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Programming In Java
ASSIGNMENT 1

Code:

```java
/* Implementing a menu-driven Java program (like fib or factorial) to
implement these input methods in java (command line args, Scanner,
BufferedReader, DataInputStream, Console )

    Code by Aadith Sukumar (https://www.github.com/aadi1011)
*/

package Factorial;
import java.io.*;
import java.util.Scanner;

//creating a class to get factorial of a number
class Get_Factorial
{
    //function to get factorial of a number
    void fetch_fact(int n)
    {
        int fact = 1;
        for(int i=1; i<=n; i++)
        {
            fact = fact*i;
        }
        System.out.println("Factorial of "+n+" is: "+fact); //Prints result
    }
}

public class menu_factorial
{
    public static void main(String[] args) throws IOException
    {
        //creating an object of Get_Factorial class and buffer reader object
        Get_Factorial obj1 = new Get_Factorial();
        BufferedReader b = new BufferedReader(new
InputStreamReader(System.in));

        //creating a menu
        int choice;
        System.out.println("Enter your choice: ");
```

```java
        System.out.println("1. Command Line Arg");
        System.out.println("2. Scanner");
        System.out.println("3. BufferedReader");
        System.out.println("4. DataInputStream");
        System.out.println("5. Console");
        System.out.println("6. Exit");
        choice = Integer.parseInt(b.readLine()); //taking input from user

        if(choice == 1) //if user chooses command line arg
        {
            // the number is passed as a command line argument. User should
pass the number
            // as argument while calling the program and then select this
option
            obj1.fetch_fact(Integer.parseInt(args[0]));
        }
        else if(choice == 2) //if user chooses scanner method
        {
            Scanner myObj = new Scanner(System.in);
            System.out.print("Enter your number for scanner: ");
            int a = myObj.nextInt();
            obj1.fetch_fact(a);
            myObj.close();
        }
        else if(choice == 3) //if user chooses buffer reader method
        {
            BufferedReader a1 = new BufferedReader(new
InputStreamReader(System.in));
            System.out.print("Enter your number for BufferReader: ");
            String n = a1.readLine();
            int n1 = Integer.parseInt(n);
            obj1.fetch_fact(n1);
        }
        else if(choice == 4) //if user chooses data input stream method
        {
            //taking data input stream from input.txt file
            try
            {
                DataInputStream a2 = new DataInputStream(new
FileInputStream("C:\\Users\\Aadith Sukumar\\Desktop\\E-Learn\\SIT\\Second
Year\\Sem 4\\PIJ Lab\\Factorial\\input.txt"));
                // readline() method is used to read string. It is deprecated
in to take input from a file.
                String s = a2.readLine();
                int n2 = Integer.parseInt(s);
                obj1.fetch_fact(n2);
                a2.close();
            }catch (Exception e) //catching exception
```

```java
            {
                e.printStackTrace();
            }
        }
        else if(choice == 5) //if user chooses console method
        {
            Console a3 = System.console();
            System.out.print("Enter your number for console: ");
            int n3 = Integer.parseInt(a3.readLine());
            obj1.fetch_fact(n3);
        }
        else if(choice == 6) //if user chooses to exit
        {
            System.exit(0);
        }
        else
        {
            System.out.println("Invalid choice");
        }
    }
}
```

Output:

```
Enter your choice:
1. Command Line Arg
2. Scanner
3. BufferedReader
4. DataInputStream
5. Console
6. Exit
2
Enter your number for scanner: 4
Factorial of 4 is: 24
```

```
PS C:\Users\Aadith Sukumar\Desktop\E-Learn\SIT\Second Year\Sem 4\PIJ Lab>  & 'C:\Program Files\Eclipse Adoptium\jdk-17.0.5.8-hotspot\bin\java.exe' '-XX
:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Users\Aadith Sukumar\AppData\Roaming\Code\User\workspaceStorage\3f53eda9d49fc81f90c79e3fb9f17c51\redhat
.java\jdt_ws\PIJ Lab_9b73243c\bin' 'Factorial.menu_factorial' 6
Enter your choice:
1. Command Line Arg
2. Scanner
3. BufferedReader
4. DataInputStream
5. Console
6. Exit
1
Factorial of 6 is: 720
```

GitHub Repo Link:

https://github.com/aadi1011/Basic-Java-Programs/tree/main/Assignment%201