**Department of Computer Science & Engineering, SDMCET, Dharwad-2**

# AOOP Assignment Submission Report

**[Submitted as part of CTA Assignment No-1]**

| | | | |
|---|---|---|---|
| Course: | Advanced Object-Oriented Programming | Course Code: | 18UCSE508 |
| Semester: | V | Division: | A |

Submitted by:

| | | | |
|---|---|---|---|
| USN: | 2SD20CS007 | Name: | AISHWARYA ITAGI |

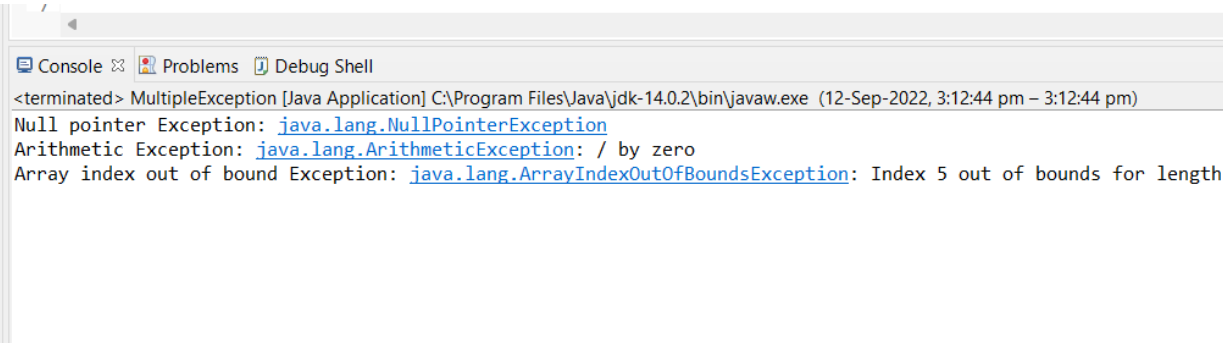
# 1. Problem Definition:

1.Write a Java program to generate and handle any three built-in exceptions and display appropriate error messages.

# 2. Java Program:

```
/* Author: Aishwarya Itagi
 * Date:10/10/22
 */
public class MultipleException {
    public static void main(String args[]) {

                int a=0;
                int x[]= {2,3,4};

try {
                String s[]=null;
                if(s.equals("Java oops")) {
                            System.out.println("equal");

                }
}   catch(NullPointerException e1) {
                System.out.println("Null pointer Exception: " +e1); }
                        try{
                                    int u=x[2]/a;
                                    }
                          catch(ArithmeticException e2) {
                                       System.out.println("Arithmetic Exception: " +e2); }

  try {
                  x[5] =7;
   }  catch(ArrayIndexOutOfBoundsException e3) {
                                     System.out.println("Array index out of bound Exception: " +e3);  }
   }
    }
```

# 3. Screen Shots of Execution:



```
<terminated> MultipleException [Java Application] C:\Program Files\Java\jdk-14.0.2\bin\javaw.exe (12-Sep-2022, 3:12:44 pm – 3:12:44 pm)
Null pointer Exception: java.lang.NullPointerException
Arithmetic Exception: java.lang.ArithmeticException: / by zero
Array index out of bound Exception: java.lang.ArrayIndexOutOfBoundsException: Index 5 out of bounds for length
```

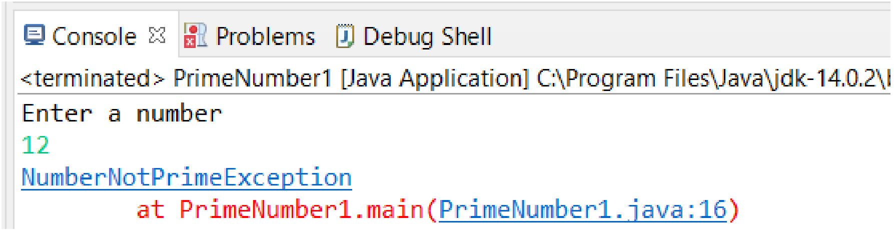
# 1. Problem Definition:

2.Write a Java program to read an integer and check whether the number is prime or not. If negative number is entered, throw an exception NegativeNumberNotAllowedException and if entered number is not prime, then throw NumberNotPrimeException.

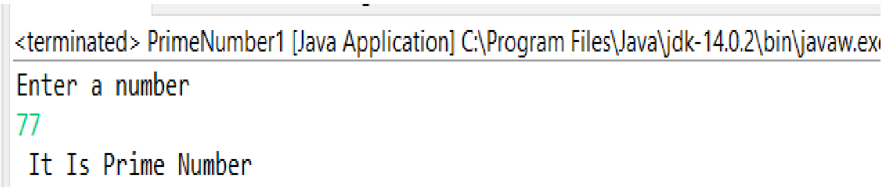
# 2. Java Program:

```
/* Author: Aishwarya Itagi
 * Date:10/10/22
 */
import java.util.*;
import java.math.*;
public class PrimeNumber1 {
    public static void main(String[] args) {
    Scanner s1=new Scanner(System.in);

  System.out.println("Enter a number");
    int p=s1.nextInt(); //integer input
        try{

            for(int i=2;i<=Math.sqrt(p);i++) {
            if((p%i)!=0) {
                System.out.println(" It Is Prime Number ");
                }
            else
                throw new NumberNotPrimeException(p+"Entered Number Is
Not Prime");
            }
            }catch(NumberNotPrimeException e2) {
                e2.printStackTrace();
            }
                try {
                    if(p<0)
                        throw new NegativeNumberException("Enter
positive number\n");
                }catch(NegativeNumberException e1) {
                    e1.printStackTrace();
                }
}
}
class NumberNotPrimeException extends Exception{
    private String e;
    NumberNotPrimeException(String ne){
        this.e=ne;
    }
}
class NegativeNumberException extends Exception{
        private String e;
        NegativeNumberException(String ne){
                this.e=ne;
        }
}
```

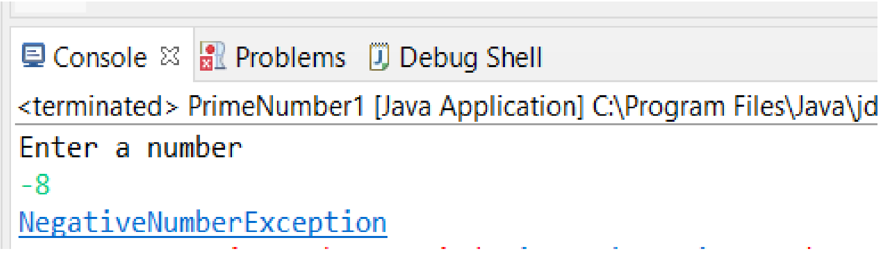
## 3. Screen Shots of Execution:



```
<terminated> PrimeNumber1 [Java Application] C:\Program Files\Java\jdk-14.0.2\
Enter a number
12
NumberNotPrimeException
        at PrimeNumber1.main(PrimeNumber1.java:16)
```



```
<terminated> PrimeNumber1 [Java Application] C:\Program Files\Java\jdk-14.0.2\bin\javaw.ex
Enter a number
77
 It Is Prime Number
```



```
<terminated> PrimeNumber1 [Java Application] C:\Program Files\Java\jd
Enter a number
-8
NegativeNumberException
```

# 1. Problem Definition:

3.Write a Java program to perform the following operations:

a) Read a line of text

b) Search for a sub-string SDMCET (case insensitive search)

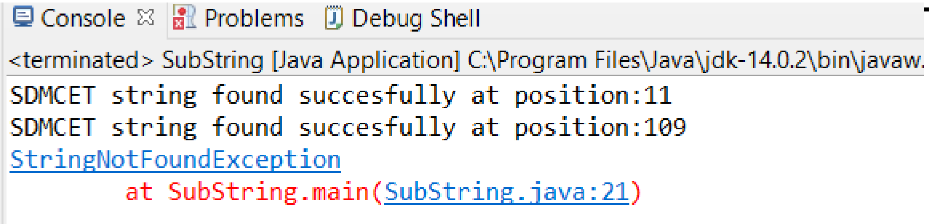
c) If found, then print success message

d) Otherwise throw an exception SubStringNotFoundException with appropriate message.

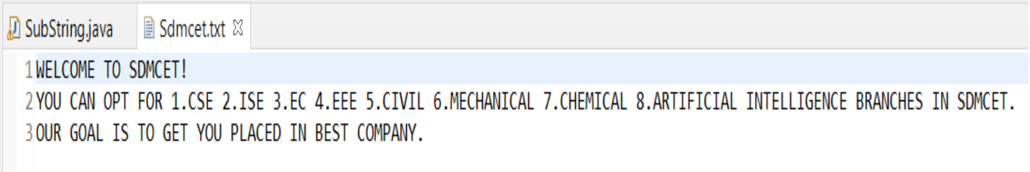
# 2. Java Program:

```
/* Author: Aishwarya Itagi
 * Date:10/10/22
 */

import java.io.BufferedReader;
import java.io.FileReader;
import java.io.IOException;
public class SubString {

    public static void main(String args[]) throws IOException {
    FileReader f=new FileReader("Sdmcet.txt");    //creates a reader using FileReader
    BufferedReader br= new BufferedReader(f); //read text from character input stream
    String s1="SDMCET";
    String s2="";

try {
    while((s2=br.readLine())!=null)
        if(s2.contains(s1))
      System.out.println("SDMCET string found succesfully at position:"+s2.indexOf(s1)
);

         else
            throw new StringNotFoundException("Stringnot found");
            } catch(StringNotFoundException se) {
                se.printStackTrace();   }
}
}
class StringNotFoundException extends Exception{
    private String se;
    StringNotFoundException(String s){
        this.se=s;
    }
}
```

# 3. Screen Shots of Execution:



```
<terminated> SubString [Java Application] C:\Program Files\Java\jdk-14.0.2\bin\javaw.
SDMCET string found succesfully at position:11
SDMCET string found succesfully at position:109
StringNotFoundException
        at SubString.main(SubString.java:21)
```



```
WELCOME TO SDMCET!
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OUR GOAL IS TO GET YOU PLACED IN BEST COMPANY.
```

# 1. Problem Definition:

4.Write a Java program to perform the following operations:

a) Create a file named Alphabets.txt and insert appropriate data into it

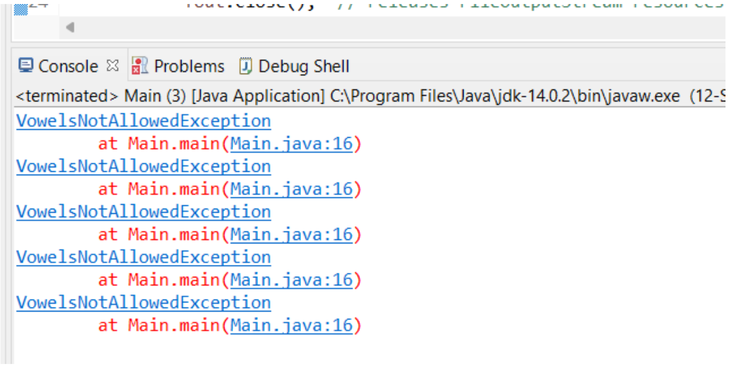
b) Read the file and copy all the consonants into another file named Consonants.txt

c) If vowel is encountered, throw

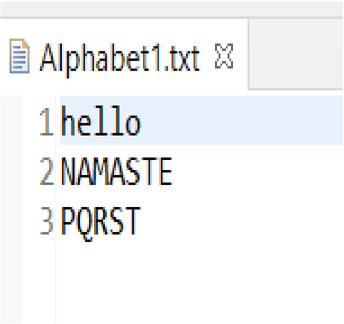
# 2. Java Program:

```
/* Author: Aishwarya Itagi
 * Date:10/10/22
 */
import java.io.*;

public class Main {
        public static void main(String[] args)throws IOException{
FileInputStream fin=new
FileInputStream("C:\\Users\\Lakshmi\\eclipseworkspace\\Aish\\VowelOrNot\\src\\Alphabet1.tx);
//reading text from alphabet.txt file
FileOutputStream fout=new
FileOutputStream("C:\\Users\\Lakshmi\\eclipseworkspace\\Aish\\VowelOrNot\\src\\Consonent.);
//writing bytes to consonent.txt file
   int s;
   while((s=fin.read())!=-1) {
           try {
        if(s=='a'||s=='A'||s=='e'||s=='E'||s=='i'||s=='I'||s=='o'||s=='O'||s=='u'||s=='U')
        throw new VowelsNotAllowedException("Vowels Not Allowed"); //if vowels found
throw exception
        else
        fout.write(s);
        }
    catch(VowelsNotAllowedException e) {
                                e.printStackTrace();
                        }
          }
                        fin.close();    // releases FileInputStream resources from the streams
                        fout.close();  // releases FileOutputStream resources from the streams
 }
}


class VowelsNotAllowedException extends Exception{
        private String se;
         VowelsNotAllowedException(String s){
                this.se=s;
    }
}
```

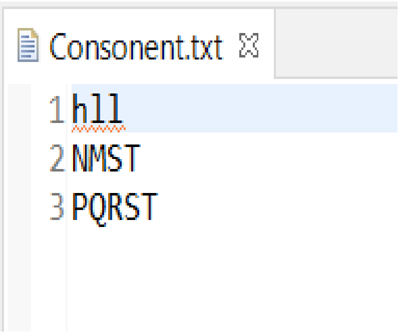
## 3. Screen Shots of Execution:



```
<terminated> Main (3) [Java Application] C:\Program Files\Java\jdk-14.0.2\bin\javaw.exe  (12-S
VowelsNotAllowedException
	at Main.main(Main.java:16)
VowelsNotAllowedException
	at Main.main(Main.java:16)
VowelsNotAllowedException
	at Main.main(Main.java:16)
VowelsNotAllowedException
	at Main.main(Main.java:16)
VowelsNotAllowedException
	at Main.main(Main.java:16)
```



```
hello
NAMASTE
PQRST
```



```
hll
NMST
PQRST
```