



# **EUROPEAN UNIVERSITY OF BANGLADESH**

## **Dept. of CSE (Reg)**

Assignment No: 01

Assignment Name: Abstraction, Keywords(Static, Super) exercises

Course Name: Object Oriented Programming Sessional

Course code: CSE-212

### **Submitted to:**

Name : Sabrin Afroz

Designation : Lecturer

### **Submitted by:**

Name : Shakira Murshida

Id : 250221035

Batch : 31th

Semester : 2nd

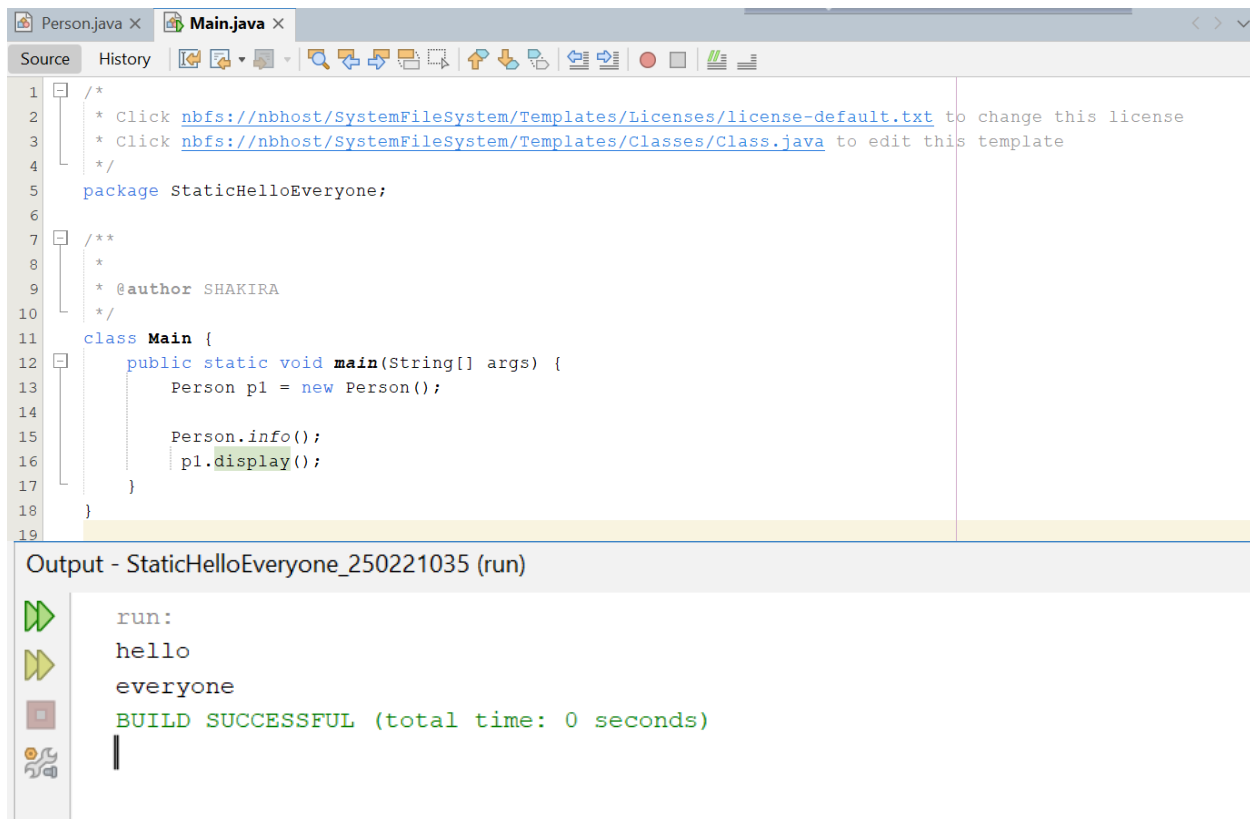
Date of submission : 19. 11. 2025

**Marks:**

**Sign:**

## 1. STATIC HELLO EVERYONE Program

```
class Person {  
  
    static void info() {  
        System.out.println("hello");    }  
  
    void info2() {  
        System.out.println("everyone");    }  
}  
  
class Main {  
    public static void main(String[] args) {  
        Person p1 = new Person();  
  
        Person.info();  
        p1.info2();  
    }  
}
```



The screenshot shows an IDE with two tabs: 'Person.java' and 'Main.java'. The 'Main.java' tab is active, displaying the following code:

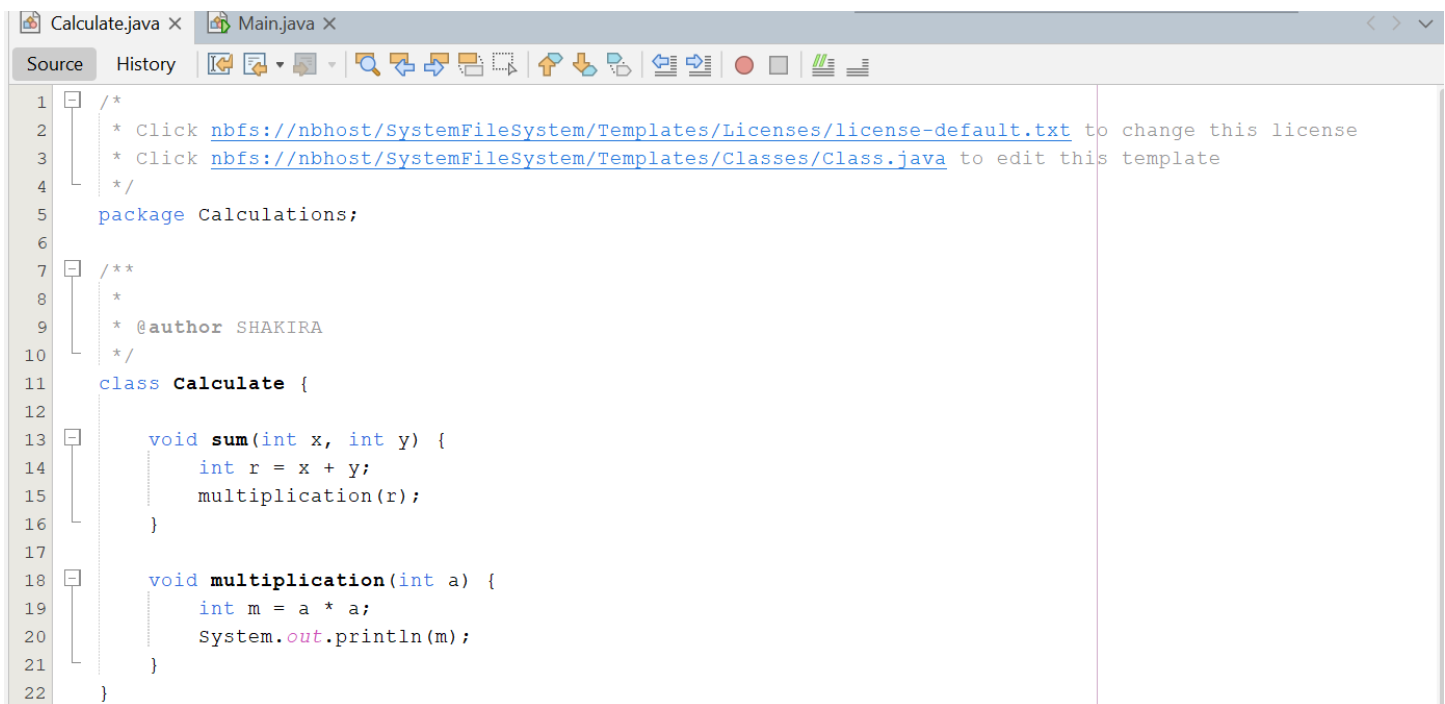
```
1  /*  
2   * Click nbfs://nbhost/SystemFileSystem/Templates/Licenses/license-default.txt to change this license  
3   * Click nbfs://nbhost/SystemFileSystem/Templates/Classes/Class.java to edit this template  
4   */  
5   package StaticHelloEveryone;  
6  
7   /**  
8    *  
9    * @author SHAKIRA  
10   */  
11  class Main {  
12      public static void main(String[] args) {  
13          Person p1 = new Person();  
14  
15          Person.info();  
16          p1.display();  
17      }  
18  }  
19
```

Below the code editor, the 'Output' window shows the execution results:

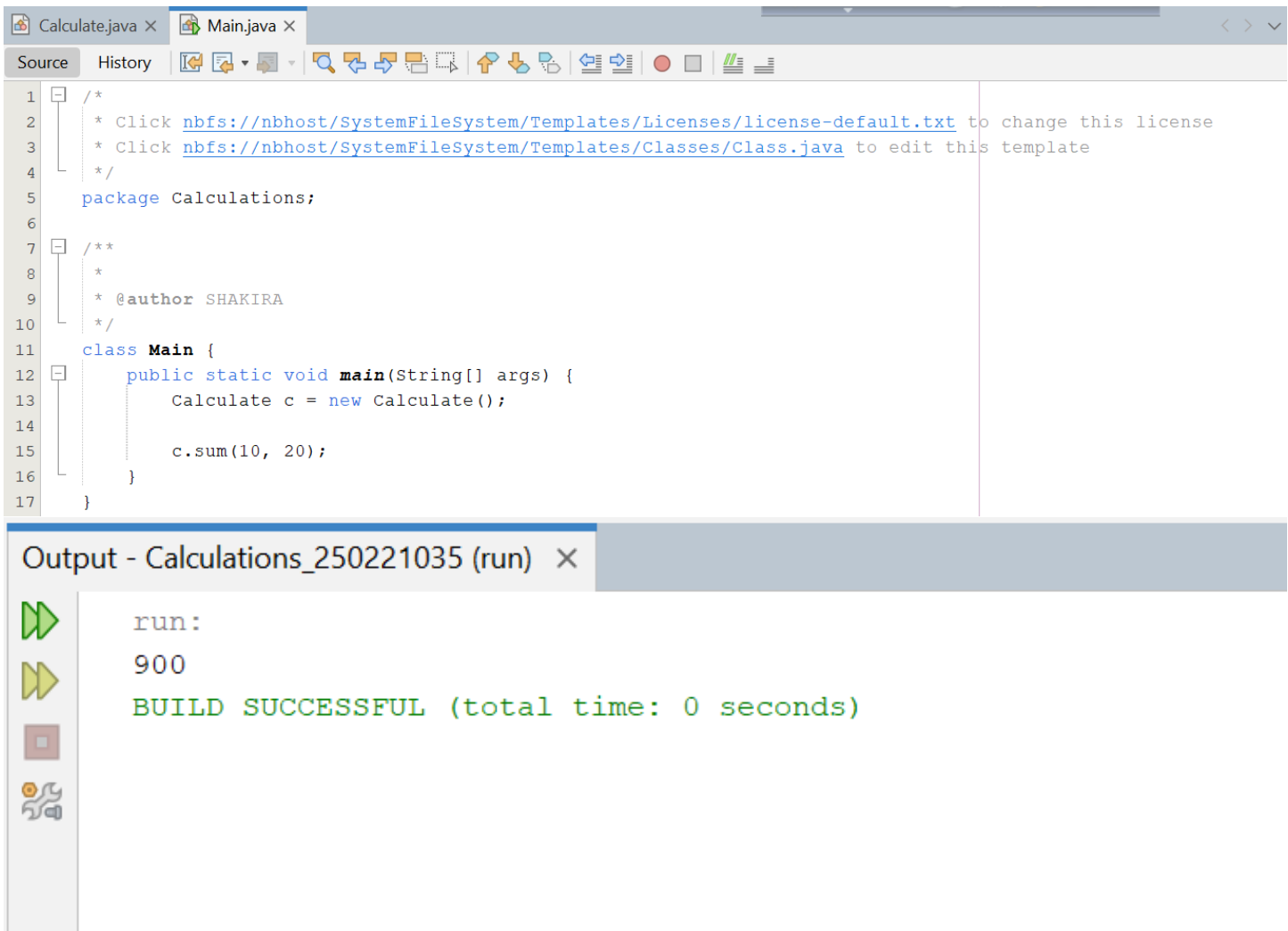
```
run:  
hello  
everyone  
BUILD SUCCESSFUL (total time: 0 seconds)
```

## 2. Calculations Program

```
class Calculate {  
  
    void sum(int x, int y) {  
        int r = x + y;  
        multiplication(r);  
    }  
  
    void multiplication(int a) {  
        int m = a * a;  
        System.out.println(m);  
    }  
}  
  
class Main {  
    public static void main(String[] args) {  
        Calculate c = new Calculate();  
  
        c.sum(10, 20);  
    }  
}
```



```
1  /*  
2   * Click nbfs://nbhost/SystemFileSystem/Templates/Licenses/license-default.txt to change this license  
3   * Click nbfs://nbhost/SystemFileSystem/Templates/Classes/Class.java to edit this template  
4   */  
5   package Calculations;  
6  
7   /**  
8    *  
9    * @author SHAKIRA  
10   */  
11  class Calculate {  
12  
13      void sum(int x, int y) {  
14          int r = x + y;  
15          multiplication(r);  
16      }  
17  
18      void multiplication(int a) {  
19          int m = a * a;  
20          System.out.println(m);  
21      }  
22  }
```



The screenshot shows an IDE with two tabs: 'Calculate.java' and 'Main.java'. The 'Main.java' tab is active, displaying the following code:

```
1  /*
2  * Click nbfs:///nbhost/SystemFileSystem/Templates/Licenses/license-default.txt to change this license
3  * Click nbfs:///nbhost/SystemFileSystem/Templates/Classes/Class.java to edit this template
4  */
5  package Calculations;
6
7  /**
8   *
9   * @author SHAKIRA
10  */
11  class Main {
12      public static void main(String[] args) {
13          Calculate c = new Calculate();
14
15          c.sum(10, 20);
16      }
17  }
```

Below the code editor, the 'Output' window is visible, titled 'Output - Calculations\_250221035 (run)'. It shows the following output:

```
run:
900
BUILD SUCCESSFUL (total time: 0 seconds)
```

### 3. STATIC BLOCK Program

```
class StaticBlock {
    static int x;
    static double b;

    static{
        x=10;
        b=20.2;}

    static void display(){
        System.out.println(x+b);
        System.out.println(x+", "+b);
    }
}

class Main {
    public static void main(String[]args) {

        StaticBlock.display();
        System.out.println(StaticBlock.x);
        System.out.println(StaticBlock.b);
    }
}
```

```
StaticBlock.java x Main.java x
Source History
1  /*
2   * Click nbfs:///nbhost/SystemFileSystem/Templates/Licenses/license-default.txt to change this license
3   * Click nbfs:///nbhost/SystemFileSystem/Templates/Classes/Class.java to edit this template
4   */
5   package StaticBlock;
6
7   /**
8    *
9    * @author SHAKIRA
10   */
11   class StaticBlock {
12       static int x;
13       static double b;
14
15       static{
16           x=10;
17           b=20.2;}
18
19       static void display(){
20           System.out.println(x+b);
21           System.out.println(x+" "+b);
22       }
23   }
```

```
StaticBlock.java x Main.java x
Source History
1  /*
2   * Click nbfs:///nbhost/SystemFileSystem/Templates/Licenses/license-default.txt to change this license
3   * Click nbfs:///nbhost/SystemFileSystem/Templates/Classes/Class.java to edit this template
4   */
5   package StaticBlock;
6
7   /**
8    *
9    * @author SHAKIRA
10   */
11   class Main {
12       public static void main(String[]args) {
13
14           StaticBlock.display();
15           System.out.println(StaticBlock.x);
16           System.out.println(StaticBlock.b);
17       }
18   }
```

#### Output - StaticBlock\_250221035 (run) x

```
run:
30.2
10, 20.2
10
20.2
BUILD SUCCESSFUL (total time: 0 seconds)
```

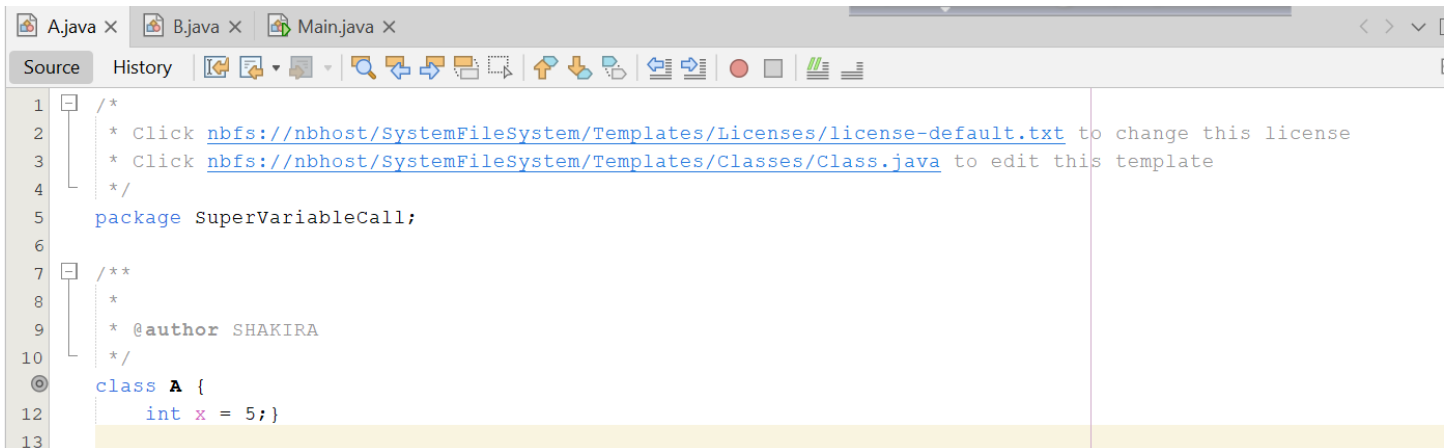
#### 4. SUPER KEYWORD VARIABLE CALL Program

```
class A {
    int x = 5;}

class B extends A {
    int x = 10;

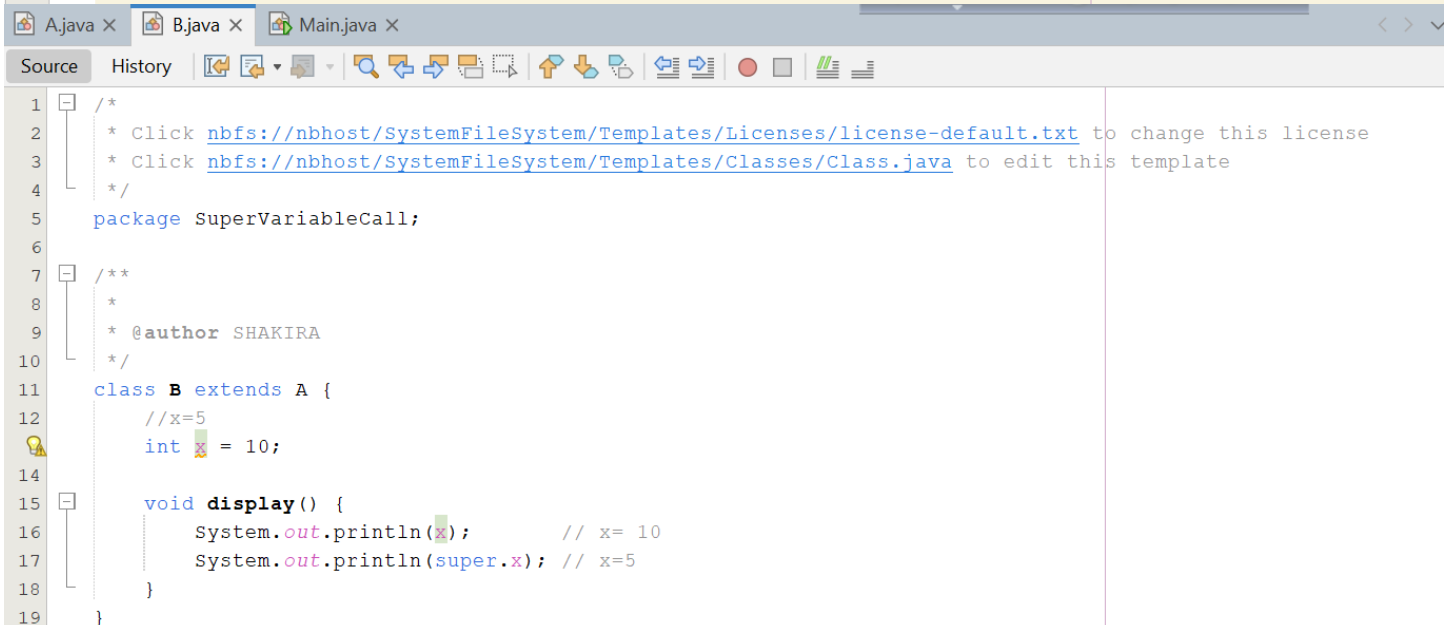
    void display() {
        System.out.println(x);        // prints B's x
        System.out.println(super.x);  // prints A's x
    }
}

class Main {
    public static void main(String[] args) {
        B b = new B();
        b.display();    }
}
```



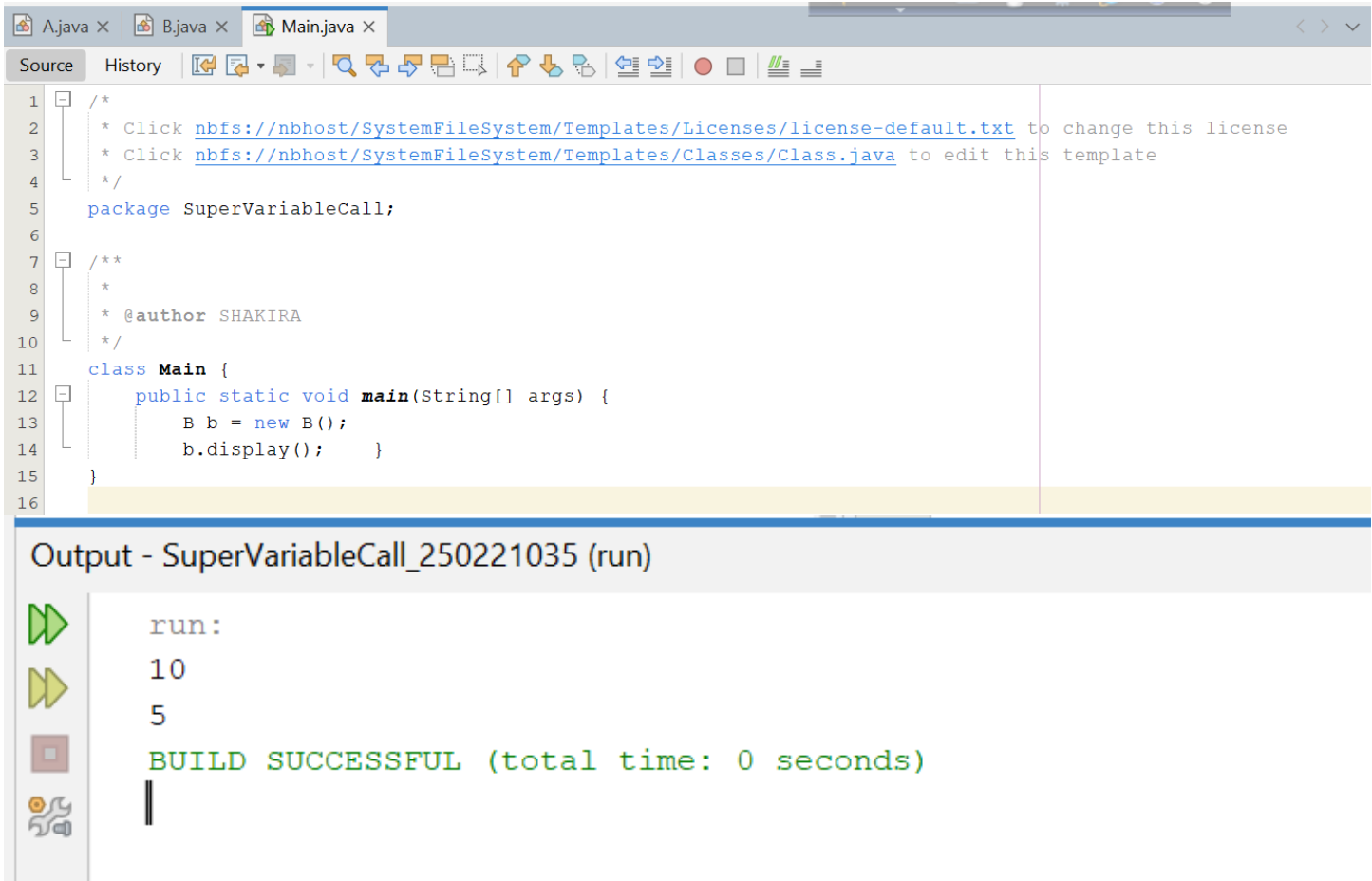
The screenshot shows an IDE with three tabs: A.java, B.java, and Main.java. The A.java tab is active, displaying the following code:

```
1  /*
2  * Click nbfs://nbhost/SystemFileSystem/Templates/Licenses/license-default.txt to change this license
3  * Click nbfs://nbhost/SystemFileSystem/Templates/Classes/Class.java to edit this template
4  */
5  package SuperVariableCall;
6
7  /**
8   *
9   * @author SHAKIRA
10  */
11
12  class A {
13      int x = 5;
14  }
```



The screenshot shows the same IDE with the B.java tab active. The code defines class B extending class A, with a variable x = 10 and a display method:

```
1  /*
2  * Click nbfs://nbhost/SystemFileSystem/Templates/Licenses/license-default.txt to change this license
3  * Click nbfs://nbhost/SystemFileSystem/Templates/Classes/Class.java to edit this template
4  */
5  package SuperVariableCall;
6
7  /**
8   *
9   * @author SHAKIRA
10  */
11
12  class B extends A {
13      //x=5
14      int x = 10;
15
16      void display() {
17          System.out.println(x);        // x= 10
18          System.out.println(super.x);  // x=5
19      }
20  }
```

The screenshot shows an IDE with three tabs: A.java, B.java, and Main.java. The Main.java tab is active, displaying a Java program. The code includes a package declaration, a class Main with a main method, and a call to a method named display() on an object b. The output window below the code shows the results of running the program: 'run:', '10', '5', and 'BUILD SUCCESSFUL (total time: 0 seconds)'.

```
1  /*
2   * Click nbfs://nbhost/SystemFileSystem/Templates/Licenses/license-default.txt to change this license
3   * Click nbfs://nbhost/SystemFileSystem/Templates/Classes/Class.java to edit this template
4   */
5   package SuperVariableCall;
6
7   /**
8    *
9    * @author SHAKIRA
10  */
11  class Main {
12      public static void main(String[] args) {
13          B b = new B();
14          b.display();
15      }
16  }
```

Output - SuperVariableCall\_250221035 (run)

```
run:
10
5
BUILD SUCCESSFUL (total time: 0 seconds)
```

## 5. SUPER KEYWORD METHOD CALL Program

```
class A {
    int x = 20;

    void info() {
        System.out.println("A");
    }
}

class B extends A {
    int x = 10;

    void display() {
        System.out.println(super.x); // 20
        super.info();                // "A"
    }
}


class Main {
    public static void main(String[] args) {
        B b = new B();
        b.display();
    }
}
```

```
A.java x B.java x Main.java x
Source History
1  /*
2   * Click nbfs://nbhost/SystemFileSystem/Templates/Licenses/license-default.txt to change this license
3   * Click nbfs://nbhost/SystemFileSystem/Templates/Classes/Class.java to edit this template
4   */
5   package Super_MethodCall;
6
7   /**
8    *
9    * @author SHAKIRA
10   */
11   class A {
12       int x = 20;
13
14       void info() {
15           System.out.println("A");
16       }
17   }
```

```
A.java x B.java x Main.java x
Source History
1  /*
2   * Click nbfs://nbhost/SystemFileSystem/Templates/Licenses/license-default.txt to change this license
3   * Click nbfs://nbhost/SystemFileSystem/Templates/Classes/Class.java to edit this template
4   */
5   package Super_MethodCall;
6
7   /**
8    *
9    * @author SHAKIRA
10   */
11   class B extends A {
12       int x = 10;
13
14       void display() {
15           System.out.println(super.x); // 20
16           super.info();               // "A"
17       }
18   }
```

```
A.java x B.java x Main.java x
Source History
1  /*
2   * Click nbfs://nbhost/SystemFileSystem/Templates/Licenses/license-default.txt to change this license
3   * Click nbfs://nbhost/SystemFileSystem/Templates/Classes/Class.java to edit this template
4   */
5   package Super_MethodCall;
6
7   /**
8    *
9    * @author SHAKIRA
10   */
11   class Main {
12       public static void main(String[] args) {
13           B b = new B();
14           b.display();
15       }
16   }
```

## Output - SuperMethodCall\_250221035 (run)



```
run:
20
A
BUILD SUCCESSFUL (total time: 0 seconds)
```

## 6. SUPER KEYWORD CONSTRUCTOR CALL Program

```
class A {
    A() {
        System.out.println("A");
    }
}

class B extends A {
    int x = 10;

    B() {
        // Child
        super(); // Calling A's constructor
        System.out.println("B");
    }

    void display() {
        System.out.println("Display method in B");
    }
}





class Main {
    public static void main(String[] args) {
        B b = new B();
        b.display();
    }
}
```

```
A.java x B.java x Main.java x
Source History
1  /*
2   * Click nbfs://nbhost/SystemFileSystem/Templates/Licenses/license-default.txt to change this license
3   * Click nbfs://nbhost/SystemFileSystem/Templates/Classes/Class.java to edit this template
4   */
5   package Super_ConstructorCall;
6
7   /**
8    *
9    * @author SHAKIRA
10   */
11   class A {
12       A() { // Parent
13           System.out.println("A");
14       }
15   }
```

```
A.java x B.java x Main.java x
Source History
1  /*
2   * Click nbfs://nbhost/SystemFileSystem/Templates/Licenses/license-default.txt to change this license
3   * Click nbfs://nbhost/SystemFileSystem/Templates/Classes/Class.java to edit this template
4   */
5   package Super_ConstructorCall;
6
7   /**
8    *
9    * @author SHAKIRA
10   */
11   class B extends A {
12       int x = 10;
13
14       B() { // Child
15           super(); // Calling A's constructor
16           System.out.println("B");
17       }
18
19       void display() {
20           System.out.println("Display method in B");
21       }
22   }
```

```
A.java x B.java x Main.java x
Source History
1  /*
2   * Click nbfs://nbhost/SystemFileSystem/Templates/Licenses/license-default.txt to change this license
3   * Click nbfs://nbhost/SystemFileSystem/Templates/Classes/Class.java to edit this template
4   */
5   package Super_ConstructorCall;
6
7   /**
8    *
9    * @author SHAKIRA
10   */
11   class Main {
12       public static void main(String[] args) {
13           B b = new B();
14           b.display();
15       }
16   }
```

Output - Super\_ConstructorCall\_250221035 (run)

```
run:
A
B
Display method in B
BUILD SUCCESSFUL (total time: 0 seconds)
```

## 7. Vehicle and Car Example Program

```
class Vehicle {
    String color;
    double weight;

    Vehicle(String color, double weight) {
        this.color = color;
        this.weight = weight;
    }

    void attribute() {
        System.out.println("Color: " + color);
        System.out.println("Weight: " + weight);
    }
}

class Car extends Vehicle {
    int gear;

    Car(String color, double weight, int g) {
        super(color, weight); // calling Vehicle constructor
        gear = g;
    }

    void carInfo() {
        super.attribute(); // calling Vehicle method
        System.out.println("Car gear is = " + gear);
    }
}

class Main {
    public static void main(String[] args) {
        Car c1 = new Car("Red", 1500, 5);
        c1.carInfo();
    }
}
```

```
Vehicle.java × Car.java × Main.java ×
Source History
1  /*
2   * Click nbfs://nbhost/SystemFileSystem/Templates/Licenses/license-default.txt to change this license
3   * Click nbfs://nbhost/SystemFileSystem/Templates/Classes/Class.java to edit this template
4   */
5  package Vehicle_car;
6
7  /**
8   *
9   * @author SHAKIRA
10  */
11  class Vehicle {
12      String color;
13      double weight;
14
15      Vehicle(String color, double weight) {
16          this.color = color;
17          this.weight = weight;
18      }
19
20      void attribute() {
21          System.out.println("Color: " + color);
22          System.out.println("Weight: " + weight);
23      }
24  }
```

```
Vehicle.java × Car.java × Main.java ×
Source History
1  /*
2   * Click nbfs://nbhost/SystemFileSystem/Templates/Licenses/license-default.txt to change this license
3   * Click nbfs://nbhost/SystemFileSystem/Templates/Classes/Class.java to edit this template
4   */
5  package Vehicle_car;
6
7  /**
8   *
9   * @author SHAKIRA
10  */
11  public class Car extends Vehicle {
12      int gear;
13
14      Car(String color, double weight, int g) {
15          super(color, weight); // calling Vehicle constructor
16          gear = g;
17      }
18
19      void carInfo() {
20          super.attribute(); // calling Vehicle method
21          System.out.println("Car gear is = " + gear);
22      }
23  }
```

```
Vehicle.java × Car.java × Main.java ×
Source History
1  /*
2   * Click nbfs://nbhost/SystemFileSystem/Templates/Licenses/license-default.txt to change this license
3   * Click nbfs://nbhost/SystemFileSystem/Templates/Classes/Class.java to edit this template
4   */
5   package Vehicle_car;
6
7   /**
8    *
9    * @author SHAKIRA
10   */
11   class Main {
12       public static void main(String[] args) {
13           Car c1 = new Car("Red", 1500, 5);
14           c1.carInfo();
15       }
16
17   }
```

#### Output - Vehicle\_250221035 (run)

```
run:
Color: Red
Weight: 1500.0
Car gear is = 5
BUILD SUCCESSFUL (total time: 0 seconds)
```