Sri SAI RAM ENGINEERING COLLEGE
INSTITUTE OF TECHNOLOGY
West Tambaram, Chennai - 44

SAIRAM DIGITAL RESOURCES

YEAR II

SEM III

CS8392

OBJECT ORIENTED PROGRAMMING
(Common to CSE, EEE, EIE, ICE, IT)

UNIT NO 3

EXCEPTION HANDLING AND I/O

3.8 Reading and Writing Console

COMPUTER SCIENCE & ENGINEERING

WAYS TO READ INPUT FROM CONSOLE

- There are 3 ways for reading input from user in the command line environment.

1. **Using Buffered Reader Class**
2. **Using Scanner Class**
3. **Using Console Class**

Sairam

BUFFERED READER CLASS

- There are 3 ways for reading input from user in the command line environment.

1. **Using Buffered Reader Class**

- This method is used by wrapping the Sysem.in in an InputStreamReader which is wrapped in a BufferedReader.

Advantages:

- The input is buffered for efficient reading.

Drawback:

- The wrapping code is hard to remember.

Sairam

PROGRAM FOR BUFFERED READER CLASS

```
import java.io.BufferedReader;

import java.io.IOException;

import java.io.InputStreamReader;

public class Test
{
    public static void main(String[] args) throws IOException
    {
        //Enter data using BufferReader
        BufferedReader reader = new BufferedReader(new InputStreamReader(System.in));


        // Reading data using readLine
        String name = reader.readLine();


        // Printing the read line
        System.out.println(name);
    }
        }
```

INPUT : GEEK
OUTPUT: GEEK

Sairam

SCANNER CLASS

- There are 3 ways for reading input from user in the command line environment.

2. Using Scanner Class

- This method is the most preferred method to take input.
- The mail purpose of scanner class is to parse primitive types and strings using regular expressions.
- It can be also used to read input from the user in the command line.

Advantages:

- Convenient methods for parsing primitives (nextInt(), nextFloat(), …) from the tokenized input.
- Regular expressions can be used to find tokens.

Drawback:

The reading methods are not synchronized.

Sairam

PROGRAM FOR SCANNER CLASS

```
import java.util.Scanner;

class GetInputFromUser
{
    public static void main(String args[])
    {
        // Using Scanner for Getting Input from User
        Scanner in = new Scanner(System.in);

        String s = in.nextLine();
        System.out.println("You entered string "+s);

        int a = in.nextInt();
        System.out.println("You entered integer "+a);

        float b = in.nextFloat();
        System.out.println("You entered float "+b);
    }
}
```

INPUT:

```
GeeksforGeeks 12 3.4
```

OUTPUT:

```
You entered string GeeksforGeeks

You entered integer 12

You entered float 3.4
```

CONSOLE CLASS

- There are 3 ways for reading input from user in the command line environment.

3. Using Console Class

- Preferred way for reading user’s input from the command line.
- It can be used for reading password-like input without echoing the characters entered by the user.
- The format string syntax can also be used (like System.out.printf()).
- The java.io.Console class is attached with system console internally.

Sairam

Advantages:

- The input is buffered for efficient reading. Reading password without echoing the entered characters.

- Reading methods are synchronized.

- Format string syntax can be used.

Drawback:

- Does not work in non-interactive environment (such as in an IDE).

HOW TO READ INPUT FROM CONSOLE

3. Using Console Class

```
// How to declare a console class
Java Console class declaration
public final class Console extends Object implements Flushable
```

- A simple example to read text from console.

```
String text=System.console().readLine();
System.out.println("Text is: "+text);
```

Sairam

JAVA CONSOLE CLASS METHODS

Method	Description
Reader reader()	It is used to retrieve the reader object associated with the console
String readLine()	It is used to read a single line of text from the console.
String readLine(String fmt, Object... args)	It provides a formatted prompt then reads the single line of text from the console.
char[] readPassword()	It is used to read password that is not being displayed on the console.
char[] readPassword(String fmt, Object... args)	It provides a formatted prompt then reads the password that is not being displayed on the console.
Console format(String fmt, Object... args)	It is used to write a formatted string to the console output stream.
Console printf(String format, Object... args)	It is used to write a string to the console output stream.
PrintWriter writer()	It is used to retrieve the PrintWriter object associated with the console.
void flush()	It is used to flushes the console.

PROGRAM TO READ INPUT FROM CONSOLE

```
//How to get the object of Console
```

- System class provides a static method console() that returns the singleton instance of Console class.

```
public static Console console(){}
```

```
//Example code to get the instance of Console class.
Console c=System.console();
```

```
//Simple program to read from console:
public class Sample
{
    public static void main(String[] args)
    {
        // Using Console to input data from user
        String name = System.console().readLine();
        System.out.println(name);
    }
}
```

Sairam

PROGRAM FOR CONSOLE CLASS

Java Console Example:

```
import java.io.Console;
class ReadStringTest
{
public static void main(String args[])
{
Console c=System.console();
System.out.println("Enter your name: ");
String n=c.readLine();
System.out.println("Welcome "+n);
}
}
```

INPUT: BALA
OUTPUT: WelcomeBALA

Sairam

PROGRAM TO READ PASSWORD FROM CONSOLE

Another Java Console Example to read password:

```
import java.io.Console;
class ReadPasswordTest
{
public static void main(String args[]){
Console c=System.console();
System.out.println("Enter password: ");
char[] ch=c.readPassword();
String pass=String.valueOf(ch);//converting char array into string
System.out.println("Password is: "+pass);
}
}
```

INPUT: Enter password:

OUTPUT: Password is: 123

Sairam

READING AND WRITING FROM CONSOLE

VIDEO LINK:

https://www.slideserve.com/tex/java-io-supports-console-and-file-i-o

Sairam