Program 1.
Program to implement Arithmetic Exception.

Code:

```java
package practice;

public class Arthexep {

    public static void main(String[] args)
    {
    try {
       int data =100/0;
    }
    catch(ArithmeticException e)
    {
     System.out.println(e);
    }
    System.out.println("rest of the code....");
     }

}
```

Output:

```
java.lang.ArithmeticException: / by zero
rest of the code....
```

Program 2.
**Write a program in Java to initialize an array of 10 integers. Handle
ArrayIndexOutOfBounds Exception, so that any such problem doesn't
cause abnormal termination of program.**
Code:

```java
package practice;


public class Arrayexcep {

    public static void main(String[] args)
    {
      try {
          String[] subjects=
{"aa","bb","cc","dd","ee","ff","gg","hh","ii","jj"};
          for(int i=0;i<=subjects.length;i++)
```

```
        {
                System.out.print(subjects[i] + " ");
        }
    }catch(ArrayIndexOutOfBoundsException e) {
        System.out.println(e);
    }
    System.out.println("rest of the code....");

    }

}
```

Output:

```
aa bb cc dd ee ff gg hh ii jj
java.lang.ArrayIndexOutOfBoundsException: Index 10 out of bounds for
length 10
rest of the code....
```

Program 3.
Write a java program with a method that throws an exception but not handled inside. Call the method from main. Let the main method handle the exception appropriately.
Code:

```
package practice;

class Grade{
    int marks;
    void division(int a) throws Exception{
        int z=500/a;
    }
}
public class Methodexcept {

    public static void main(String[] args) {
        Grade x = new Grade();
        try {
            x.division(0);
        }
        catch(Exception e) {
            System.out.println("invalid marks");
        }

    }
```

```
}
```

Output:


```
invalid marks
```

Program 4.
Create a class Customer having following members:
- **private String custNo**
- **private String custName**
- **private String category**

Parameterized constructor to initialize all instance variables Getter methods for all instance variables.
Perform following validations in the constructor
● **custNo must start with 'C' or 'c'**
● **custName must be atleast of 4 characters**
● **category must be either 'Platinum', 'Gold' or 'Silver '**
 When any of these validations fail, then raise a user defined exception InvalidInputException Create a class TestCustomer having main method. Ask user to enter customer details. Create an object of Customer and perform validations. Print details of customer.

Code:
```java
package practice;

import java.util.Scanner;
class InvalidInput extends Exception{
        String msg;
        InvalidInput(String msg) {
                this.msg=msg;
        }
        public String toString() {
                return("you have entered wrong choice"+msg);
        }
}
class Customer{
        private String custNo;
        private String custName;
        private String Category;
        Customer(String custNo,String custName,String Category) throws InvalidInput
{
                if(custNo.charAt(0)=='c' || custNo.charAt(0)=='C'){
                        this.custNo=custNo;
```

```java
                } else {
                        throw new InvalidInput("Invalid Customer Number:");
                }
                if(custName.length()>=4){
                        this.custName=custName;
                } else {
                        throw new InvalidInput("Invalid Customer Name:");
                }
                if((Category.equalsIgnoreCase("platinum"))||
(Category.equalsIgnoreCase("gold")) || (Category.equalsIgnoreCase("silver"))){
                        this.Category=Category;
                } else {
                        throw new InvalidInput("Invalid Customer Category:");
                }
        }
        public String getCustNo() {
                return custNo;
        }
        public String getCustName() {
                return custName;
        }
        public String getCategory() {
                return Category;
        }
}
public class TestCustomer {
        public static void main(String args[]) throws InvalidInput {
                String number,name,category;
                Customer c;
                System.out.print("Enter Customer details\n");
                Scanner sc=new Scanner(System.in);
                number =sc.nextLine();
                name =sc.nextLine();
                category =sc.nextLine();
                sc.close();
                c = new Customer(number,name,category);
                System.out.println(c);
                System.out.println(c.getCustNo());
                System.out.println(c.getCustName());
                System.out.println(c.getCategory());


        }
}
```

Output:

```
Enter Customer details
c101
amit
gold
practice.Customer@26ba2a48
c101
amit
gold
```

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