ASSIGNMENT 6

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Q1) What is method overloading in java and explain with an example.

→ Here we can create multiple method of same name in same class and all the methods work in diff way.

eg

```
class Program {
        public void findArea() {
            System.out.println("area": area);
        }
        Public void findArea() {
            System.out.println(3.14 * r * r);
        }
```

Q2) What are the rules for method overloading resolution in Java? How does java determine which over method to call?

→ i) method must have diff parameter.
ii) The class should be same
iii) The method should be same.
iv) Parameter type and parameter number should be different.

Q3) What does static keyword mean in java? Explain the diff between static and non static method

→ static keyword in java indicate that a particular mem is an instance but rather part of type. The static mem will be shared among all instance of the class so we will only create one instance of it

Static method is a class method and belong

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to the class stuff. This means you do not used an interface in order to use a static method. A non static method is an instance method and belongs to each object that is generated from class.

Q4) Can static method be overloaded and overridden in Java? How are the sorted multiple instance of a class

→ Static methods in java can not be overridden. This is because static method are not associated with the instance of the class. but with the class stuff. Therefore when a subclass initiate a static method from its parent class, it cannot modify the behaviour of the static method in any way.

Q5) What is the role of static keyword in the context of memory management?

→ The static keyword in java is mainly used for memory management. The static keyword in java used to share the same variable or method of a given class. The user can apply static keyword in variable method, blocks and in nested classes. The static keyword belongs to the class than the instance of the class.

Q6) What is the significance of final keyword in java?

→ Final is a keyword

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i) final variable: If we make any variable as final we cannot change the value.

ii) Final method: If we make method as final we cannot override it.

iii) Final class: If we make any class final we cannot extend it

Q7) Can a final method be ~~overloaded~~ overridden in a subclass? How does the final keyword affect variable, method and class in java.

→ No, methods that are declare as final cannot be overridden or hidden.
If variable made final then we cannot change its value. If method made final then we cannot override it. class, final can not be extend it.

Q8) what does this keyword represent in java?

→ This = instance of a class
used to access or modify field of current object. when field name = local variable name.

This keyword refers the current object in a method as a constructor. The most common use is to eliminate condition between class attribute and parameter with the same name.

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Q9) What are narrowing and widening conversion in java?

→ widening: converting a smaller data type into larger datatype.

Narrowing: converting a large datatype to a smaller datatype.

Q10) Provide example of narrowing and widening conversion between primitive data type?

Ans→ widening

```
Public class Program {
    Psvm ( ) {
    int a = 5
    float b = 3.5f;
    float sum = a+b;
SOP ("value:" + a);
SOP ("value" + sum);
```

Narrowing:

```
Public class Program {
    PSV ( ) {
    float a = 5.7f
    int b = (int) a
    SOP ("value:" + b);
} }
```

Q11) How does java handle potential loss of precision during narrowing conversion.

→ In the case of double to float, you can have a constant value which if in the right range, but still lose precision. In your

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specific case of 10.0. The value can be represented exactly in both float and double.

```
float b = (float) 10.1;
double d = 10.1;
System.out.println(f == d);
```

Q12) Explain the concept of automatic widening conversion in java.

→ widening conversion take place when two data type are automatically converted. This happens when the two datatype are compatible. when we assign a value of a smaller data type to bigger data type

byte → short → int → long → float → double.

Q13) what are the implications of narrowing and widening conversion of type compatibility and data loss?

→ widening conversion preserve the source value but can change its representation. This occurs if you convert from an integral type or decimal or form char to string change or value.