

---

# Code

Company Class (main class), Parent

```
9 public class Company {
10     private int number_of_employees;
11     private String positions;
12     private String manager;
13     private String employees;
14     private int depId;
15     private double salary;
16
17     public Company() {
18
19     }
20
21     public static void main(String[] args) {
22         IT it = new IT();
23         HR hr = new HR();
24         Database x = Database.getInstance();
25
26         System.out.println("Hashcode of IT object is: " + it.x.hashCode());
27         System.out.println("Hashcode of HR object is: " + hr.x.hashCode());
28         System.out.println("Hashcode of x object is: " + x.hashCode() + "\n");
29
30         if (it.x == hr.x || hr.x == x) {
31
32             // Print statement
33             System.out.println("Three objects point to the SAME memory location on the heap i.e, to the same object");
34         } else {
35             // Print statement
36             System.out.println("Three objects DO NOT point to the same memory location on the heap");
37         }
38
39         it.x.text = it.x.text.toUpperCase();
40
41         System.out.println("\n" + it.x.text);
42         System.out.println(hr.x.text);
43         System.out.println(x.text + "\n");
44     }
45 }
```

## HR Class, Child

```
8  import java.io.File;
9  import java.sql.Date;
10
11  public class HR extends Company {
12
13      File curriculum_vitae;
14      Date hire_dates;
15      String interviewers;
16      String interviewees;
17
18      Database x = Database.getInstance();
19
20      public HR() {
21
22      }
23
24      public File getCurriculum_vitae() {
25          return curriculum_vitae;
26      }
27
28      public Date getHire_dates() {
29          return hire_dates;
30      }
31
32      public String getInterviewers() {
33          return interviewers;
34      }
35
36      public String getInterviewees() {
37          return interviewees;
38      }
39
40      public Database getX() {
41          return x;
42      }
```

## IT Class, Child

```
9 public class IT extends Company {
10     private int number_of_devices;
11     private String projects;
12     Database x;
13
14     public IT() {
15         x = Database.getInstance();
16     }
17
18     public int getNumber_of_devices() {
19         return number_of_devices;
20     }
21
22     public String getProjects() {
23         return projects;
24     }
25
26     public Database getX() {
27         return x;
28     }
29
30     public void setNumber_of_devices(int number_of_devices) {
31         this.number_of_devices = number_of_devices;
32     }
33
34     public void setProjects(String projects) {
35         this.projects = projects;
36     }
37
38     public void setX(Database x) {
39         this.x = x;
40     }
41 }
```

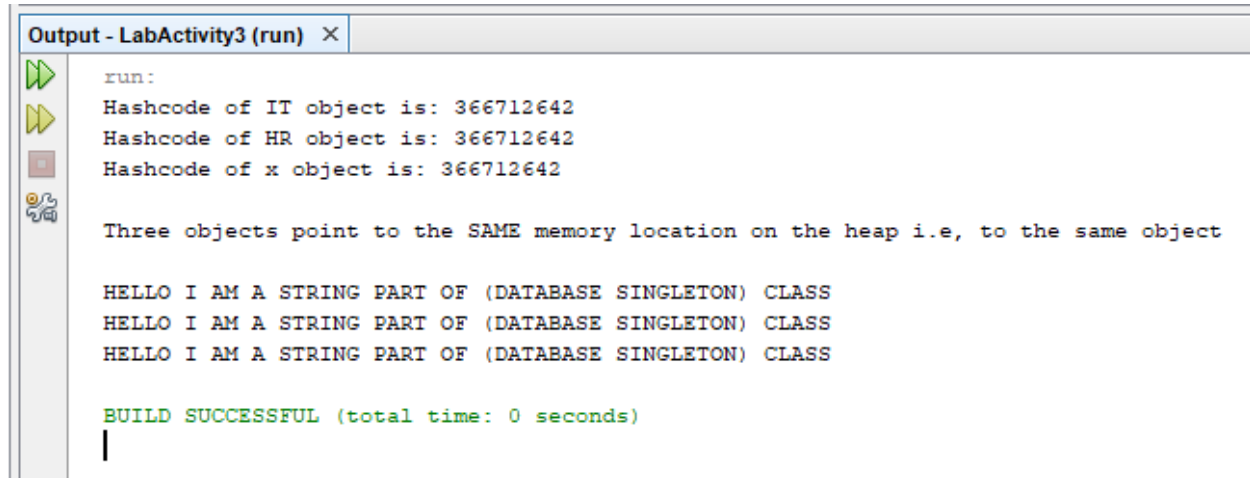
---

## Database Class (Singleton Pattern)

```
8  import java.sql.Connection;
9  import java.sql.DriverManager;
10
11  public class Database {
12
13      private static Database instance = null;
14      public String text;
15      Connection connection;
16
17      private Database() {
18          text = "Hello I am a string part of (Database Singleton) class";
19      }
20
21      public static Database getInstance() {
22          if (instance == null) {
23              instance = new Database();
24          }
25
26          return instance;
27      }
28
29      public boolean connectionToDatabase() {
30          try {
31              Class.forName("com.mysql.jdbc.Driver");
32              connection = DriverManager.getConnection("jdbc:mysql://localhost:3306/sonoo", "root", "root");
33              return true;
34          } catch (Exception e) {
35              return false;
36          }
37      }
38  }
```

---

## Output



```
run:
Hashcode of IT object is: 366712642
Hashcode of HR object is: 366712642
Hashcode of x object is: 366712642

Three objects point to the SAME memory location on the heap i.e, to the same object

HELLO I AM A STRING PART OF (DATABASE SINGLETON) CLASS
HELLO I AM A STRING PART OF (DATABASE SINGLETON) CLASS
HELLO I AM A STRING PART OF (DATABASE SINGLETON) CLASS

BUILD SUCCESSFUL (total time: 0 seconds)
|
```