Assignment 6 Rashmi C R

1. What is private access specifier?
   Ans:
   The access level of a private modifier is only within the class. It cannot be accessed from outside the class and only within the package. It cannot be accessed from outside the package. If you do not specify any access level, Private will be the default.

2. what are getter and setter methods? why do we need them?
   Ans:
   Getters and setters are used to protect your data, particularly when creating classes. For each instance variable, a getter method returns its value while a setter method sets or updates its value. Given this, getters and setters are also known as accessors and mutators, respectively.

3. why this keyword is used in the setter method??
   Ans: this keyword is used to refer to the current object.

4. difference between local variable and member variable/instance variable
   Local Variable:
   - They are defined in class but outside the body of methods.
   - These variables are created when an object is instantiated and are accessible to all constructors, methods, or blocks in class.
   - These variables are destroyed when the object is destroyed.
   - It can be accessed throughout the class.
   - They are used to reserving memory for data that the class needs and that too for the lifetime of the object.
   - These variables are given a default value if it is not assigned by code.
   - It is not compulsory to initialize instance variables before use.
   - It includes access modifiers such as private, public, protected, etc.

   Member variable/ Instance variable:

   - They are defined as a type of variable declared within programming blocks or subroutines.
   - These variables are created when a block, method or constructor is started and the variable will be destroyed once it exits the block, method, or constructor.
   - These variables are destroyed when the constructor or method is exited.
   - Its access is limited to the method in which it is declared.
   - They are used to decreasing dependencies between components I.e., the complexity of code is decreased.
   - These variables do not always have some value, so there must be a value assigned by code.
   - It is important to initialize local variables before use.

- It does not include any access modifiers such as private, public, protected, etc.

5. what is reference varialble?

   A reference variable is a variable that points to an object of a given class, letting you access the value of an object

6. syntax of creating an object?
   ClassName referenceVariableName;
   referenceVariableName=new ClassName();
   Example: Student student; //creates reference variable that points to the memory location student=new student() ;//creates the object of the class (allocates the memory for the class properties).

7. explain in detail what happens when we create an object??
   When an object is created, memory is allocated to hold the object properties. An object reference pointing to that memory location is also created. To use the object in the future, that object reference has to be stored as a local variable or as an object member variable.

8. what is class?
   Class is the blueprint of an object and it is a logical entity which consists data and behaviour associated with the class instantiation.

9. what is object?
   An object is a member (also called an instance) of a Java class. Each object has an identity, a behavior and a state

10. what are the default values of all the datatypes?

Data type	Default value
Boolean	false
Char	'\u0000'
Byte	0
Int	0
Short	0
Float	0.0f
Long	0l
Double	0.0d
String	null

11. difference between the static methods and instance method

    Static Methods:

- Static methods can be called without the object of the class.

- Static methods are associated with the class.
- Static methods can only access static attributes of the class
- A static method is declared with the static keyword.
- The static method will exist as a single copy for a class.

Instance Methods:

- Instance methods require an object of the class.
- Instance methods are associated with the objects.
- Instance methods can access all the attributes of the class.
- Instance methods do not require any keyword.
- The instance method exists as multiple copies depending on the number of instances of the class.

12. Syntax of accessing the member variable in the main?

Syntax : object.variablename;

Example: student.studentName;

13. Syntax of instance method defination?

Ans:

```
Access _specifier return_ type methodName()
{
 method body;
 }
```

- Access specifier -- specifies the scope of the method that is who can access this method.
- return_type --returns a value of specified data type from the method.
- methodName--should be given as per the purpose and should following method naming conventions.
- methody body-- set of statements performing particular task can be given in the method body

14. Syntax of static method definition

```
Access _modifier static return_type methodName()
{
 method body;
 }
```

- Access specifier -- specifies the scope of the method that is who can access this method.
- static--its is non access modifier and makes the method to be accessed without creating object.
- return_type --returns a value of specified data type from the method.
- methodName--should be given as per the purpose and should following method naming conventions.

- methody body-- set of statements performing particular task can be given in the method body.

15. difference between actual parameter and formal parameter?

Actual Parameters

- When a function is called, the values (expressions) that are passed in the function call are called the arguments or actual parameters.
- These are the variables or expressions referenced in the parameter list of a subprogram call.
- Actual Parameters are the parameters which are in calling subprogram.
- There is no need to specify datatype in actual parameter.
- The parameters are written in function call are known as actual parameters.
- Actual Parameters can be constant values or variable names.

Formal Parameters

- The parameter used in function definition statement which contain data type on its time of declaration is called formal parameter.
- These are the variables or expressions referenced in the parameter list of a subprogram specification.
- Formal Parameters are the parameters which are in called subprogram.
- The datatype of the receiving value must be defined.
- The parameters are written in function definition are known as formal parameters.
- Formal Parameters can be treated as local variables of a function in which they are used in the function header.

16. why we need the parameter or arguments to the methods?
    - We need parameters to the methods to an input to the method.
    - It is necessary to pass the data to methods that are working with data

17. why we need the return statement and return type to the method.
    - Return statement used to return the value from a method and the flow of program execution comes out of it goes back to the caller method.
    - Return type returns a value of expected data type from the method

18. Method can be private.(true or false)
    True

19. What is the error message we get if we access private variable or method outside the class? The filed Class.variable is not visible;
    Example:The field Employee mobileNumber is not visible;