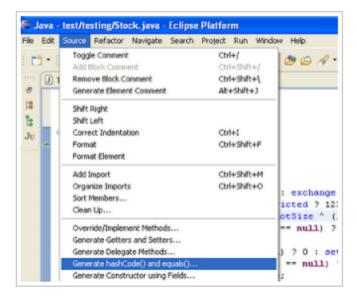# How to write equals() and hashCode()

http://javarevisited.blogspot.sg/2011/10/override-hashcode-in-java-example.html

Let's see how we can override hashcode method in Netbeans and Eclipse.

In Netbeans

1) Write your Class.

2) Right click + insert code + Generate equals() and hashCode().

In Eclipse

1) Write your Class.

2) Go to Source Menu + Generate hashCode() and equals()

Things to remember while overriding hashcode in Java

1. Whenever you override equals method, hashcode should be overridden to be in compliant of equals hashcode contract.

2. hashCode() is declared in Object class and **return type of hashcode method is int** and not long.

3. For immutable object you can cache the hashcode once generated for improved performance.

4. Test your hashcode method for equals hashcode compliance.

5. If you **don't override hashCode( ) method** properly your Object may not function correctly on hash based collection e.g. HashMap, Hashtable or HashSet.

```java
46        @Override
47        public int hashCode() {
48            int hash = 5;
49            hash = 31 * hash + Objects.hashCode(this.firstName);
50            hash = 31 * hash + Objects.hashCode(this.lastName);
51            hash = 31 * hash + this.age;
52            hash = 31 * hash + (int) (Double.doubleToLongBits(this.salary) ^ (Double.doubleToLongBits(this.salary) >>> 32));
53            hash = 31 * hash + (this.isStudent ? 1 : 0);
54            return hash;
55        }
56
57        @Override
58        public boolean equals(Object obj) {
59            if (obj == null) {
60                return false;
61            }
62            if (getClass() != obj.getClass()) {
63                return false;
64            }
65            final Person other = (Person) obj;
66            if (!Objects.equals(this.firstName, other.firstName)) {
67                return false;
68            }
69            if (!Objects.equals(this.lastName, other.lastName)) {
70                return false;
71            }
72            if (this.age != other.age) {
73                return false;
74            }
75            if (Double.doubleToLongBits(this.salary) != Double.doubleToLongBits(other.salary)) {
76                return false;
77            }
78            if (this.isStudent != other.isStudent) {
79                return false;
80            }
81            return true;
82        }
```