```
+---------------------+
|    [1] TRIANGLE     |
+---------------------+
package Task1;

public class GeometricObject {
        private String color ;
        private boolean filled ;
        private java.util.Date dateCreated ;

        public GeometricObject() {
                super();
                color = "white";
                filled = false ;
                dateCreated = new java.util.Date();
        }
        public GeometricObject(String color, boolean filled) {
                super();
                this.color = color;
                this.filled = filled;
                dateCreated = new java.util.Date();
        }
        public String getColor() {
                return color;
        }
        public void setColor(String color) {
                this.color = color;
        }
        public boolean isFilled() {
                return filled;
        }
        public void setFilled(boolean filled) {
                this.filled = filled;
        }
        public java.util.Date getDateCreated() {
                return dateCreated;
        }
        @Override
        public String toString() {
                return " [color : " + color + ", filled : " + filled + ",
dateCreated : " + dateCreated + "]";
        }

}
package Task1;

public class Triangle extends GeometricObject{
        private double side1 , side2 , side3 ;

        public Triangle() {
```

```
                super();
                side1 = side2 = side3 = 1 ;
        }
        public Triangle(double side1, double side2, double side3) {
                super();
                this.side1 = side1;
                this.side2 = side2;
                this.side3 = side3;
        }
        public double getSide1() {
                return side1;
        }
        public double getSide2() {
                return side2;
        }
        public double getSide3() {
                return side3;
        }
        public double getArea() {
                double S = (side1 + side2 + side3) / 2.0 ;
                return Math.sqrt(S * (S -side1) * (S -side2) * (S -side3)) ;
        }
        public double getPerimeter() {
                return side1 + side2 + side3 ;
        }
        @Override
        public String toString() {
                return "Triangle [side1 = " + side1 + ", side2 = " + side2 + ",
side3 = " + side3 + "]";
        }

}
package Task1;
import java.util.Scanner ;

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

                Scanner input = new Scanner(System.in);
                System.out.println("Enter side1 - side2 - side 3 - Color - isFilled
? \n");

                Triangle triangle1 = new
Triangle(input.nextDouble(),input.nextDouble(),input.nextDouble());
                input.nextLine();
                triangle1.setColor(input.nextLine());
                triangle1.setFilled(input.nextBoolean());

                input.close();
                System.out.println("Triangle   : " +triangle1.toString());
```

```
                System.out.println("Created on : " +triangle1.getDateCreated());
                System.out.println("Is Filled? : " +triangle1.isFilled());
                System.out.println("Color      : " +triangle1.getColor());
                System.out.println("Area       : " +triangle1.getArea());
                System.out.println("Preimeter  : " +triangle1.getPerimeter());
        }

}
```

```
+---------------------+
|    [2]   PERSON     |
+---------------------+
```

```
package Task2;
import java.util.GregorianCalendar;

public class MyDate {
        private int year , month , day;

        public MyDate() {
                super();
                GregorianCalendar cal = new GregorianCalendar();
                year = cal.get(GregorianCalendar.YEAR);
                month = cal.get(GregorianCalendar.MONTH);
                day = cal.get(GregorianCalendar.DAY_OF_MONTH);
        }
        public MyDate(int year, int month, int day) {
                super();
                this.year = year;
                this.month = month;
                this.day = day;
        }
        public MyDate(long elaspedTime) {
                super();
                setDate(elaspedTime);
        }
        public int getYear() {
                return year;
        }
        public int getMonth() {
                return month;
        }
        public int getDay() {
                return day;
        }
        public void setDate(long elaspedTime) {
                GregorianCalendar cal = new GregorianCalendar();
                cal.setTimeInMillis(elaspedTime);
                year = cal.get(GregorianCalendar.YEAR);
                month = cal.get(GregorianCalendar.MONTH);
```

```
                day = cal.get(GregorianCalendar.DAY_OF_MONTH);
        }

}
package Task2 ;

public class Person {
        private String name ;
        private String address ;
        private String phone ;
        private String email ;

        public Person() {
                super();
        }
        public Person(String name, String address, String phone, String email) {
                super();
                this.name = name;
                this.address = address;
                this.phone = phone;
                this.email = email;
        }
        public String getName() {
                return name;
        }
        public void setName(String name) {
                this.name = name;
        }
        public String getAddress() {
                return address;
        }
        public void setAddress(String address) {
                this.address = address;
        }
        public String getPhone() {
                return phone;
        }
        public void setPhone(String phone) {
                this.phone = phone;
        }
        public String getEmail() {
                return email;
        }
        public void setEmail(String email) {
                this.email = email;
        }
        @Override
        public String toString() {
                return " \nname : " + name + ", \naddress : " + address + ", \nphone
: " + phone + ", \nemail :" + email ;
```

```
	}

}
package Task2;

public class Student extends Person {
	private int status ;

	public Student(String name, String address, String phone, String email, int
status) {
		super(name, address, phone, email);
		this.status = status;
	}
	public String getStatus() {
		switch(status) {
		case 1 : return "FRESHMAN" ;
		case 2 : return "JUNIOR" ;
		case 3 : return "SENIOR" ;
		case 4 : return "SOMPHOMORE" ;
		default : return "NOT FOUND" ;
		}
	}
	public void setStatus(int status) {
		this.status = status;
	}
	@Override
	public String toString() {
		return "\n\nStudent : " +super.toString()+ " \nstatus : "
+getStatus();
	}

}
package Task2;

public class Employee extends Person {
	private String office ;
	private double salary ;
	private MyDate dateHired ;

	public Employee(String name, String address, String phone, String email,
String office, double salary) {
		super(name, address, phone, email);
		this.office = office;
		this.salary = salary;
		this.dateHired = new MyDate();
	}
	public String getOffice() {
		return office;
	}
	public void setOffice(String office) {
```

```
                this.office = office;
        }
        public double getSalary() {
                return salary;
        }
        public void setSalary(double salary) {
                this.salary = salary;
        }
        public String getDateHired() {
                return dateHired.getMonth() + "/" + dateHired.getDay()
                 + "/" + dateHired.getYear();
        }
        @Override
        public String toString() {
                return "\n\nEmployee : " +super.toString()+ "\noffice : " + office +
", \nsalary : " + salary + ", \ndateHired :" + getDateHired();
        }

}
package Task2;

public class Faculty extends Employee{

        private String OfficeHour ;
        private String rank ;

        public Faculty(String name, String address, String phone, String email,
String office, double salary, String officeHour, String rank) {
                super(name, address, phone, email, office, salary);
                OfficeHour = officeHour;
                this.rank = rank;
        }
        public String getOfficeHour() {
                return OfficeHour;
        }
        public void setOfficeHour(String officeHour) {
                OfficeHour = officeHour;
        }
        public String getRank() {
                return rank;
        }
        public void setRank(String rank) {
                this.rank = rank;
        }
        @Override
        public String toString() {
                return "\n\nFaculty : "+super.toString()+ "\nOfficeHour : " +
OfficeHour + ", \nrank : " + rank ;
        }
```

```
}
package Task2;

public class Staff extends Employee{
	private String title ;

	public Staff(String name, String address, String phone, String email, String
office, double salary, String title) {
		super(name, address, phone, email, office, salary);
		this.title = title;
	}
	public String getTitle() {
		return title;
	}
	public void setTitle(String title) {
		this.title = title;
	}
	@Override
	public String toString() {
		return "\n\nStaff " +super.toString()+ "\ntitle : " + title ;
	}

}
package Task2;

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

		Person person = new Person("Nazmul", "Uttara 1230 , Dhaka",
				"01724889172", "nazmul.hasan7@northsouth.edu");

			Student student = new Student("Bithi", "Uttara sector 7 ,
Dhaka", "01700000000",
				"bithi085@gnail.com", 3);

			Employee employee = new Employee("Mr ABC ", "34 West
street", "6189999999",
				"ABC@borthsouth.edu", "SAC 990", 60000);

				Faculty faculty = new Faculty("Dr. XYZ", "28 Well
street", "4133333333",
					"dr.xyz@gmaill.com", "NAC 1010", 110000, "4pm to
6pm", "Professor");

				Staff staff = new Staff("Tom", "90 Country road",
"2030000000",
					"tomcat@aol.com", "LIB 701", 65000, "Executive
Assistant");

			// Invoke toString of Person, Student, Employee, Faculty and
```

```
Staff
                        System.out.println(person.toString());
                        System.out.println(student.toString());
                        System.out.println(employee.toString());
                        System.out.println(faculty.toString());
                        System.out.println(staff.toString());
                }

}
```