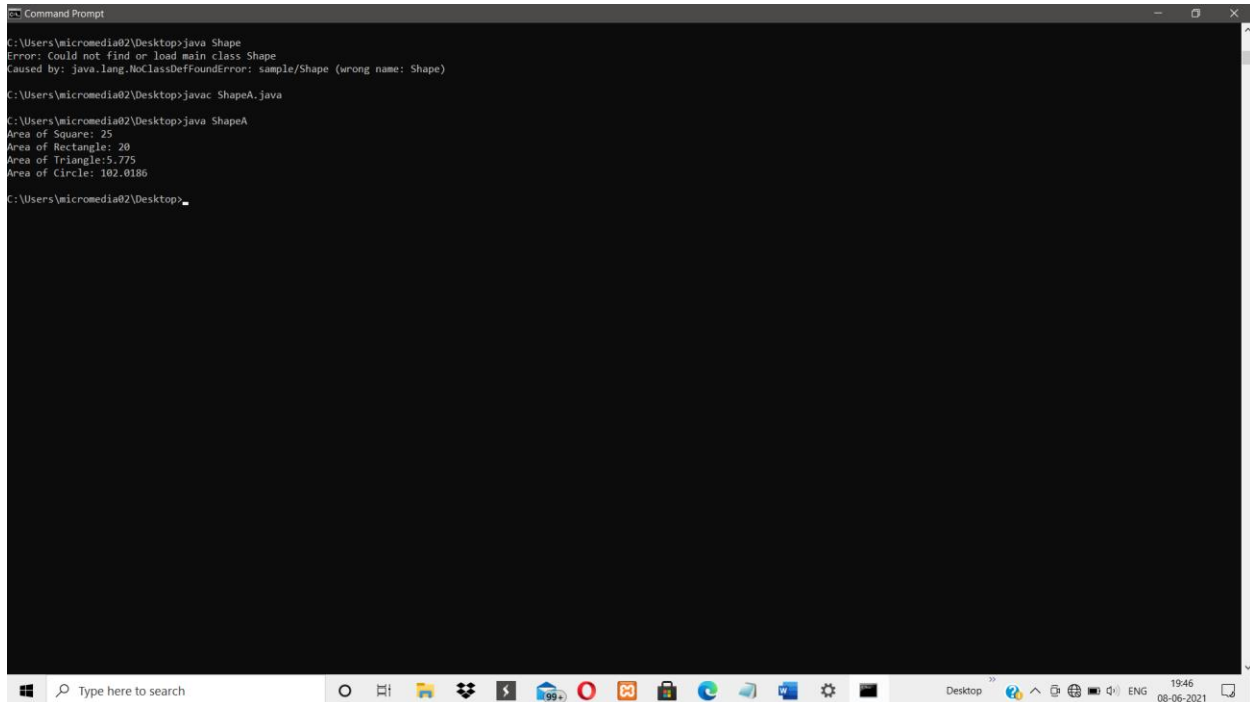


Q1: Area of different shapes using overloaded functions

```
public class ShapeA {  
    int area(int side)  
    {  
        return side*side;  
    }  
    int area(int l,int b)  
    {  
        return l*b;  
    }  
    double area(double b,double h)  
    {  
        return (0.5*(b*h));  
    }  
    double area(double r)  
    {  
        return (3.14*r*r);  
    }  
    public static void main(String[] args)  
    {  
        ShapeA obj=new ShapeA();  
        System.out.println("Area of Square: "+obj.area(5));  
        System.out.println("Area of Rectangle: "+obj.area(5,4));  
    }  
}
```

```
System.out.println("Area of Triangle:"+obj.area(5.5,2.1));  
System.out.println("Area of Circle: "+obj.area(5.7));  
}
```

}Output:



The screenshot shows a Windows Command Prompt window with the following text:

```
C:\Users\micromedia02\Desktop>java Shape  
Error: Could not find or load main class Shape  
Caused by: java.lang.NoClassDefFoundError: sample/Shape (wrong name: Shape)  
  
C:\Users\micromedia02\Desktop>javac ShapeA.java  
  
C:\Users\micromedia02\Desktop>java ShapeA  
Area of Square: 25  
Area of Rectangle: 20  
Area of Triangle:5.775  
Area of Circle: 102.0186  
  
C:\Users\micromedia02\Desktop>_
```

The taskbar at the bottom shows the search bar, task view button, and several application icons. The system tray on the right shows the date and time as 19:46 on 08-06-2021.

Q2: Create a class ‘Employee’ with data members Empid, Name, Salary, Address and constructors to initialize the data members. Create another class ‘Teacher’ that inherit the properties of class employee and contain its own data members department, Subjects taught and constructors to initialize these data members and also include display function to display all the data members. Use array of objects to display details of N teachers.

```
import java.util.*;  
  
class Employee {  
  
    int empid;  
  
    String name,address;  
  
    double salary;
```

```
public Employee(int empid, String name, String address, double salary) {  
    this.empid = empid;  
    this.name = name;  
    this.address = address;  
    this.salary = salary;  
}  
}
```

```
public class Teacher extends Employee  
{  
    String subject,department;
```

```
    public Teacher(int empid, String name, String address, double salary,String  
    department,String subject ) {  
        super(empid, name, address, salary);  
        this.subject = subject;  
        this.department = department;  
    }
```

```
    void display()  
    {  
        System.out.println("Employee id : "+this.empid+" Name : "+this.name+" Salary :  
        "+this.salary+" Address : "+this.address+" department : "+this.department+"  
        Subjects : "+this.subject);
```

```
}  
  
public static void main(String[] args) {  
  
    Scanner sc=new Scanner(System.in);  
  
    int n;  
  
    System.out.println("Enter number of Teachers : ");  
    n=sc.nextInt();  
  
    Teacher obj[]=new Teacher[n];  
    for(int i=0;i<n;i++) {  
        int j = i+1;  
        System.out.print("Enter Employee id of teacher "+j+" : ");  
        int Empid = sc.nextInt();  
        System.out.print("Enter Name of teacher "+j+" : ");  
        String Name = sc.next();  
        System.out.print("Enter Salary of teacher "+j+" : ");  
        double Salary = sc.nextDouble();  
        System.out.print("Enter Address of teacher "+j+" : ");  
        String Address = sc.next();  
        System.out.print("Enter department of teacher "+j+" : ");  
        String department =sc.next();  
        System.out.print("Enter Subjects of teacher "+j+" : ");  
        String Subjects =sc.next();
```

```
    obj[i] = new Teacher(Empid, Name, Address, Salary, department, Subjects);  
}
```

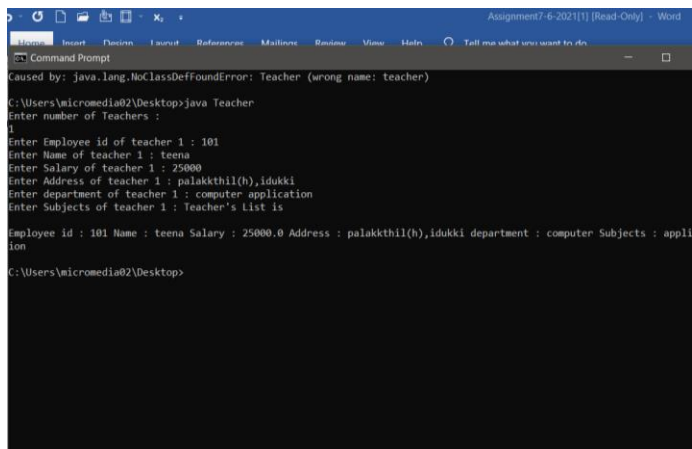
```
System.out.println("Teacher's List is \n");
```

```
for(int i=0;i<n;i++) {  
    obj[i].display();  
}
```

```
}
```

```
}
```

Output:



```
Assignment7-6-2021[1] [Read-Only] - Word  
C:\Users\micromedia02\Desktop>java Teacher  
Enter number of Teachers : 1  
Enter Employee id of teacher 1 : 101  
Enter Name of teacher 1 : teena  
Enter Salary of teacher 1 : 25000  
Enter Address of teacher 1 : palakkthil(h),idukki  
Enter department of teacher 1 : computer application  
Enter Subjects of teacher 1 : Teacher's list is  
Employee id : 101 Name : teena Salary : 25000.0 Address : palakkthil(h),idukki department : computer Subjects : appli ion  
C:\Users\micromedia02\Desktop>
```

Q 3: Create a class 'Person' with data members Name, Gender, Address, Age and a constructor to initialize the data members and another class 'Employee' that inherits the properties of class Person and also contains its own data members like Empid, Company_name, Qualification, Salary and its own constructor. Create another class 'Teacher' that inherits the properties of class Employee and contains its own data members like Subject, Department, Teacherid and also contain constructors and methods to display the data members. Use array of objects to display details of N teachers.

```
import java.util.Scanner;

class Person
{
    String name,gender,address;
    int age;
    public Person(String name, String gender, String address, int age) {
        super();
        this.name = name;
        this.gender = gender;
        this.address = address;
        this.age = age;
    }
}

class Employee extends Person {
    int empid;
    String company_name,qualification;
    double salary;
```

```
public Employee(String name, String gender, String address, int age, int empid,
String company_name,
    String qualification, double salary) {
    super(name, gender, address, age);
    this.empid = empid;
    this.company_name = company_name;
    this.qualification = qualification;
    this.salary = salary;
}

}
```

```
class Teacher extends Employee
{
    String subject,department;
    int teacherid;

    public Teacher(String name, String gender, String address, int age, int empid,
String company_name,
        String qualification, double salary, String subject, String department, int
teacherid) {
        super(name, gender, address, age, empid, company_name, qualification, salary);
        this.subject = subject;
        this.department = department;
        this.teacherid = teacherid;
    }
}
```

```
void display()
{
    System.out.println("Personal details are");
    System.out.println(" Name : "+this.name+" Gender : "+this.gender+" Age
:"+this.age);
    System.out.println("Employee details are");
    System.out.println("Empid : "+this.empid +" company_name :
"+this.company_name+" Salary : "+this.salary+" Address : "+this.address+"
qualification : "+this.qualification);
    System.out.println("Teacher's details are");
    System.out.println(" teacherid : "+this.teacherid+ " department :
"+this.department+" Subjects : "+this.subject);

}

}

public class Main {

    public static void main(String[] args) {
        Scanner s=new Scanner(System.in);
        int n;
        System.out.println("Enter number of Teachers : ");
```



```
n=s.nextInt();
Teacher obj[]=new Teacher[n];
for(int i=0;i<n;i++) {
    System.out.println("Enter the person name:");
    String nam1=s.next();
    System.out.println("Enter the Gender: ");
    String gen1=s.next();
    System.out.println("Enter the Address: ");
    String adr1=s.next();
    System.out.println("Enter the Age:");
    int age1=s.nextInt();
    System.out.println("Enter the Employee id: ");
    int id1=s.nextInt();
    System.out.println("Enter the Company name: ");
    String cname1=s.next();
    System.out.println("Enter the Salary:");
    double sal1=s.nextDouble();
    System.out.println("Enter the Qualification:");
    String qu1=s.next();

    System.out.println("Enter the Teacher id: ");
    int tid1=s.nextInt();
    System.out.println("Enter the Department:");
    String dept1=s.next();
```

```
System.out.println("Enter the Subject:");
```

```
String sub1=s.next();
```

```
obj[i]=new
```

```
Teacher(nam1,gen1,adr1,age1,id1,cname1,qu1,sal1,sub1,dept1,tid1);
```

```
}
```

```
for(int i=0;i<n;i++) {
```

```
    obj[i].display();
```

```
}
```

```
}
```

```
}
```

Output:

```
Command Prompt
1
Enter the person name:
thomas
Enter the Gender:
male
Enter the Address:
kkhouse
Enter the Age:
45
Enter the Employee id:
102
Enter the Company name:
wipro
Enter the Salary:
50000
Enter the Qualification:
mca
Enter the Teacher id:
104
Enter the Department:
mca
Enter the Subject:
cpp
Personal details are
Name : thomas Gender : male Age :45
Employee details are
Empid : 102 company_name : wipro Salary : 50000.0 Address : kkhouse qualification : mca
Teacher's details are
teacherid : 104 department : mca Subjects : cpp
C:\Users\micromedia02\Desktop>
```

Q 4: Write a program has class Publisher, Book, Literature and Fiction. Read the information and print the details of books from either the category, using inheritance.

```
import java.util.Scanner;
```

```
class Publisher {
```

```
String Pubname;
```

```
Publisher()
```

```
{
```

```
Scanner s=new Scanner(System.in);
```

```
System.out.println("Enter publisher name");
```

```
    Pubname=s.next();  
}  
}  
class Book extends Publisher  
{  
    String title, author;  
    int price;  
  
    Book()  
    {  
        Scanner s=new Scanner(System.in);  
        System.out.println("Enter Title of the book");  
        title=s.next();  
        System.out.println("Enter Author's name");  
        author=s.next();  
        System.out.println("Enter price");  
        price=s.nextInt();  
    }  
}  
class Literature extends Book  
{  
    Literature()  
    {  
        System.out.println("Literature Books");
```

```
}  
void display()  
{  
    System.out.println("Publisher name: "+Pubname);  
    System.out.println("Title of the book: "+title);  
    System.out.println("Author's name: "+author);  
    System.out.println("Price: "+price);  
}
```

```
}  
class Fiction extends Literature  
{  
    Fiction()  
    {  
        System.out.println("Friction Books");  
    }  
    void display()  
    {  
        super.display();  
    }  
}
```

```
public static void main(String args[])  
{  
    int n;
```

```
Scanner s=new Scanner(System.in);
```

```
System.out.println("Enter the No of literature book: ");
```

```
int a=s.nextInt();
```

```
Literature L[]=new Literature[a];
```

```
for(int i=0;i<a;i++)
```

```
{
```

```
    L[i]=new Literature();
```

```
}
```

```
System.out.println("Enter the No of Fiction book: ");
```

```
int b=s.nextInt();
```

```
Fiction F[]=new Fiction[b];
```

```
for(int i=0;i<b;i++)
```

```
{
```

```
    F[i]=new Fiction();
```

```
}
```

```
int no;
```

```
System.out.println("Enter your choice of book");
```

```
no=s.nextInt();
```

```
int type =no;
```

```
switch (no)
```

```
{
```

```
case 1:
```

```
System.out.println(".....Details of literature books");  
for(int i=0;i<a;i++)  
L[i].display();  
break;  
case 2:  
System.out.println(".....Details of fiction books");  
for(int i=0;i<b;i++)  
F[i].display();  
break;  
default:  
System.out.println("Wrong input");  
}  
}  
}
```

Output:

```
Command Prompt
C:\Users\micromedia02\Desktop>java Main
Enter number of Teachers :
1
Enter the person name:
1^C
C:\Users\micromedia02\Desktop>javac Fiction.java
C:\Users\micromedia02\Desktop>java Fiction
Enter the No of literature book:
1
Enter publisher name
abcd
Enter Title of the book
omega
Enter Author's name
albert
Enter price
1000
Literature Books
Enter the No of Fiction book:
1
Enter publisher name
joseph
Enter Title of the book
word3
Enter Author's name
pil
Enter price
200
Literature Books
Fiction Books
Enter your choice of book
1
....Details of literature books
Publisher name: abcd
Title of the book: omega
Author's name: albert
Price: 1000
C:\Users\micromedia02\Desktop>
```