**What is the use of Static Keyword**.

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| The **static keyword** in java is used for memory management mainly. We can apply java static keyword with variables, methods, blocks and nested class. The static keyword belongs to the class than instance of the class.  The static keyword denotes that a member variable, or method, can be accessed without creating any object of the class to which it belongs. In simple terms, it means that you can call a method, even if you've **never created the object** to which it belongs..  The static can be:   1. variable (also known as class variable) 2. method (also known as class method) 3. block 4. nested class |

**Java static variable**

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| If you declare any variable as static, it is known static variable.   * The static variable can be used to refer the common property of all objects (that is not unique for each object) e.g. company name of employees,college name of students etc. * The static variable gets memory only once in class area at the time of class loading. |

**Program 1:**

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| class Staticmethod  {  int rollno,regno;  static String clgname="SGGSIE&T";  static int age=19;  String stuname;  public Staticmethod(int x,int y,String name)  {  rollno=x;  regno=y;  stuname=name;  }    void studentinfo()  {  System.out.println(rollno+" "+regno+" "+stuname+" "+age+" "+clgname);  }  void change()  {  clgname="GCE";  age=20;  }  }  public class Staticdemo  {  public static void main(String[] args)  {  Staticmethod obj1=new Staticmethod(13,21,"RAHUL");  obj1.studentinfo();  obj1.change();  Staticmethod obj2=new Staticmethod(1,1,"RAVI");  obj2.studentinfo();  Staticmethod obj3=new Staticmethod(14,23,"VARUN");  obj3.studentinfo();  }  } |

**Output:**

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| run:  13 21 RAHUL 19 SGGSIE&T  1 1 RAVI 20 GCE  14 23 VARUN 20 GCE |

**Java static method**

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| If you apply static keyword with any method, it is known as static method.   * A static method belongs to the class rather than object of a class. * A static method can be invoked without the need for creating an instance of a class. * static method can access static data member and can change the value of it. |

**Program 2:**

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| class Calculate  {  static int cube(int x)  {  return x\*x\*x;  }  public static void main(String args[])  {  int result=Calculate.cube(5);  System.out.println(result);  }  } |

**Output:**

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| run:  125 |

**Difference between static variable and instance variable:**

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| Static variable | Instance Variable |
| 1. Defined at Class Level 2. Static Variables are initialized ,loaded with Class itself.   Eg:   |  |  | | --- | --- | | 1  2  3  4 | class Student {      private String name;      private int age;  } | | 1. Defined at Instace/Object Level 2. instance variable initialized when Object for that Class is instantiated   Eg:   |  |  | | --- | --- | | 1  2  3 | class Demo {      private static instanceCount;  } | |

**What is the use of Final keyword in java:**

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| A java variable can be declared using the keyword **final**. Then the final variable can be assigned only once. If you make any variable as final, you cannot change the value of final variable(It will be constant). |

**Program:**

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| class cylinder  {  final double PI=3.14;  double r,h;  cylinder(double rad,double height)  {  r=rad;  h=height;  }  void curvedSA()  {  double curvedSA=2\*PI\*r\*h;  System.out.println(curvedSA);  }  void volume()  {  double V=PI\*r\*r\*h;  System.out.println(V);  }  }  public class Finaldemo  {  public static void main(String args[])  {  cylinder obj1=new cylinder(2.1,3.0);  obj1.curvedSA();  obj1.volume();  cylinder obj2=new cylinder(3.5,2.5);    }  } |

**Output:**

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| run:  39.564  41.5422 |

**END ASSIGNMENT**