

March 2024

## \*] ~~What~~ Assignment 6

1] What is method overloading in java?  
& explain with an example?

Ans. Method Overloading →

i] A class having two or more methods with same name but with different arguments then we say that those methods are overloaded.

ii] It is used when we want the methods to perform similar tasks but with diff. inputs or value.

2] What ~~is~~ are the rules for method overloading resolution in java? How does Java determine which overloaded ~~is~~ method to call?

Ans. Rules for method overloading resolution:

1] The method name must be same.

2] parameters must be diff.

a] Data types are diff but no. of parameters are same.

```
void add (int a, float b)
```

```
void add (int a, int b)
```

b] No. of parameters are diff. but data type is same.

```
void add (int a, int b)
```

```
void add (int a, int b, int c)
```

c] No. of parameters same but sequence diff.

```
void add (int a, float b)
```

```
void add (float a, int b)
```



when we call method from main, <sup>with parameter</sup> when java compiler find overloaded method with the help of arguments given in the methods.

3] What does static keyword mean in java? explain diff. bet<sup>n</sup> static & non-static?

Ans. i] static can be block, variable, method & class.

ii] If we write ~~method~~ variable static it means it gets space in memory in method area before class loading (i.e. before instance is created of reference of class.

iii] Diff.

static	Non static
1) Belong to class	belong to object
2) can accessed w/o creating object.	creating object
3) shared by all object	each object has its own copy.

4] Can static methods be overloaded & overridden in java? How static variable share access multiple instances of class?

Ans. Yes, static methods can be overloaded but can't override as it is not showing run time polymorphism.



static variable are shared across multiple instances of class because there is only one copy of variable for entire class.

5] What is the role of static keyword in the context of memory management?

Ans. 1] static variable are shared among all instances, reduces the amount of memory required.

2] preserve data bet<sup>n</sup> fun<sup>c</sup> calls.

3] Improve program efficiency.

6] What is the significance of final keyword in java?

Ans. 1] The final keyword give security that no one can modify our classes, variables & methods

2] final variable cannot be assigned

3] final class cannot be extended or subclassed.

7] Can final method be overridden in a subclass? How does the final keyword affect variable, method, & classes in java?

Ans. 1] No, final method cannot be overridden in a subclass. when method is declared as final in a superclass. it cannot be overridden by any of its subclass. This is because the final key keyword prevents the method from being overridden.



8]

What does the this keyword represent in java? How is the this keyword used in construction & methods?

Ans.

i] The this keyword in java is a special keyword that refers to the current object.

ii] The this keyword can be used in constructor & methods to access the instance variable & methods of the current the object.

9]

What are ~~covering~~ narrowing & widening conversion in java?

Ans.

Widening conversion is an implicit conversion, which means that it is performed automatically by the compiler. It occurs when a value of a smaller data type is assigned to a variable of a larger data type.

Narrowing conversion is an ~~em~~ explicit conversion. It occurs when a value of a larger data type is assigned.



10] Provide examples of narrowing & widening conversion bet<sup>n</sup> primitive data types.

Ans. 1) Widening conversion preserves the source value but can change its representation.

This occurs if you convert from an integer type to decimal, or from char to string.

2) A narrowing conversion changes a value to a data type that might not be able to hold some of the possible values.

11] How does java handle potential loss of precision during narrowing conversion?

Ans. Java handles potential loss of precision during narrowing conversion by requiring the programmer to explicitly cast the value to the smaller data type.

12] Explain the concept of automatic widening conversion in java.

Ans. Widening conversion is an automatic process where a value of a smaller data type is converted to a larger value.

13] What are the implications of narrowing & widening conversions on type compatibility & data loss?

Ans. Narrowing conversions are more likely to cause data loss than widening conversion. Narrowing change a value to data type that may not be able to hold some of the possible values.