



**Faculty of Computing**  
**Department of Information Technology**  
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**Lab Sheet 02, Lab Sheet 03, Lab Sheet 04**

**Subject:** IT1093 Object Oriented Programming

(D/BIS/23/0029)

## Lab Sheet 02

```
1 public class Studet {
2     private String name;
3     private int age;
4     private char grade;
5
6     Studet() {
7         name = "Joe";
8         age = 23;
9         grade = 'A';
10    }
11
12    Studet(String n, int a, char g) {
13        name = n;
14        age = a;
15        grade = g;
16    }
17 }
```

Run Mmain x

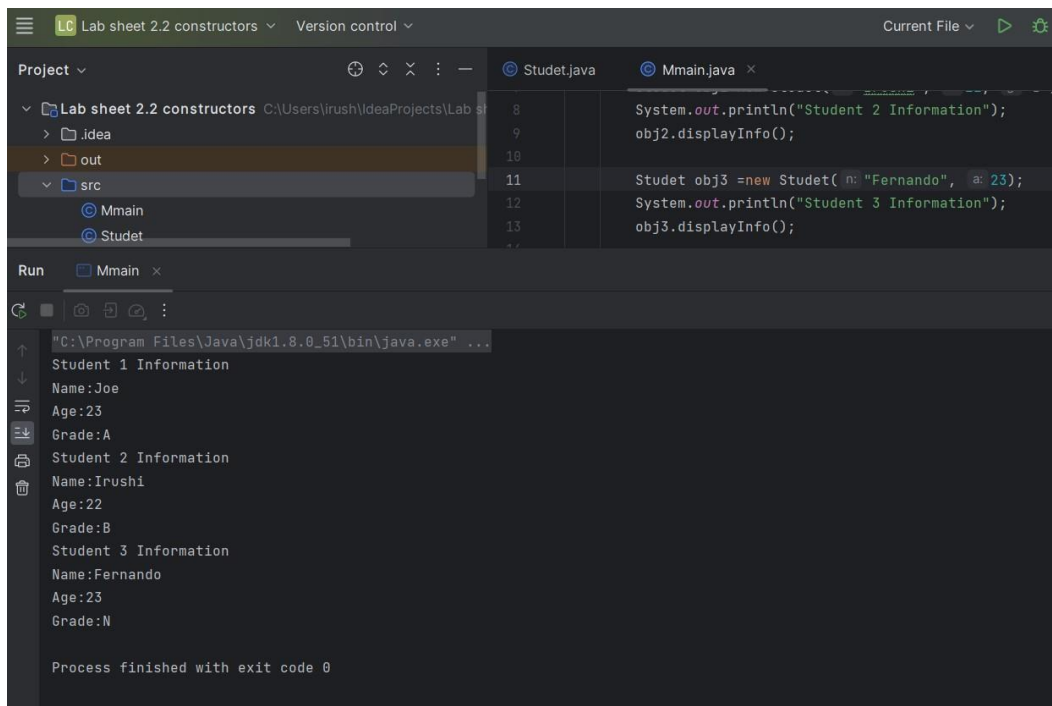
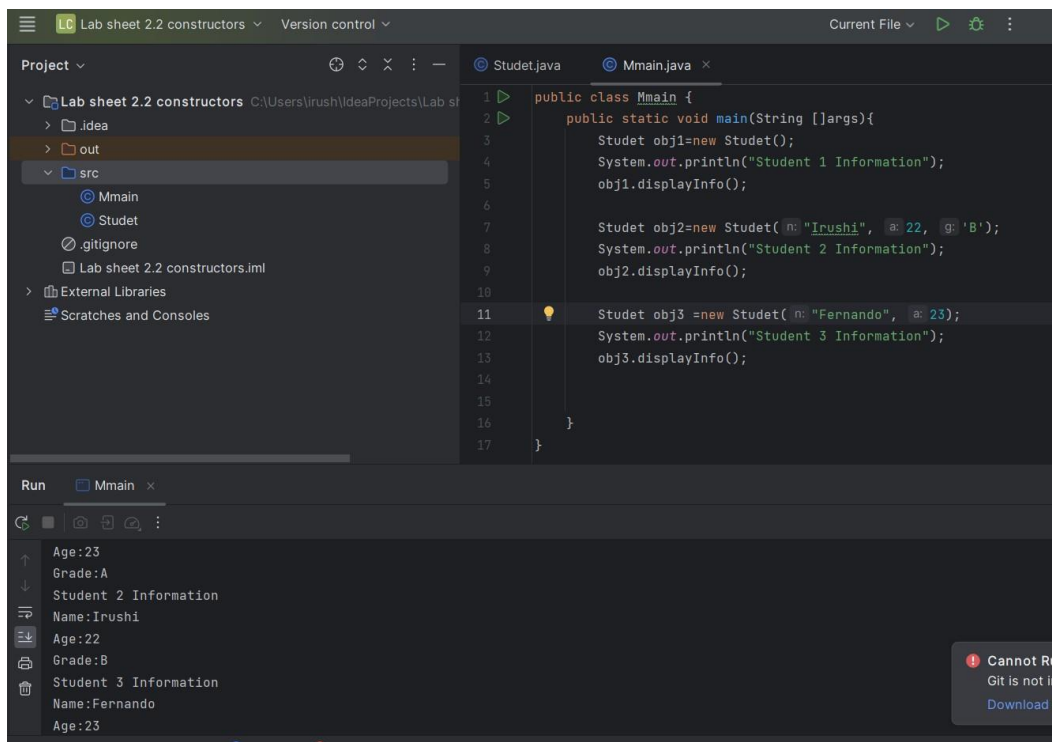
Name: Fernando  
Age: 23  
Grade: N

```
11
12
13    Studet(String n, int a, char g) {
14        name = n;
15        age = a;
16        grade = g;
17    }
18
19    Studet(String n, int a) {
20        name = n;
21        age = a;
22        grade = 'N';
23    }
24
25    void displayInfo() {
26        System.out.println("Name:" + name); //System.out.println(name+ "age+ " + grade);
27        System.out.println("Age:" + age);
28        System.out.println("Grade:" + grade);
29    }
30 }
```

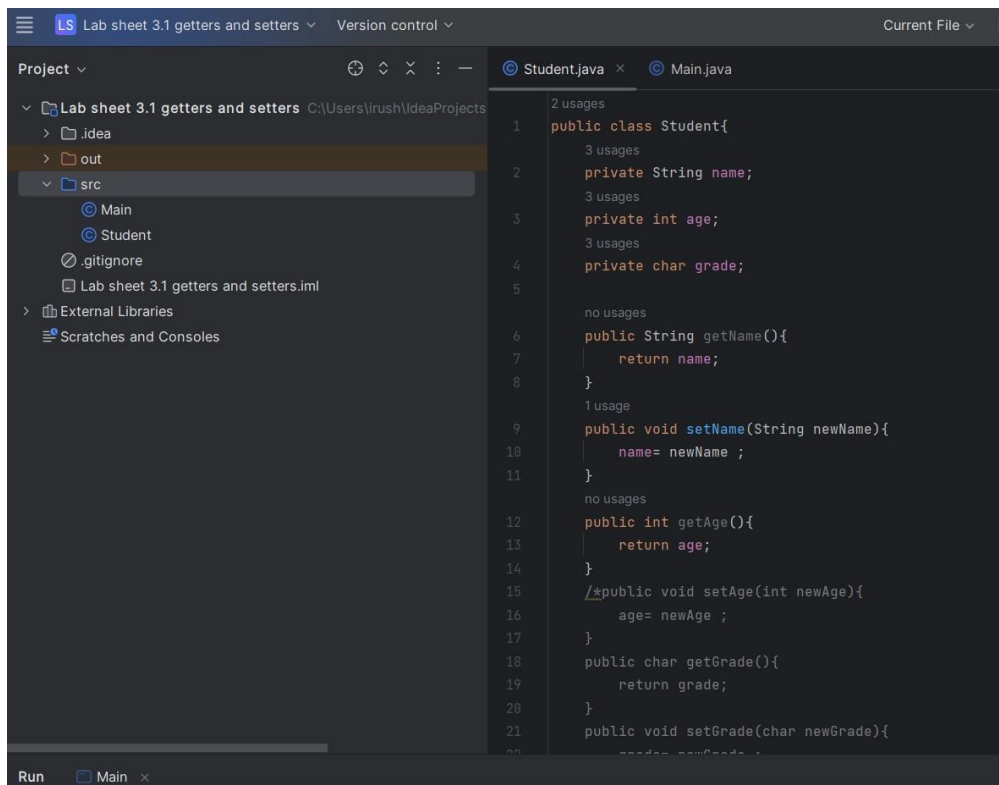
Run Mmain x

Name: Fernando  
Age: 23  
Grade: N

Cannot Run Git  
Git is not installed  
Download and Install



## Lab Sheet 03



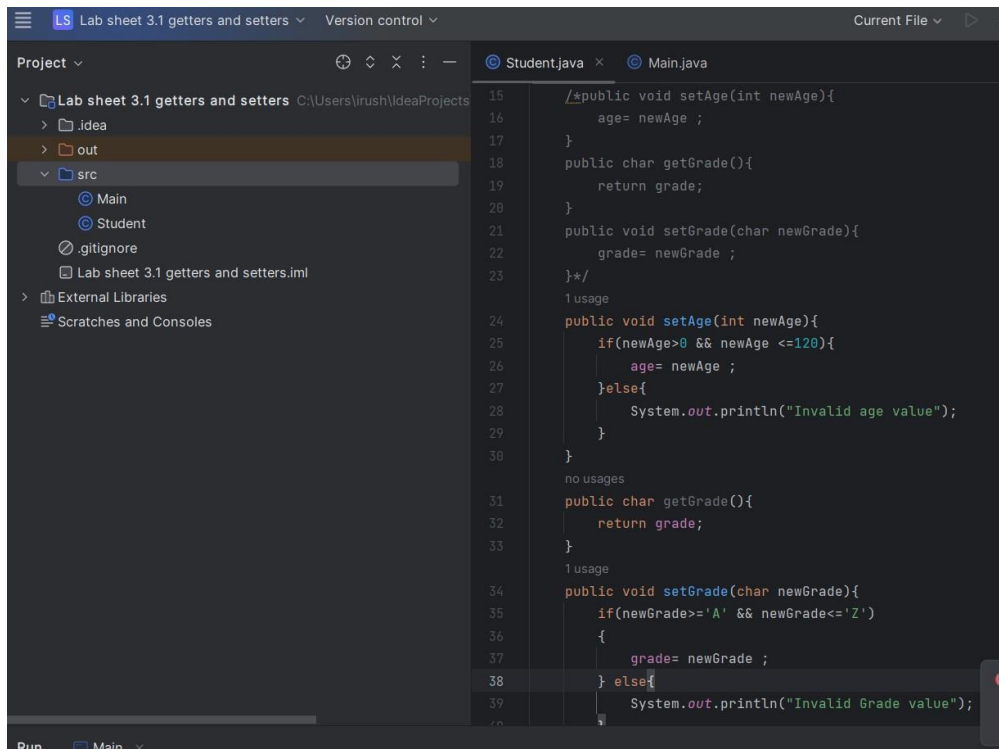
Project: Lab sheet 3.1 getters and setters

src

- Main
- Student
- .gitignore
- Lab sheet 3.1 getters and setters.iml

Student.java

```
1 public class Student{
2     private String name;
3     private int age;
4     private char grade;
5
6     public String getName(){
7         return name;
8     }
9     public void setName(String newName){
10        name= newName ;
11    }
12    public int getAge(){
13        return age;
14    }
15    /*public void setAge(int newAge){
16        age= newAge ;
17    }
18    public char getGrade(){
19        return grade;
20    }
21    public void setGrade(char newGrade){
22        grade= newGrade ;
23    }
```



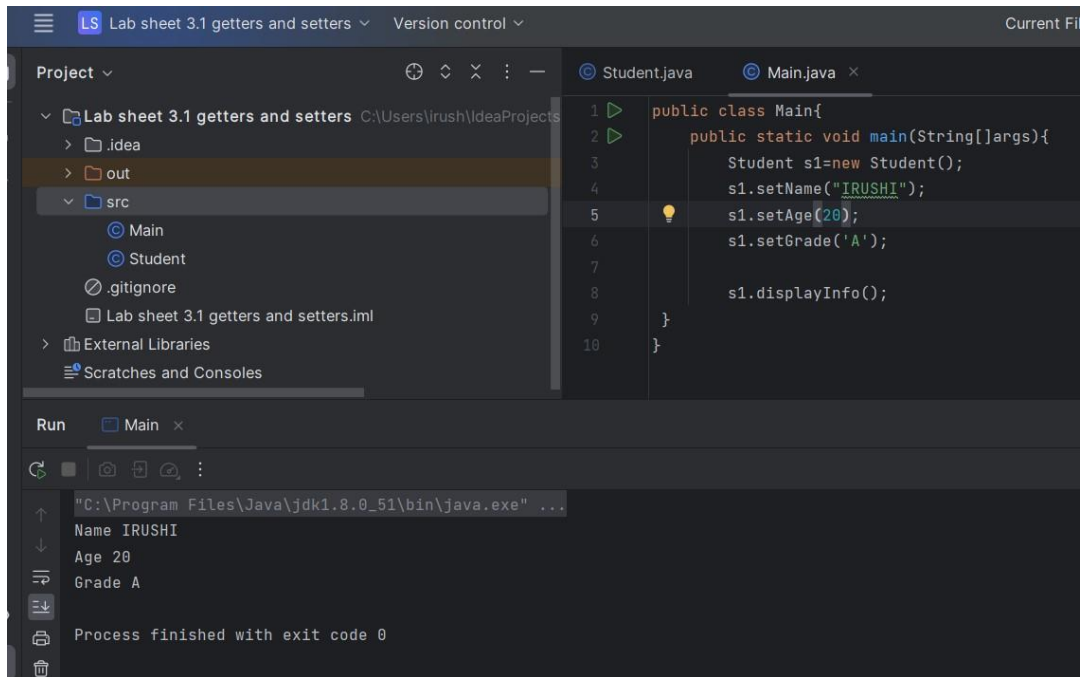
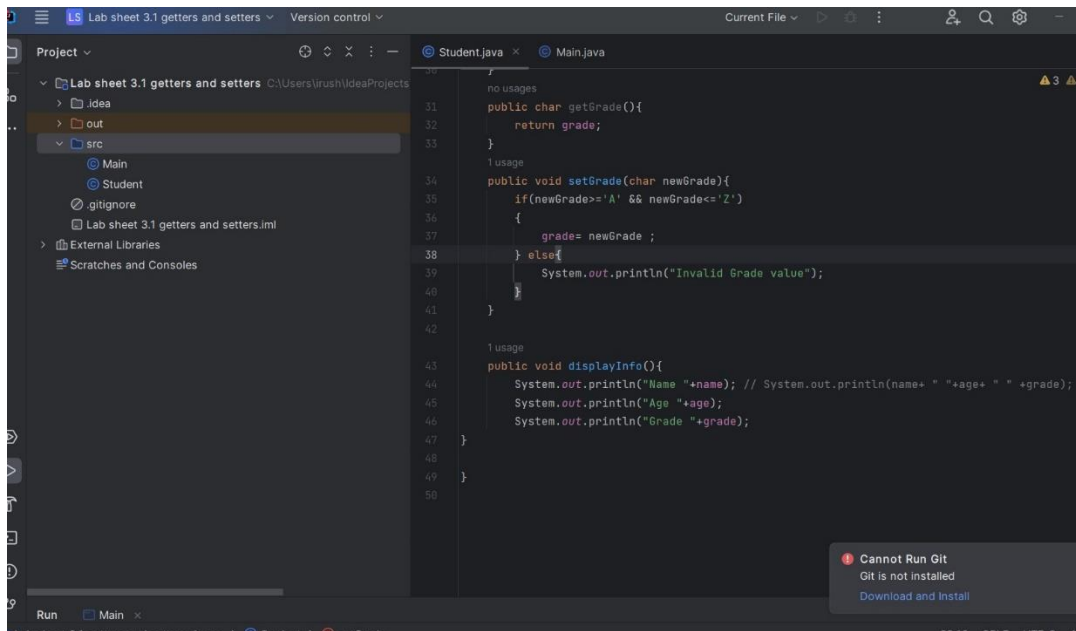
Project: Lab sheet 3.1 getters and setters

src

- Main
- Student
- .gitignore
- Lab sheet 3.1 getters and setters.iml

Student.java

```
15 /*public void setAge(int newAge){
16     age= newAge ;
17 }
18 public char getGrade(){
19     return grade;
20 }
21 public void setGrade(char newGrade){
22     grade= newGrade ;
23 }*/
24 public void setAge(int newAge){
25     if(newAge>0 && newAge <=120){
26         age= newAge ;
27     }else{
28         System.out.println("Invalid age value");
29     }
30 }
31 public char getGrade(){
32     return grade;
33 }
34 public void setGrade(char newGrade){
35     if(newGrade>='A' && newGrade<='Z')
36     {
37         grade= newGrade ;
38     } else{
39         System.out.println("Invalid Grade value");
40     }
```



## Lab Sheet 04

```
1  class Animal {
2      private String name;
3      private int age;
4
5      public Animal(String name, int age) {
6          this.name = name;
7          this.age = age;
8      }
9
10     public void makeSound() {
11         System.out.println("Animal makes a generic sound");
12     }
13
14     @Override
15     public String toString() {
16         return "Name: " + name + ", Age: " + age;
17     }
18 }
19
```

```
1  class Mammal extends Animal {
2      private String furColor;
3
4
5      public Mammal(String name, int age, String furColor) {
6          super(name, age);
7          this.furColor = furColor;
8      }
9
10     @Override
11     public void makeSound() {
12         System.out.println("Mammal makes a mammal-specific sound");
13     }
14
15     @Override
16     public String toString() {
17         return super.toString() + ", Fur Color: " + furColor;
18     }
19 }
20
```

```
lab sheet 4- inheritance.iml  Version control
Animal.java  Mammal.java  Bird.java x  Dog.java  Main1.java

2 usages
1  class Bird extends Animal {
    2 usages
2      private double wingSpan;
3
    1 usage
4      public Bird(String name, int age, double wingSpan) {
5          super(name, age);
6          this.wingSpan = wingSpan;
7      }
8
    4 usages
9      @Override
10     public void makeSound() {
11         System.out.println("Bird makes a bird-specific sound");
12     }
13
    @Override
14
15     public String toString() {
16         return super.toString() + ", Wing Span: " + wingSpan;
17     }
18 }
19
```

```
lab sheet 4- inheritance.iml  Version control
Animal.java  Mammal.java  Bird.java  Dog.java x  Main1.java

2 usages
1  class Dog extends Mammal {
    2 usages
2      private String breed;
3
    1 usage
4      public Dog(String name, int age, String furColor, String breed) {
5          super(name, age, furColor);
6          this.breed = breed;
7      }
8
    @Override
9
10     public String toString() {
11         return super.toString() + ", Breed: " + breed;
12     }
13 }
```

The screenshot shows an IDE window titled "lab sheet 4- inheritance.iml" with a "Version control" dropdown. The editor displays five tabs: "Animal.java", "Mammal.java", "Bird.java", "Dog.java", and "Main1.java". The "Main1.java" tab is active, showing the following code:

```
9      animal.makeSound();
10     mammal.makeSound();
11     bird.makeSound();
12     dog.makeSound();
13
14     System.out.println("Animal: " + animal);
15     System.out.println("Mammal: " + mammal);
16     System.out.println("Bird: " + bird);
17     System.out.println("Dog: " + dog);
18 }
19 }
```

Below the editor is a "Run" button and a "Main1" tab. The output console shows the execution results:

```
"C:\Program Files\Java\jdk1.8.0_51\bin\java.exe" ...
Animal makes a generic sound
Mammal makes a mammal-specific sound
Bird makes a bird-specific sound
Mammal makes a mammal-specific sound
Animal: Name: Generic Animal, Age: 5
Mammal: Name: Mammal Animal, Age: 3, Fur Color: Brown
Bird: Name: Bird Animal, Age: 2, Wing Span: 20.5
Dog: Name: Dog Animal, Age: 4, Fur Color: Black, Breed: Labrador

Process finished with exit code 0
```