Rushikesh";

CharWithFreq(S);

}

}

5. why java is platform independent?

Ans:

The meaning of platform-independent is that the java compiled code(byte code) can run on all operating systems.

A program is written in a language that is a human-readable language. It may contain words, phrases, etc which the machine does not understand. For the source code to be understood by the machine, it needs to be in a language understood by machines, typically a machine-level language. So, here comes the role of a compiler. The compiler converts the high-level language (human language) into a format understood by the machines. Therefore, a compiler is a program that translates the source code for another program from a programming language into executable code.

This executable code may be a sequence of machine instructions that can be executed by the CPU directly, or it may be an intermediate representation that is interpreted by a virtual machine. This intermediate representation in Java is the Java Byte Code.

Step by step Execution of Java Program:

Whenever, a program is written in JAVA, the javac compiles it.

The result of the JAVA compiler is the .class file or the bytecode and not the machine native code (unlike C compiler).

The bytecode generated is a non-executable code and needs an interpreter to execute on a machine. This interpreter is the JVM and thus the Bytecode is executed by the JVM.

And finally program runs to give the desired output.

6. can we create class as final?

Ans:A class can be made final by using the final keyword. The final class cannot be inherited and so the final keyword is commonly used with a class to prevent inheritance.

7. considder we have employee class with empid, empname and salary

and list of employees get the the highest salary paid employee data?

Ans:

package com.pack;

public class Employee {

int empId;

String empNm;

int sal;

public Employee() {

}

public Employee(int empId, String empNm,int sal ) {

this.empId = empId;

this.empNm = empNm;

this.sal = sal;

}

public static void main(String[] args) {

Employee emp1 = new Employee(1,"Rushikesh",500000);

Employee emp2 = new Employee(2,"Sanket",600000);

Employee emp3 = new Employee(3,"Nilesh",700000);

if(emp1.sal > emp2.sal && emp1.sal > emp2.sal)

System.out.println(emp1.empNm +" "+emp1.sal+" "+emp1.empId );

else if(emp2.sal > emp1.sal && emp2.sal > emp3.sal)

System.out.println(emp2.empNm +" "+emp2.sal+" "+emp2.empId );

else

System.out.println(emp3.empNm +" "+emp3.sal+" "+emp3.empId );

}

}

8. consider a list of duplicates values remove duplicate value and get unique values from list

import java.util.\*;

public class C {

public static <T> ArrayList<T> removeDuplicates(ArrayList<T> list)

{

ArrayList<T> newList = new ArrayList<T>();

for (T element : list) {

if (!newList.contains(element)) {

newList.add(element);

}

}

return newList;

}

public static void main(String args[])

{

ArrayList<Integer>list = new ArrayList<>(Arrays.asList(1, 10, 1, 2, 2, 3, 3, 10, 3, 4, 5, 5));

System.out.println("ArrayList with duplicates: "

+ list);

ArrayList<Integer> newList = removeDuplicates(list);

System.out.println("ArrayList with duplicates removed: "

+ newList);

}

}

9. can we write try and finally without catch block what is the use

Ans:

Yes, we can have try without catch block by using finally block. You can use try with finally. As you know finally block always executes even if you have exception or return statement in try block except in case of System.

