Practical No. 16: Write a java program to accept and print the employee details during runtime. The details will include employee id, name, dept_ Id. The program should raise an exception if user inputs incomplete or incorrect data. The entered value should meet the following conditions:
(i) First Letter of employee name should be in capital letter.
(ii) Employee id should be between 2001 and 5001.
(iii) Department id should be an integer between 1 and 5.
If the above conditions are not met then the application should raise specific exception else should complete normal execution.

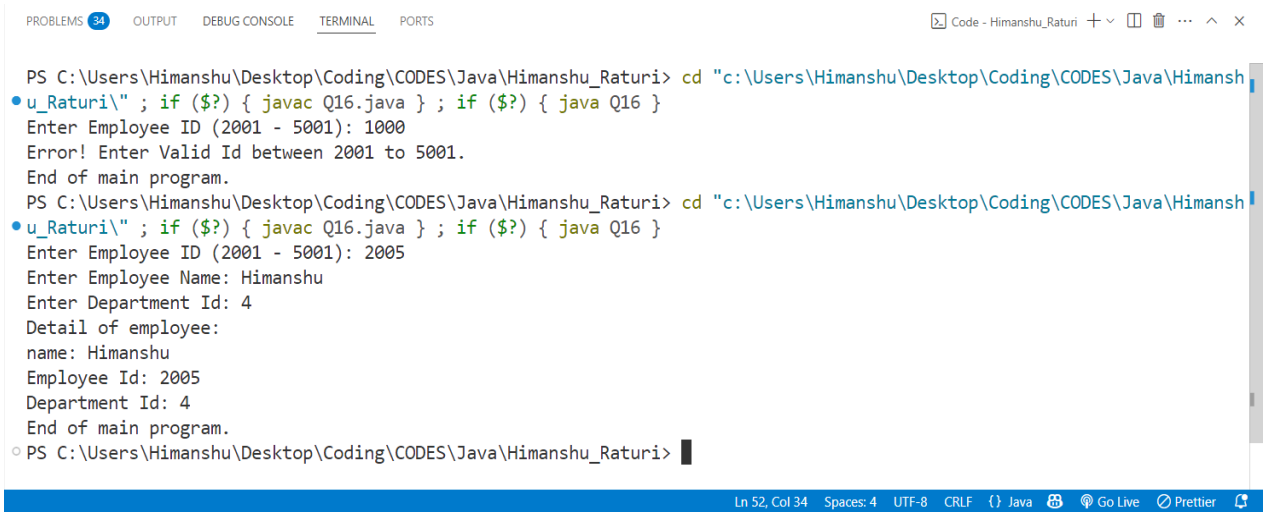
Source Code:

```
import java.util.Scanner;

class myNameException extends Exception

{

   public myNameException(String s)

   {

      super(s);

   }

}

class myIdException extends Exception

{

   public myIdException(String s)

   {

      super(s);

   }

}

class myDeptIdException extends Exception

{

   public myDeptIdException(String s)

   {

      super(s);

   }

}
```

```
public class Q16 {
    public static void main(String args[])
    {

        Scanner sc = new Scanner(System.in);
        try
        {
            int id , dept_Id;
            String name;
            System.out.print("Enter Employee ID (2001 - 5001): ");
            id = sc.nextInt();
            if(id < 2001 || id > 5001)
            {
                throw new myIdException("Error! Enter Valid Id between 2001 to 5001.");
            }
            System.out.print("Enter Employee Name: ");
            name = sc.next();
            if(!Character.isUpperCase(name.charAt(0)))
            {
                throw new myNameException("Error! Enter Valid name.");
            }
            System.out.print("Enter Department Id: ");
            dept_Id = sc.nextInt();
            if(dept_Id < 1 || dept_Id > 5)
            {
                throw new myDeptIdException("Error! Enter valid Department Id (1 - 5).");
            }
            System.out.println("Detail of employee: ");
            System.out.println("name: " + name);
```

```
            System.out.println("Employee Id: " + id);
            System.out.println("Department Id: " + dept_Id);
        }catch(Exception e)
        {
            System.out.println(e.getMessage());
        }
        System.out.println("End of main program.");
        sc.close();
    }
}
```

OUTPUT:


PROBLEMS 34
OUTPUT
DEBUG CONSOLE
TERMINAL
PORTS
Code - Himanshu_Raturi
PS C:\Users\Himanshu\Desktop\Coding\CODES\Java\Himanshu_Raturi> cd "c:\Users\Himanshu\Desktop\Coding\CODES\Java\Himanshu_Raturi\" ; if ($?) { javac Q16.java } ; if ($?) { java Q16 }
Enter Employee ID (2001 - 5001): 1000
Error! Enter Valid Id between 2001 to 5001.
End of main program.
PS C:\Users\Himanshu\Desktop\Coding\CODES\Java\Himanshu_Raturi> cd "c:\Users\Himanshu\Desktop\Coding\CODES\Java\Himanshu_Raturi\" ; if ($?) { javac Q16.java } ; if ($?) { java Q16 }
Enter Employee ID (2001 - 5001): 2005
Enter Employee Name: Himanshu
Enter Department Id: 4
Detail of employee:
name: Himanshu
Employee Id: 2005
Department Id: 4
End of main program.
PS C:\Users\Himanshu\Desktop\Coding\CODES\Java\Himanshu_Raturi>
Ln 52, Col 34
Spaces: 4
UTF-8
CRLF
{} Java
Go Live
Prettier

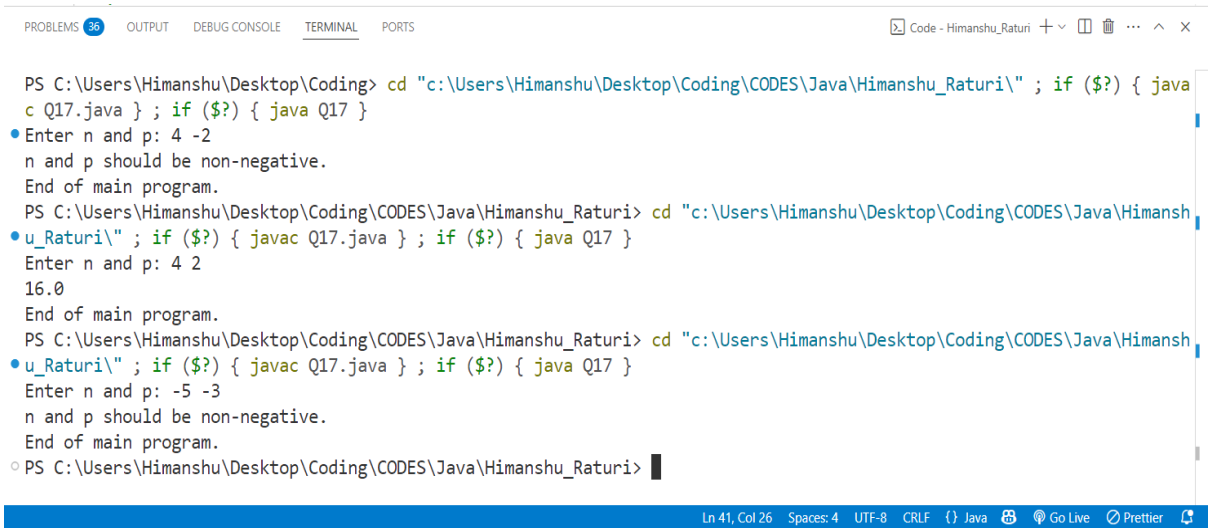
Practical No. 17: Create a class MyCalculator which consists of a single method power(int, int). This method takes two integers, n and p, as parameters and finds np . If either n or p is negative, then the method must throw an exception which says "n and p should be non-negative".

Source Code:

```
import java.util.Scanner;

class MyException extends Exception

{

   public MyException(String message)

   {

      super(message);

   }

}

class Mycalculator

{

   int n , p;

   void power(int n , int p)

   {

      try

      {

         if(n < 0 || p < 0)

         {

            throw new MyException("n and p should be non-negative.");

         }else if (n == 0 || p == 0)

         {

            throw new MyException("Both n and p are zero.");

         }

         System.out.println(Math.pow(n,p));
```

```
        }catch(MyException e)
        {
            System.out.println(e.getMessage());
        }
    }
}

public class Q17 {
    public static void main(String args[])
    {
        Mycalculator obj = new Mycalculator();
        int n,p;
        System.out.print("Enter n and p: ");
        Scanner sc = new Scanner(System.in);
        n = sc.nextInt();
        p = sc.nextInt();
        obj.power(n, p);
        System.out.println("End of main program.");
    }
}
```

OUTPUT:


PROBLEMS 36
OUTPUT
DEBUG CONSOLE
TERMINAL
PORTS
Code - Himanshu_Raturi
PS C:\Users\Himanshu\Desktop\Coding> cd "c:\Users\Himanshu\Desktop\Coding\CODES\Java\Himanshu_Raturi\" ; if ($?) { javac Q17.java } ; if ($?) { java Q17 }
Enter n and p: 4 -2
n and p should be non-negative.
End of main program.
PS C:\Users\Himanshu\Desktop\Coding\CODES\Java\Himanshu_Raturi> cd "c:\Users\Himanshu\Desktop\Coding\CODES\Java\Himanshu_Raturi\" ; if ($?) { javac Q17.java } ; if ($?) { java Q17 }
Enter n and p: 4 2
16.0
End of main program.
PS C:\Users\Himanshu\Desktop\Coding\CODES\Java\Himanshu_Raturi> cd "c:\Users\Himanshu\Desktop\Coding\CODES\Java\Himanshu_Raturi\" ; if ($?) { javac Q17.java } ; if ($?) { java Q17 }
Enter n and p: -5 -3
n and p should be non-negative.
End of main program.
PS C:\Users\Himanshu\Desktop\Coding\CODES\Java\Himanshu_Raturi>
Ln 41, Col 26
Spaces: 4
UTF-8
CRLF
{} Java
Go Live
Prettier

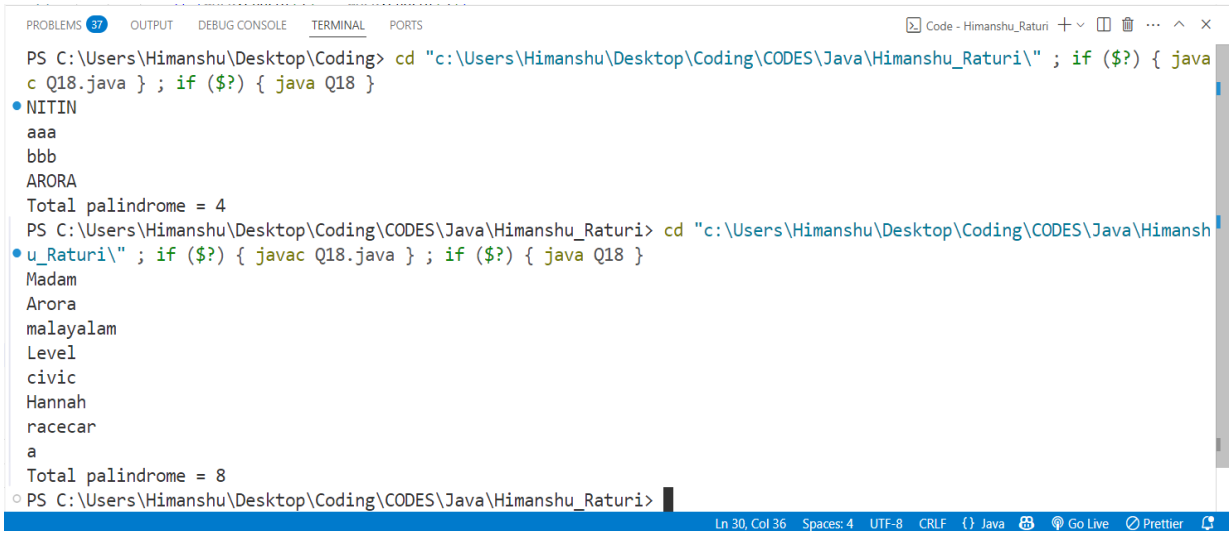
Practical No. 18: Write a java file handling program to count and display the number of palindromes present in a text file "myfile.txt".

Source Code:

```
import java.util.*;
import java.io.*;
public class Q18
{
   static boolean isPalindrome(String word)
   {
      word = word.toLowerCase();
      int i = 0, j = word.length() - 1;
      while (i < j)
      {
         if (word.charAt(i) != word.charAt(j))
         {
            return false;
         }
         i++;
         j--;
      }
      return true;
   }
   public static void main(String args[]) throws IOException
   {
      int count = 0;
      File file = new File("C:\\Users\\Himanshu\\Desktop\\Myfile.txt");
      Scanner sc = new Scanner(file);
      while (sc.hasNext())
      {
```

```
            String word=sc.next().replaceAll("[^a-zA-Z]", "");
            if (isPalindrome(word))
            {
                System.out.println(word);
                count++;
            }
        }
        sc.close();
        System.out.println("Total palindrome = " + count);
    }
}
```

OUTPUT:


PROBLEMS 37
OUTPUT
DEBUG CONSOLE
TERMINAL
PORTS
Code - Himanshu_Raturi
PS C:\Users\Himanshu\Desktop\Coding> cd "c:\Users\Himanshu\Desktop\Coding\CODES\Java\Himanshu_Raturi\" ; if ($?) { javac Q18.java } ; if ($?) { java Q18 }
NITIN
aaa
bbb
ARORA
Total palindrome = 4
PS C:\Users\Himanshu\Desktop\Coding\CODES\Java\Himanshu_Raturi> cd "c:\Users\Himanshu\Desktop\Coding\CODES\Java\Himanshu_Raturi\" ; if ($?) { javac Q18.java } ; if ($?) { java Q18 }
Madam
Arora
malayalam
Level
civic
Hannah
racecar
a
Total palindrome = 8
PS C:\Users\Himanshu\Desktop\Coding\CODES\Java\Himanshu_Raturi>
Ln 30, Col 36
Spaces: 4
UTF-8
CRLF
{} Java
Go Live
Prettier