

1) Static:

- 1) Used for memory management
- 2) Used with:
 - 1) Variables:
 - 1) Can be used to refer common properties of all objects
 - 1) Eg: company name for employees is going to be same, so we can declare it as static so that memory is assigned only once
 - 2) Gets memory only once in the class area-> it gets at the time of class loading
 - 3) They are shared among all the instances of the class
 - 1) Because we can directly access them using class-name we don't have to be dependent on the objects of the class that are created
 - 4) Imp Points:
 - 1) Belong to a class
 - 2) Can be accessed directly using class name and don't need any object reference
 - 3) Can be declared only at class level
 - 4) Static variables can be accessed without object initialisation
 - 2) Methods:
 - 1) They also belong to class instead of objects
 - 2) They can be called without creating the object of the class in which they reside
 - 3) They are resolved at compile-time:
 - 1) Method-overriding -> Runtime Polymorphism because of this we cannot @Override static methods
 - 4) Abstract methods cannot be static
 - 5) Static methods cannot use **this** or **super** keyword
 - 3) Blocks:
 - 1) Inside a static block I cannot declare variable as static it can be either normal or final
 - 2) Can be used to initialise static variables
 - 3) A class can have multiple static blocks, which will execute in the same sequence in which they have been written
 - 4) Classes(Inner classes):
 - 1) Refer code

2) Final:

- 1) Can be used with:
 - 1) Variables: cannot change the value once assigned
 - 2) Methods: we cannot override
 - 3) Classes: we cannot inherit

3) Strings:

- 1) String is a non-primitive data-type in Java
- 2) String is immutable, so it is easy to share across different functions
- 3) Whenever String manipulation is done like concatenation, substring etc., it generates a new string and discards the string for garbage collection
- 4) We cannot inherit String class -> because String class is final
- 5) Represented in UTF-16 format
- 6) Instantiate String by:
 - 1) String s1 = "abc";
 - 2) String s2 = new String("abc");
- 7) String class overrides equals(), toString() and hashCode() methods
- 8) Declared in Object class
- 9) All the String values are stored in String Pool
- 10) Since String is immutable, so whenever we perform any manipulation, the older String is discarded, it leads to a lot of discarded string in the heap memory. To solve this issue:

1) StringBuilder and StringBuffer classes:

	String	StringBuffer	StringBuilder
Storage	String Pool	Heap	Heap
Modifiable	No	Yes	Yes
Thread Safe	Yes	Yes	No
Synchronised	Yes	Yes	No
Performance	Fast	Slow	Fast