1) student Information

<//java>

```
class student {
    private string name;
    private int rollNo;
    private string faculty;

    public student (stringname, introllNo, string faculty) {
        this.name = name;
        this.rollNo = rollNo;
        this. faculty = faculty;
    }
    public string getname() {
        return name;
    }
    public int get RollNo() {
        return rollNo;
    }
    public string get faculty() {
        return faculty;
    }
    public void setname (string name) {
        this.name = name;
    }
    public void set RollNo(int rollNo) {
        this.rollNo = rollNo;
    }
}
```

```
public void set faculty (string faculty){
    this. faculty = faculty;
}
    public void display profile() {
        system. out.println("name:"+name);
        system.out. println( "Roll No : "+roll No);
        system. out. println("Faculty:"+ Faculty);
    }
}
public class main{
    public static void main (string[ ]args){
        student s= new student("Aayushma", 1, BCSIT");
            s. display profile();
    }
}
```

main.java  Version Control  Current File  Trial

Project

main.java C:\Users\acer\IdeaProjects\main.java
- .idea
- out
- src
  - Main.java
- .gitignore
- main.java
- main.java.iml
- External Libraries
- Scratches and Consoles

Main.java  Trial

```java
class Student {  2 usages
    public void setFaculty(String faculty) {  no usages
        this.faculty = faculty;
    }

    public void displayProfile() {  1 usage
        System.out.println("Name: " + name);
        System.out.println("Roll No: " + rollNo);
        System.out.println("Faculty: " + faculty);
    }
}

public class Main {
    public static void main(String[] args) {
        Student s = new Student( name: "Aayushma",  rollNo: 1,  faculty: "BCSIT");
        s.displayProfile();
```

Run  Main

```
C:\Users\acer\.jdks\openjdk-26.0.1\bin\java.exe "-javaagent:C:\Program Files\JetBrains\In
Name: Aayushma
Roll No: 1
Faculty: BCSIT

Process finished with exit code 0
```

Performance

Show Results  00:00

Process Terminated

main.java > src > Main.java  48:2  LF  UTF-8  4 spaces

ChatGPT can make mistakes. Check important info.

24°C Mostly cloudy  Search  9:08 AM 6/22/2026

2.) Employee Inheritance

```
//>java

class Employee{
    void displaydetails(){
        system.out.println("Employee");
    }
}

class Teacher extends Employee{
    void displaydetails(){
        system.out.println("Teacher");
    }
}

class Adminstaff extends Employee{
    void display Details(){
        System.out.println("Admin staff");
    }
}

public class main{
    public static void main(string[]args){
        Employee t = new Teacher();
        Employee a = new Adminstaff();

        t.displaydetails();
        a.displaydetails();
    }
}
```

main.java  Version Control  Current File  Trial

Project

main.java C:\Users\acer\IdeaProjects\main.java
- .idea
- out
- src
  - Main.java
- .gitignore
- main.java
- main.java.iml

External Libraries

Scratches and Consoles

Main.java  Trial

```java
class AdminStaff extends Employee {  1 usage
    @Override  2 usages
    void displayDetails() {
        System.out.println("Admin Staff");
    }
}

public class Main {
    public static void main(String[] args) {
        Employee t = new Teacher();
        Employee a = new AdminStaff();

        t.displayDetails();
        a.displayDetails();
    }
}
```

Run  Main

```
C:\Users\acer\.jdks\openjdk-26.0.1\bin\java.exe "-javaagent:C:\Program Files\JetBrains\Intell
Teacher
Admin Staff

Process finished with exit code 0
```

Performance

Show Results  00:00

Process Terminated

main.java > src > Main.java  29:2  LF  UTF-8  4 spaces

24°C Mostly cloudy  Search  9:09 AM 6/22/2026

3.) Course Registration

```
<//java>

import java.util.ArrayList;

class course {
  string courseName;
    course(string courseName){
      this.courseName = courseName;
  }
}
  class student{
    string name;
  ArrayList<course> courses = new ArrayList<>();

    student(string name){
        this.name = name;
  }
  void addcourse(course c){
      course.add(c);
  }
  void displaycourses(){
  system.out.println("courses:");
    for(course c : courses){
        system.out.println(c.courseName);
  }
  }
}
```

Note Nest
Date / /
Page No.

```
public class main{
    public static void main(string[] args){
        student s = new student ("Ram");

        s.addcourse (new course ("Java"));
        s.add course (new course ("database"));

        s.displaycourses();
    }
}
```

main.java  Version Control  Current File  Trial

Project

- main.java C:\Users\acer\IdeaProjects\main.java
  - .idea
  - out
  - src
    - Main.java
  - .gitignore
  - main.java
  - main.java.iml
- External Libraries
- Scratches and Consoles

Main.java  Trial

```java
class Student {  2 usages
    void displayCourses() {  1 usage
        System.out.println(c.courseName);
    }
}

public class Main {
    public static void main(String[] args) {
        Student s = new Student( name: "Ram");

        s.addCourse(new Course( courseName: "Java"));
        s.addCourse(new Course( courseName: "Database"));

        s.displayCourses();
    }
}
```

Run  Main

```
C:\Users\acer\.jdks\openjdk-26.0.1\bin\java.exe "-javaagent:C:\Program Files\JetBrains\Intell
Courses:
Java
Database

Process finished with exit code 0
```

Performance

Show Results  00:00

Process Terminated

main.java > src > Main.java  40:2  LF  UTF-8  4 spaces

24°C Mostly cloudy  Search  9:10 AM 6/22/2026

4.) Abstract student fee

.//.java

```
abstract class student{
    abstract double calculatefee();
}
class undergraduate extends student{
    double calculatefee (){
        return 50000;
    }
}
class Graduate extends student{
    double calculate fee(){
        return 80000;
    }
}
public class main{
    public static void main(string [] args){
        student u=new undergraduate();
        student g=new Graduate();

        system.out.println("UG fee="+u.calculate fee());
        system.out.println("Graduate fee="+g.calculate
                                                fee());
    }
}
```

main.java  Version Control  Current File  Trial

Project

main.java C:\Users\acer\IdeaProjects\main.java
- .idea
- out
- src
  - Main.java
- .gitignore
- main.java
- main.java.iml
- External Libraries
- Scratches and Consoles

Main.java  Trial

```java
}

class Graduate extends Student {  1 usage
    double calculateFee() {  2 usages
        return 80000;
    }
}

public class Main {
    public static void main(String[] args) {
        Student u = new Undergraduate();
        Student g = new Graduate();

        System.out.println("UG Fee = " + u.calculateFee());
        System.out.println("Graduate Fee = " + g.calculateFee());
    }
}
```

Run  Main

```
C:\Users\acer\.jdks\openjdk-26.0.1\bin\java.exe "-javaagent:C:\Program Files\JetBrains\Intell
UG Fee = 50000.0
Graduate Fee = 80000.0

Process finished with exit code 0
```

Performance

Show Results  00:00

Process Terminated

main.java > src > Main.java  25:2  LF  UTF-8  4 spaces

24°C Mostly cloudy  Search  9:11 AM 6/22/2026

5.) Interface Result processor

```
<Jyava

interface Result processor {
        void calculate Grade(int marks);
}
class Engineering Department implements Result processor {
  public void calculate Grade(int marks) {
        system.out.println(marks) = 80 ? "Grade A" : "Grade B");
  }
}
class management Department implements Result processor {
        public void calculate Grade (int marks) {
        system.out.println (marks) = 70 ? "Grade A" : "Grade B");
  }
}
public class main {
        public static void main (string [ ] args) {
          Result processor e = new Engineering Department();
          Result processor m = new management Department();

        e.calculate Grade (85);
        m.calculate Grade (75);
  }
}
```

main.java  Version Control  Current File  Trial

Project

main.java C:\Users\acer\IdeaProjects\main.java
- .idea
- out
- src
  - Main.java
- .gitignore
- main.java
- main.java.iml
- External Libraries
- Scratches and Consoles

Main.java  Trial

```java
}

class ManagementDepartment implements ResultProcessor {  1 usage
    public void calculateGrade(int marks) {  2 usages
        System.out.println(marks >= 70 ? "Grade A" : "Grade B");
    }
}

public class Main {
    public static void main(String[] args) {
        ResultProcessor e = new EngineeringDepartment();
        ResultProcessor m = new ManagementDepartment();

        e.calculateGrade( marks: 85);
        m.calculateGrade( marks: 75);
    }
}
```

Run  Main

```
C:\Users\acer\.jdks\openjdk-26.0.1\bin\java.exe "-javaagent:C:\Program Files\JetBrains\Intell
Grade A
Grade A

Process finished with exit code 0
```

Performance

Show Results  00:00

Process Terminated

main.java > src > Main.java  25:2  LF  UTF-8  4 spaces

24°C Mostly cloudy  Search  9:11 AM 6/22/2026

6) Library members

```
4Jjava

class member {
  int borrowing limit()
    return 0;
  }
}
class studentMember extends member{
  @override
    int borrowing limit() {
      return 3;
  }
}
class TeacherMember extends member{
    @override
  int borrowing limit() {
      return 10;
  }
}
public class main{
  public static void main(string [] args) {
system.out.println("student limit:"+new student
    Member().borrowing limit());
system.out.println("Teacher limit:"+new Teacher
    member().borrowing limit());
  }
}
```

main.java  Version Control  Current File  Trial

Project

- main.java C:\Users\acer\IdeaProjects\main.java
  - .idea
  - out
  - src
    - Main.java
  - .gitignore
  - main.java
  - main.java.iml
- External Libraries
- Scratches and Consoles

Main.java  Trial

```java
class TeacherMember extends Member {  1 usage
    @Override  2 usages
    int borrowingLimit() {
        return 10;
    }
}

public class Main {
    public static void main(String[] args) {
        System.out.println("Student Limit: " +
                new StudentMember().borrowingLimit());

        System.out.println("Teacher Limit: " +
                new TeacherMember().borrowingLimit());
    }
}
```

Run  Main

```
C:\Users\acer\.jdks\openjdk-26.0.1\bin\java.exe "-javaagent:C:\Program Files\JetBrains\Intell
Student Limit: 3
Teacher Limit: 10

Process finished with exit code 0
```

Performance  Show Results  00:00  Process Terminated

main.java > src > Main.java  29:2  LF  UTF-8  4 spaces

24°C Mostly cloudy  Search  9:12 AM 6/22/2026

7.) Attendance

```
//1 java

class Attendance {
    double calculateAttendance(int attended, int total) {
        return 0;
    }
}

class EngineeringAttendance extends Attendance {
    @Override
    double calculateAttendance(int attended, int total) {
        return attended * 100.0 / total;
    }
}

class medicalAttendance extends Attendance {
    @Override
    double calculateAttendance(int attended, int total) {
        return attended * 100.0 / total;
    }
}

public class main {
    public static void main(String[] args) {
        Attendance e = new EngineeringAttendance();

        System.out.println(
            "Attendance =" +
                e.calculateAttendance(45, 50) + "%"
        );
    }
}
```

main.java  Version Control  Current File  Trial

Project

- main.java C:\Users\acer\IdeaProjects\main.java
  - .idea
  - out
  - src
    - Main.java
  - .gitignore
  - main.java
  - main.java.iml
- External Libraries
- Scratches and Consoles

Main.java  Trial

```java
class MedicalAttendance extends Attendance {  no usages
    @Override  1 usage
    double calculateAttendance(int attended, int total) {
        return attended * 100.0 / total;
    }
}

public class Main {
    public static void main(String[] args) {
        Attendance e = new EngineeringAttendance();

        System.out.println(
                "Attendance = " +
                        e.calculateAttendance( attended: 45,  total: 50) + "%"
        );
    }
}
```

Run  Main

```
C:\Users\acer\.jdks\openjdk-26.0.1\bin\java.exe "-javaagent:C:\Program Files\JetBrains\Intell
Attendance = 90.0%

Process finished with exit code 0
```

Performance

Show Results  00:00

Process Terminated

main.java > src > Main.java  30:2  LF  UTF-8  4 spaces

25°C Partly sunny  Search  9:12 AM 6/22/2026

8.) Notification Interface

```
</>Java

Interface Notification{
    void send Notification(String message);
}
class Email Notification implements Notification {
  public void sendNotification(String message){
    System.out.println("Email sent:" + message);
  }
}
  class SMS Notification implements Notification {
    public void send Notification (String message){
    System.out.println("SMS sent:" + message);
  }
}
public class Main{
  public static void main(String[] args){
    Notification email = new Email Notification();
    Notification sms = new SMS Notification();

  email.send Notification("Admission confirmed");
    sms.send Notification("Fee Dye");
  }
}
```

main.java  Version Control  Current File  Trial

Project

- main.java C:\Users\acer\IdeaProjects\main.java
  - .idea
  - out
  - src
    - Main.java
    - .gitignore
    - main.java
    - main.java.iml
  - External Libraries
  - Scratches and Consoles

Main.java  Trial

```java
}

class SMSNotification implements Notification {  1 usage
    public void sendNotification(String message) {  2 usages
        System.out.println("SMS Sent: " + message);
    }
}

public class Main {
    public static void main(String[] args) {
        Notification email = new EmailNotification();
        Notification sms = new SMSNotification();

        email.sendNotification("Admission Confirmed");
        sms.sendNotification("Fee Due");
    }
}
```

Run  Main

```
C:\Users\acer\.jdks\openjdk-26.0.1\bin\java.exe "-javaagent:C:\Program Files\JetBrains\Intell
Email Sent: Admission Confirmed
SMS Sent: Fee Due

Process finished with exit code 0
```

Performance

Show Results  00:00

Process Terminated

main.java > src > Main.java  25:2  LF  UTF-8  4 spaces

25°C Partly sunny  Search  9:13 AM 6/22/2026

Date / /
Page No.

9.) unique student ID

Usjava

```
class student {
    private static int counter = 1000;
    private int id;

student() {
    id = ++counter;
}
void display ID() {
    system.out.println("student ID:" + id);
}
}
public class main {
    public static void main(string [] args) {
        student s1 = new student();
        student s2 = new student();

        s1. display ID();
        s2. display ID();
    }
}
```

main.java  Version Control  Current File  Trial

Project

main.java C:\Users\acer\IdeaProjects\main.java
- .idea
- out
- src
  - Main.java
- .gitignore
- main.java
- main.java.iml
- External Libraries
- Scratches and Consoles

Main.java  Trial

```java
class Student {  4 usages
    }

    void displayID() {  2 usages
        System.out.println("Student ID: " + id);
    }
}

public class Main {
    public static void main(String[] args) {
        Student s1 = new Student();
        Student s2 = new Student();

        s1.displayID();
        s2.displayID();
    }
}
```

Run  Main

```
C:\Users\acer\.jdks\openjdk-26.0.1\bin\java.exe "-javaagent:C:\Program Files\JetBrains\Intell
Student ID: 1001
Student ID: 1002

Process finished with exit code 0
```

Performance

Show Results  00:00

Process Terminated

main.java > src > Main.java  22:2  LF  UTF-8  4 spaces

25°C Partly sunny  Search  9:13 AM 6/22/2026

Date
Page No.

20.) scholarship

```
//Java

abstract class scholarship {
    abstract boolean isEligible (double value);
}
class meritschlorship extends schlorship {
  boolean isEligible (double percentage) {
    return percentage >= 80;
  }
}
class Need Based schlorship extends scholarship {
  boolean isEligible (double income) {
    return income <= 200000;
  }
}
  public class main {
  public static void main (string [] args) {
  scholarship merit = new meritscholarship ();
  scholarship merit = new Need Based scholarship ();

      system. out. println ("merit Eligible :" + merit.
                                  is Eligible (85));
  system. out. println ("Need Based Eligible :"
                                  + need. is Eligible (250000));
  }
}
```

main.java  Version Control  Current File  Trial

Project

main.java C:\Users\acer\IdeaProjects\main.java
- .idea
- out
- src
  - Main.java
- .gitignore
- main.java
- main.java.iml
- External Libraries
- Scratches and Consoles

Main.java  Trial

```java
class NeedBasedScholarship extends Scholarship {  1 usage
        return income <= 200000;
    }
}

public class Main {
    public static void main(String[] args) {
        Scholarship merit = new MeritScholarship();
        Scholarship need = new NeedBasedScholarship();

        System.out.println("Merit Eligible: "
                + merit.isEligible( value: 85));

        System.out.println("Need Based Eligible: "
                + need.isEligible( value: 150000));
    }
}
```

Run  Main

```
C:\Users\acer\.jdks\openjdk-26.0.1\bin\java.exe "-javaagent:C:\Program Files\JetBrains\Intell
Merit Eligible: true
Need Based Eligible: true

Process finished with exit code 0
```

Performance

Show Results  00:00

Process Terminated

main.java > src > Main.java  28:2  LF  UTF-8  4 spaces

25°C Partly sunny  Search  9:14 AM 6/22/2026