JAVA PROGRAMMING

JOURNAL-2

21BCA81

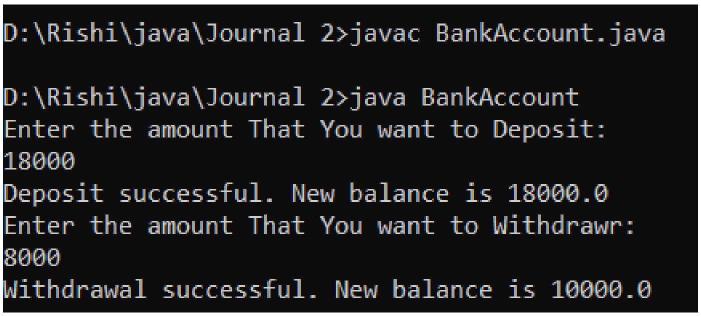
Journal – 2

1) Bank Account Details

```
import java.util.*;
public class BankAccount
{
   private String depositorName;
   private int accountNumber;
   private String accountType;
   private double balance;

   // Constructor with no arguments
   public BankAccount() {
      this("", 0, "Savings", 0.0);
   }

   // Constructor with name and account number arguments
   public BankAccount(String name, int accountNumber) {
      this(name, accountNumber, "Savings", 0.0);
   }

   // Constructor with all arguments
   public BankAccount(String name, int accountNumber, String accountType, double
balance) {
      this.depositorName = name;
      this.accountNumber = accountNumber;
      this.accountType = accountType;
      this.balance = balance;
   }
   // Method to assign initial values
   public void setInitialValues(String name, int accountNumber, String accountType, double
balance) {
      this.depositorName = name;
      this.accountNumber = accountNumber;
      this.accountType = accountType;
      this.balance = balance;
   }
   // Method to deposit an amount
   public void deposit(double amount) {
      if(amount > 0) {
         balance += amount;
         System.out.println("Deposit successful. New balance is " + balance);
      } else {
         System.out.println("Invalid amount. Please enter a positive amount to deposit.");
      }
   }
```

```
    // Method to withdraw an amount after checking balance
    public void withdraw(double amount) {
        if(amount <= 0) {
            System.out.println("Invalid amount. Please enter a positive amount to withdraw.");
        } else if(amount > balance) {
            System.out.println("Insufficient balance. You can withdraw up to " + balance);
        } else {
            balance -= amount;
            System.out.println("Withdrawal successful. New balance is " + balance);
        }
    }
    // Method to display name and balance
    public void display() {
        System.out.println("Depositor name: \n" + depositorName);
        System.out.println("Account number: \n" + accountNumber);
        System.out.println("Account type: \n" + accountType);
        System.out.println("Current balance: \n" + balance);
    }
    public static void main(String args[]){
        Scanner s=new Scanner(System.in);
     // Create an instance of BankAccount with no arguments
BankAccount account1 = new BankAccount();
// Set initial values using setInitialValues method
account1.setInitialValues("John Smith", 12345, "Savings",0.0);
// Deposit 500
System.out.println("Enter the amount That You want to Deposit:");
double depositAmount=s.nextDouble();
account1.deposit(depositAmount);
// Withdraw 200
System.out.println("Enter the amount That You want to Withdrawr:");
double withdrawAmount=s.nextDouble();
account1.withdraw(withdrawAmount);
// Display account information
    }
}
```

OUTPUT:

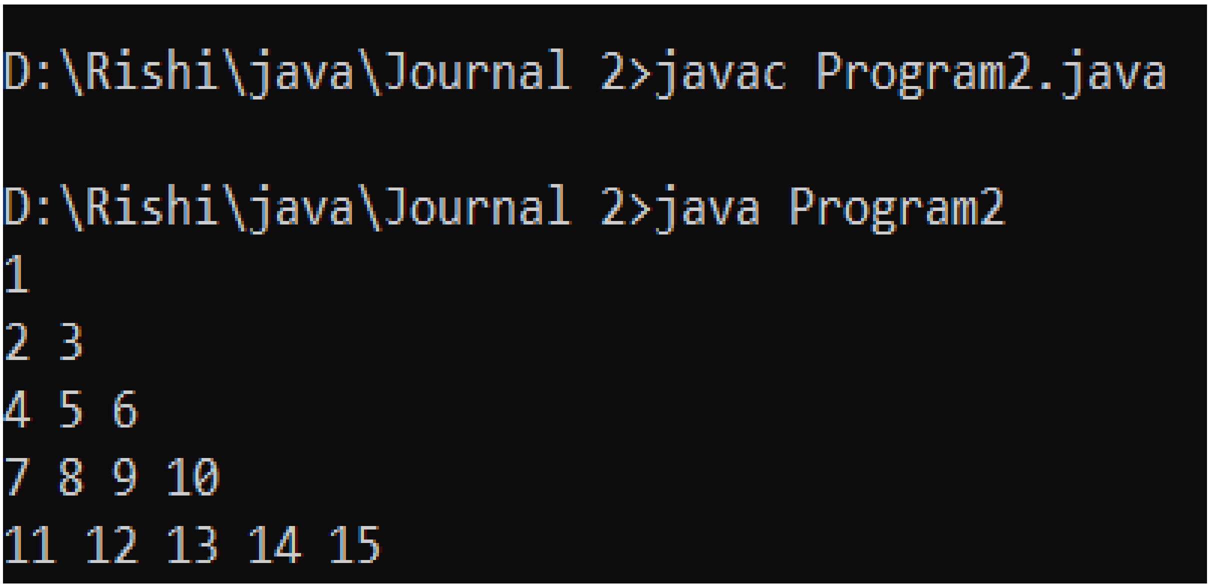


```
D:\Rishi\java\Journal 2>javac BankAccount.java

D:\Rishi\java\Journal 2>java BankAccount
Enter the amount That You want to Deposit:
18000
Deposit successful. New balance is 18000.0
Enter the amount That You want to Withdrawr:
8000
Withdrawal successful. New balance is 10000.0
```

2) Print Floyd's triangle

```
import java.util.*;
class Program2
{
    public static void main(String[] args)
    {
            int n = 5;
            int i, j, k = 1;
            for (i = 1; i <= n; i++)
            {
                    for (j = 1; j <= i; j++)
                    {
                            System.out.print(k + " ");
                            k++;
                    }
                    System.out.println();
            }
    }
}
```

OUTPUT:



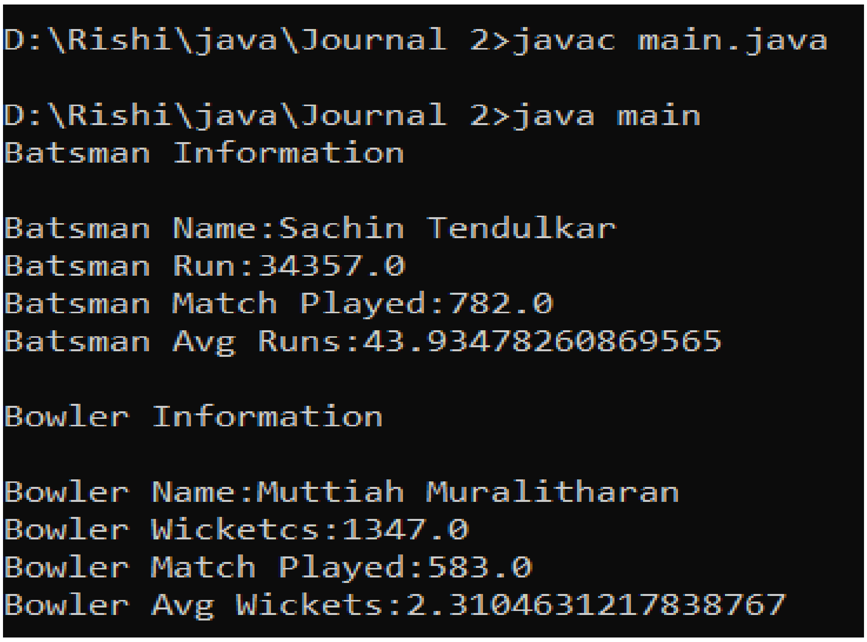
```
D:\Rishi\java\Journal 2>javac Program2.java

D:\Rishi\java\Journal 2>java Program2
1
2 3
4 5 6
7 8 9 10
11 12 13 14 15
```

3) Find Batsman’s and bowler’s Average

```
class Crickter
{
   public String name;
   public double matchPlayed;
   public void setValues(String name,double matchPlayed)
     {
      this.name=name;
      this.matchPlayed=matchPlayed;
   }
}
class Batsman extends Crickter
{
   public double totalruns;
   public double avarageRuns(double totalruns)
     {
      this.totalruns=totalruns;
      return this.totalruns/matchPlayed;
   }

}
class Bowler extends Crickter
{
   public double wickets;
   public double avarageWickets(double wickets)
     {
      this.wickets=wickets;
      return this.wickets/matchPlayed;
   }
}
class main
{
   public static void main(String args[])
     {
      Batsman bm=new Batsman();
      bm.setValues("Sachin Tendulkar",782);
      double avgRuns=bm.avarageRuns(34357);
      System.out.println("Batsman Information\n");
```

```
                System.out.println("Batsman Name:"+bm.name);
                System.out.println("Batsman Run:"+bm.totalruns);
                System.out.println("Batsman Match Played:"+bm.matchPlayed);
                System.out.println("Batsman Avg Runs:"+avgRuns);
                Bowler br=new Bowler();
                br.setValues("Muttiah Muralitharan",583);
                double avgWickets=br.avarageWickets(1347);
                System.out.println("\nBowler Information\n");
                System.out.println("Bpwler Name:"+br.name);
                System.out.println("Bpwler Wicketcs:"+br.wickets);
                System.out.println("Bpwler Match Played:"+br.matchPlayed);
                System.out.println("Bpwler Avg Wickets:"+avgWickets);
        }
    }
```

OUTPUT:

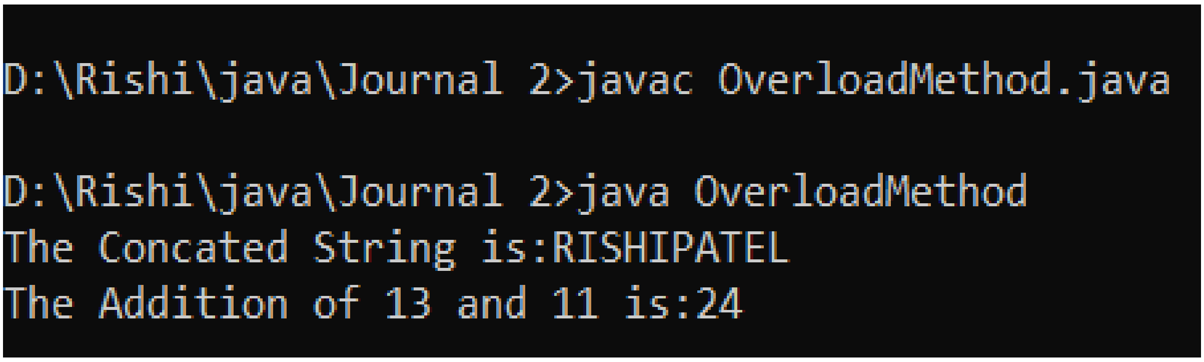


```
D:\Rishi\java\Journal 2>javac main.java

D:\Rishi\java\Journal 2>java main
Batsman Information

Batsman Name:Sachin Tendulkar
Batsman Run:34357.0
Batsman Match Played:782.0
Batsman Avg Runs:43.93478260869565

Bowler Information

Bowler Name:Muttiah Muralitharan
Bowler Wicketcs:1347.0
Bowler Match Played:583.0
Bowler Avg Wickets:2.3104631217838767
```

4) Method overloaded

```
class OverloadMethod
{
   public void display(String s1,String s2)
     {
      System.out.println("The Concated String is:"+(s1+s2));
   }
   public void display(int a,int b)
     {
      System.out.println("The Addition of "+a+" and "+b+" is:"+(a+b));
   }
   public static void main(String args[])
     {
      OverloadMethod o=new OverloadMethod();
      o.display("RISHI","PATEL");
      o.display(13,11);
   }
}
```

OUTPUT:

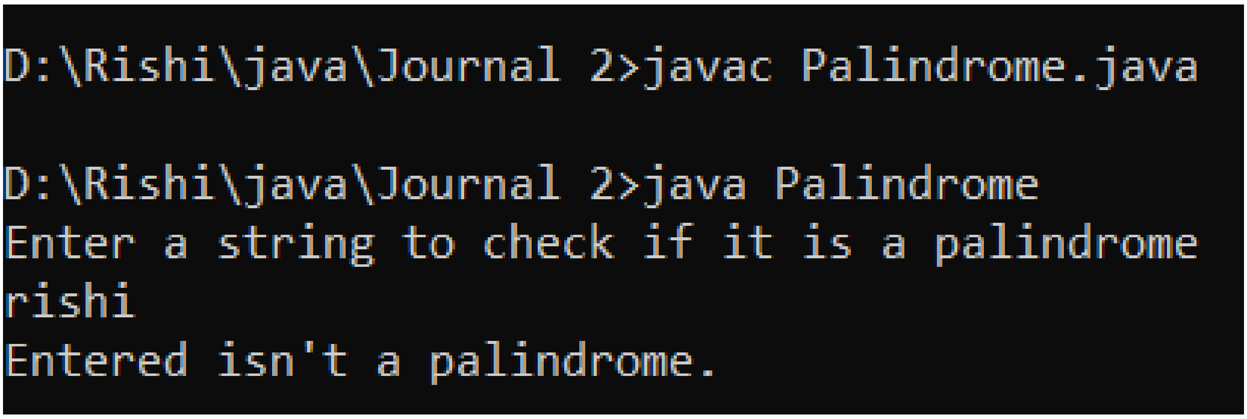


```
D:\Rishi\java\Journal 2>javac OverloadMethod.java

D:\Rishi\java\Journal 2>java OverloadMethod
The Concated String is:RISHIPATEL
The Addition of 13 and 11 is:24
```

5) Check string palindrome or not

```
 import java.util.*;
class Palindrome
{
  public static void main(String args[])
  {
    String original, reverse = "";
    Scanner in = new Scanner(System.in);
    System.out.println("Enter a string to check if it is a palindrome");
    original = in.nextLine();
    int length = original.length();
    for ( int i = length - 1; i >= 0; i-- )
      reverse = reverse + original.charAt(i);
    if (original.equals(reverse))
      System.out.println("Entered is a palindrome.");
    else
      System.out.println("Entered isn't a palindrome.");
  }
}
```

OUTPUT:

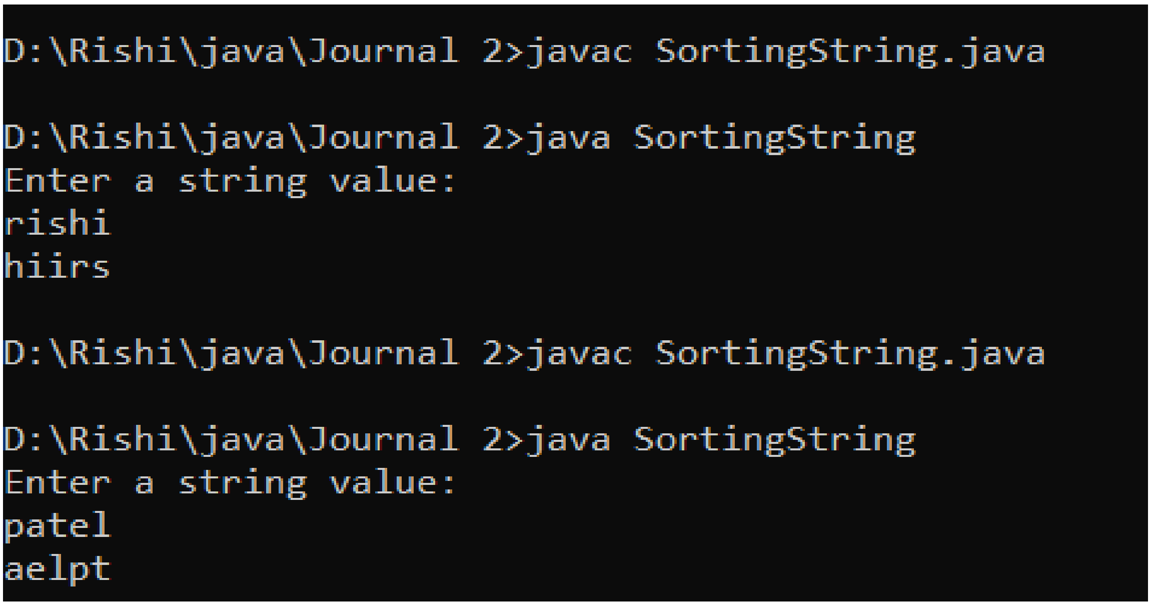


```
D:\Rishi\java\Journal 2>javac Palindrome.java

D:\Rishi\java\Journal 2>java Palindrome
Enter a string to check if it is a palindrome
rishi
Entered isn't a palindrome.
```

6) String Sorting in alphabetic format

```
import java.util.Arrays;
import java.util.Scanner;
public class SortingString
{
  public static void main(String args[])
  {
    Scanner sc = new Scanner(System.in);
    System.out.println("Enter a string value: ");
    String str = sc.nextLine();
    char charArray[] = str.toCharArray();
    Arrays.sort(charArray);
    System.out.println     (new String(charArray));
  }
}
```

OUTPUT:

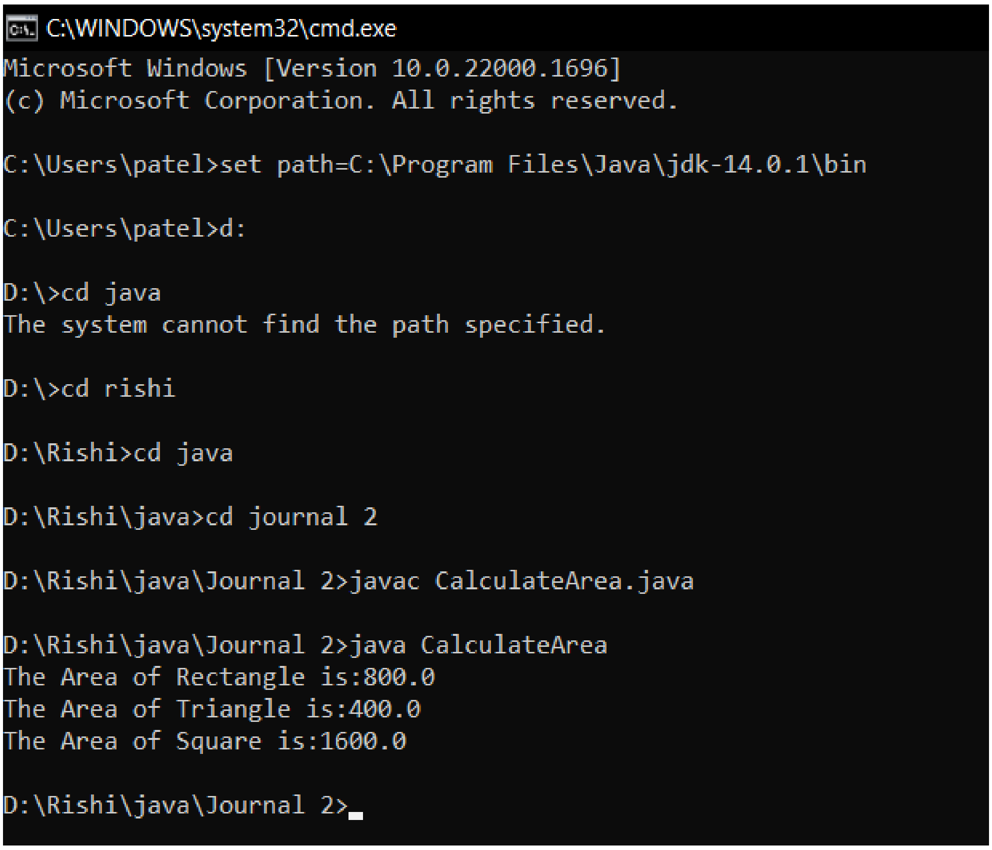


```
D:\Rishi\java\Journal 2>javac SortingString.java

D:\Rishi\java\Journal 2>java SortingString
Enter a string value:
rishi
hiirs

D:\Rishi\java\Journal 2>javac SortingString.java

D:\Rishi\java\Journal 2>java SortingString
Enter a string value:
patel
aelpt
```

7) Find Area

```
interface Area{
   public void Calculatearea();
}
class rectangle implements Area{
   float x,y;
   public rectangle(float x,float y){
      this.x=x;
      this.y=y;
   }
   public void Calculatearea(){
      System.out.println("The Area of Rectangle is:"+(this.x*this.y));
   }
}
class triangle implements Area{
   float x,y;
   public triangle(float x,float y){
      this.x=x;
      this.y=y;
   }
   public void Calculatearea(){
      System.out.println("The Area of Triangle is:"+((this.x*this.y)/2));

   }
}
class square implements Area{
   float x;
   public square(float x){
      this.x=x;
   }
   public void Calculatearea(){
      System.out.println("The Area of Square is:"+(this.x*this.x));
   }
}
class CalculateArea{
   public static void main(String args[]){
      //hare hight=20 and width=40
      rectangle re=new rectangle(20,40);
      re.Calculatearea();
      //hare base=20 and hight=40
      triangle tr=new triangle(20,40);
      tr.Calculatearea();
      //hare hight=40
      square sq=new square(40);
      sq.Calculatearea();
   }
}
```

OUTPUT:

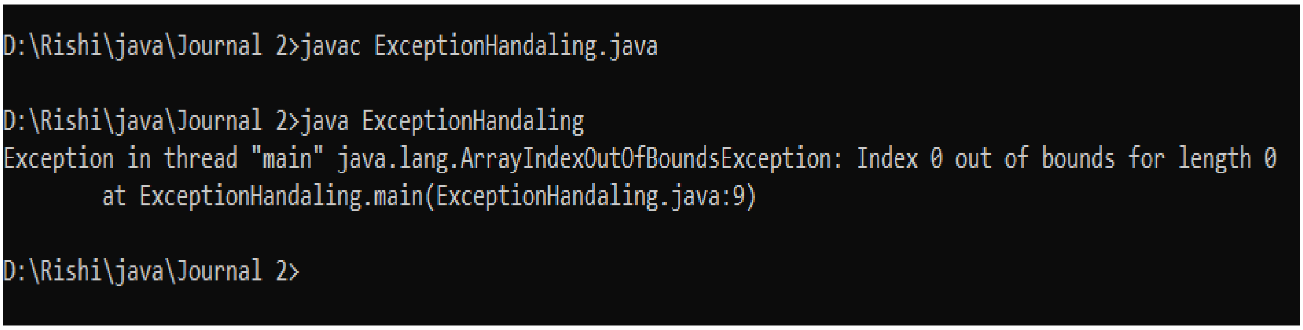


```
C:\WINDOWS\system32\cmd.exe
Microsoft Windows [Version 10.0.22000.1696]
(c) Microsoft Corporation. All rights reserved.

C:\Users\patel>set path=C:\Program Files\Java\jdk-14.0.1\bin

C:\Users\patel>d:

D:\>cd java
The system cannot find the path specified.

D:\>cd rishi

D:\Rishi>cd java

D:\Rishi\java>cd journal 2

D:\Rishi\java\Journal 2>javac CalculateArea.java

D:\Rishi\java\Journal 2>java CalculateArea
The Area of Rectangle is:800.0
The Area of Triangle is:400.0
The Area of Square is:1600.0

D:\Rishi\java\Journal 2>_
```

8) Exception Handling

```
class OddException extends Exception{
   OddException(String str){
      System.out.println(str);
   }
}
class ExceptionHandaling{
   public static void main(String args[]){
      int a=Integer.parseInt(args[0]);
      try{
         if(a%2==0){
            System.out.println("The "+a+" is Even.");
         }
         else{
            throw new OddException("Number Consist Odd Value.");
         }

      }
      catch(OddException e){
         System.out.println(e);;
      }

   }
}
```

OUTPUT:

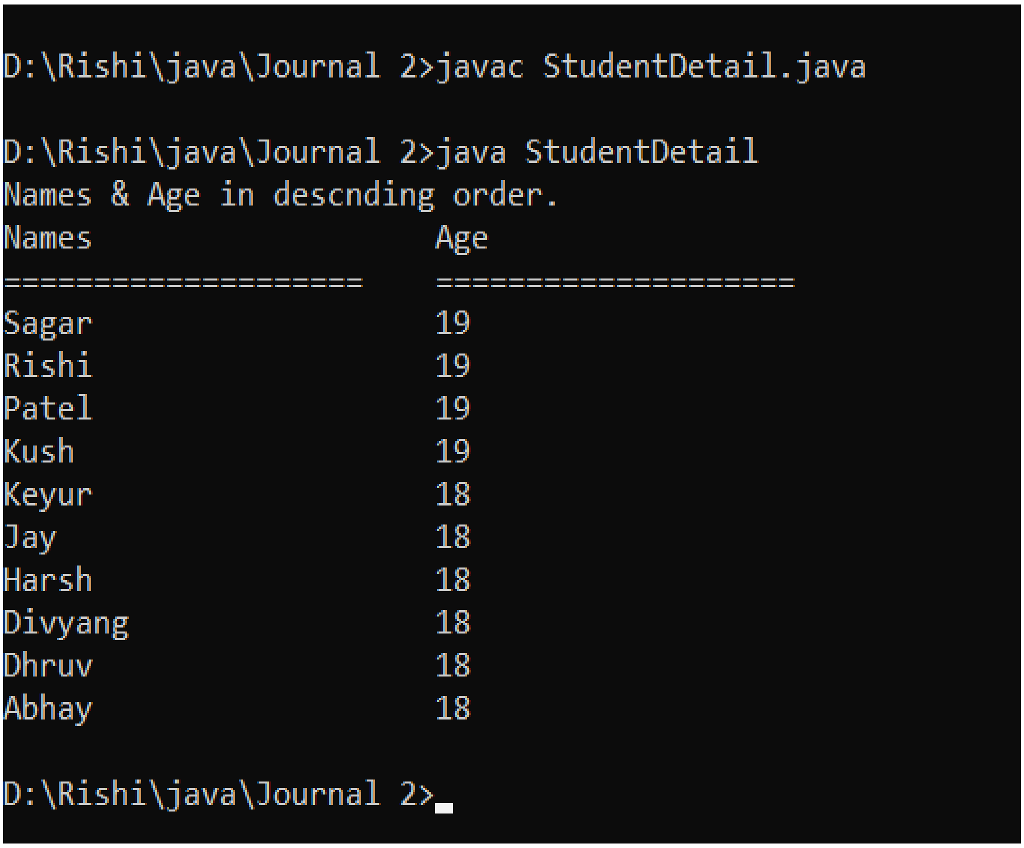


```
D:\Rishi\java\Journal 2>javac ExceptionHandaling.java

D:\Rishi\java\Journal 2>java ExceptionHandaling
Exception in thread "main" java.lang.ArrayIndexOutOfBoundsException: Index 0 out of bounds for length 0
        at ExceptionHandaling.main(ExceptionHandaling.java:9)

D:\Rishi\java\Journal 2>
```

9)Student Name and age in descending order.

```
import java.util.*;
class StudentDetail{
  public static void main(String args[])
       {
    String
StdName[]={"Kush","Divyang","Jay","Harsh","Rishi","Keyur","Abhay","Sagar",
"Dhruv","Patel"};
    int age[]={18,18,18,18,19,19,19,19,18,18};
    int n=9;
    String temp;
    for (int i=0; i<=n;i++)
              {
      for (int j=i+1;j<=n;j++)
                            {
        // to compare one string with other strings
        if (StdName[i].compareTo(StdName[j]) > 0)

                            {
          // swapping
          temp = StdName[i];
          StdName[i] = StdName[j];
          StdName[j] = temp;
        }
      }
    }
    for(int i=0;i<=n;i++)
             {
      for(int j=i+1;j<=n;j++)
                    {
        //to set the age in descnding order
        int temp1;
        if(age[i]>age[j])
                          {
          temp1=age[i];
          age[i]=age[j];
          age[j]=temp1;
        }
      }
    }
    System.out.println("Names & Age in descnding order.");
    System.out.println("Names\t\t\tAge");
    System.out.println("====================
\t====================");
    for (int i = n; i >=0; i--)
             {
      System.out.println(StdName[i]+"\t\t\t"+age[i]);
    }

  }
}
```

OUTPUT:

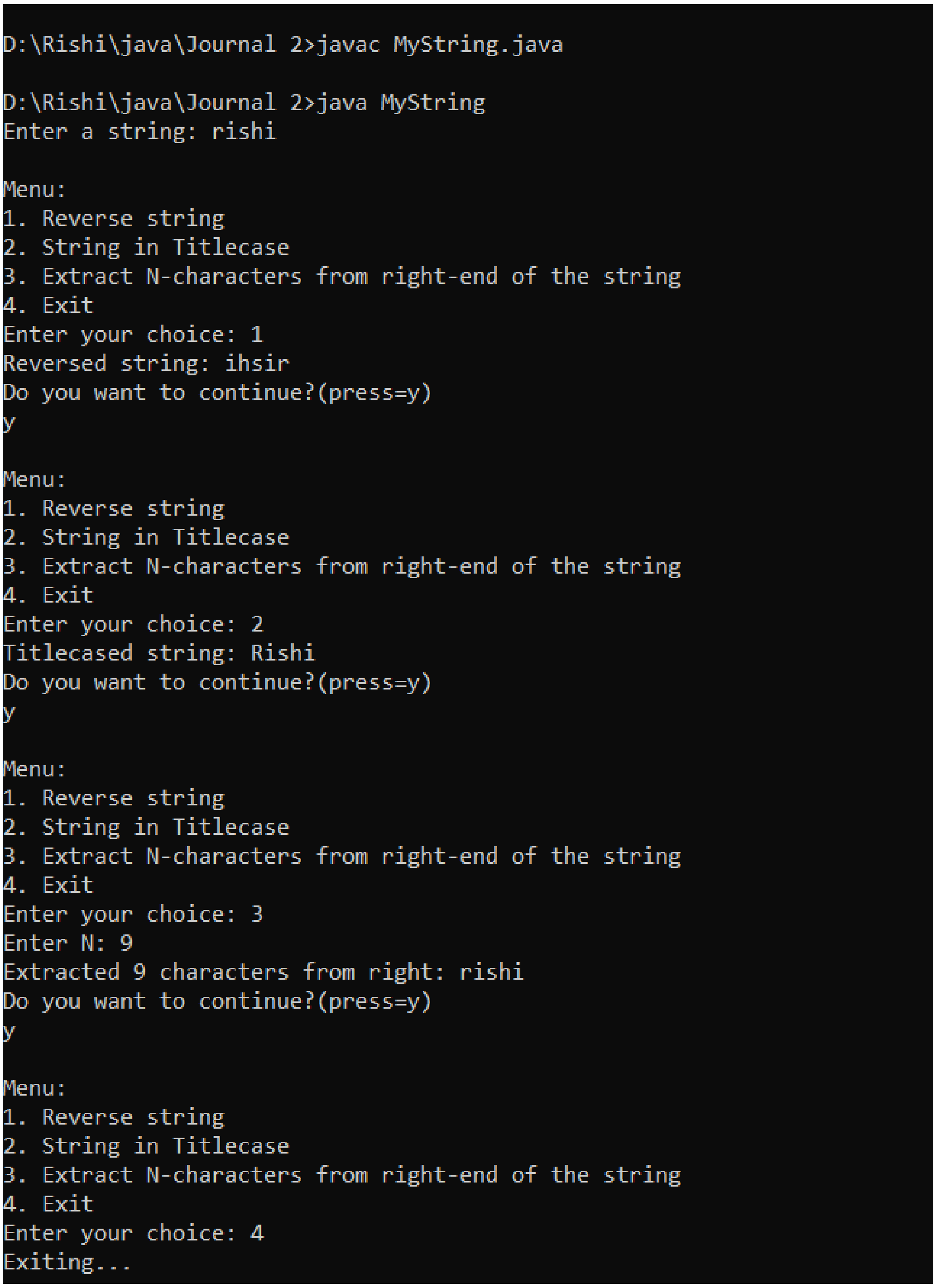


```
D:\Rishi\java\Journal 2>javac StudentDetail.java

D:\Rishi\java\Journal 2>java StudentDetail
Names & Age in descnding order.
Names                   Age
====================    ====================
Sagar                   19
Rishi                   19
Patel                   19
Kush                    19
Keyur                   18
Jay                     18
Harsh                   18
Divyang                 18
Dhruv                   18
Abhay                   18

D:\Rishi\java\Journal 2>
```

10)All String function

```
import java.util.*;
public class MyString {
  private String str;

  public MyString(String str) {
    this.str = str;
    }

    public String reverse() {
        return new StringBuilder(str).reverse().toString();
    }

    public String toTitleCase() {
        StringBuilder result = new StringBuilder(str.length());
        String[] words = str.split("\\s");

        for (String word : words) {
            if (!word.isEmpty()) {
                result.append(Character.toUpperCase(word.charAt(0)));
                result.append(word.substring(1).toLowerCase());
            }

            result.append(" ");
        }

        return result.toString().trim();
    }

    public String extractNFromRight(int n) {
        if (n >= str.length()) {
            return str;
        }

        return str.substring(str.length() - n);
    }

    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);

        System.out.print("Enter a string: ");
        String str = scanner.nextLine();
        MyString myString = new MyString(str);
        char ch;
        do {
            System.out.println();
            System.out.println("Menu:");
            System.out.println("1. Reverse string");
            System.out.println("2. String in Titlecase");
            System.out.println("3. Extract N-characters from right-end of the string");
            System.out.println("4. Exit");
            System.out.print("Enter your choice: ");

            int choice = scanner.nextInt();
            scanner.nextLine();

            switch (choice) {
                case 1:
                    System.out.println("Reversed string: " + myString.reverse());
                    break;
                case 2:
                    System.out.println("Titlecased string: " + myString.toTitleCase());
                    break;
                case 3:
                    System.out.print("Enter N: ");
                    int n = scanner.nextInt();
                    scanner.nextLine();
                    System.out.println("Extracted " + n + " characters from right: " +
myString.extractNFromRight(n));
                    break;
                case 4:
                    System.out.println("Exiting...");
                    System.exit(0);
                    break;
                default:
                    System.out.println("Invalid choice. Try again.");
            }
            System.out.println("Do you want to continue?(press=y)");
            ch=scanner.next().charAt(0);
        }while(ch=='y');
    }
}
```

OUTPUT:



```
D:\Rishi\java\Journal 2>javac MyString.java

D:\Rishi\java\Journal 2>java MyString
Enter a string: rishi

Menu:
1. Reverse string
2. String in Titlecase
3. Extract N-characters from right-end of the string
4. Exit
Enter your choice: 1
Reversed string: ihsir
Do you want to continue?(press=y)
y

Menu:
1. Reverse string
2. String in Titlecase
3. Extract N-characters from right-end of the string
4. Exit
Enter your choice: 2
Titlecased string: Rishi
Do you want to continue?(press=y)
y

Menu:
1. Reverse string
2. String in Titlecase
3. Extract N-characters from right-end of the string
4. Exit
Enter your choice: 3
Enter N: 9
Extracted 9 characters from right: rishi
Do you want to continue?(press=y)
y

Menu:
1. Reverse string
2. String in Titlecase
3. Extract N-characters from right-end of the string
4. Exit
Enter your choice: 4
Exiting...
```