Think and Tell

Are you an android user?

What are your chances as a software developer to encounter a Java program?

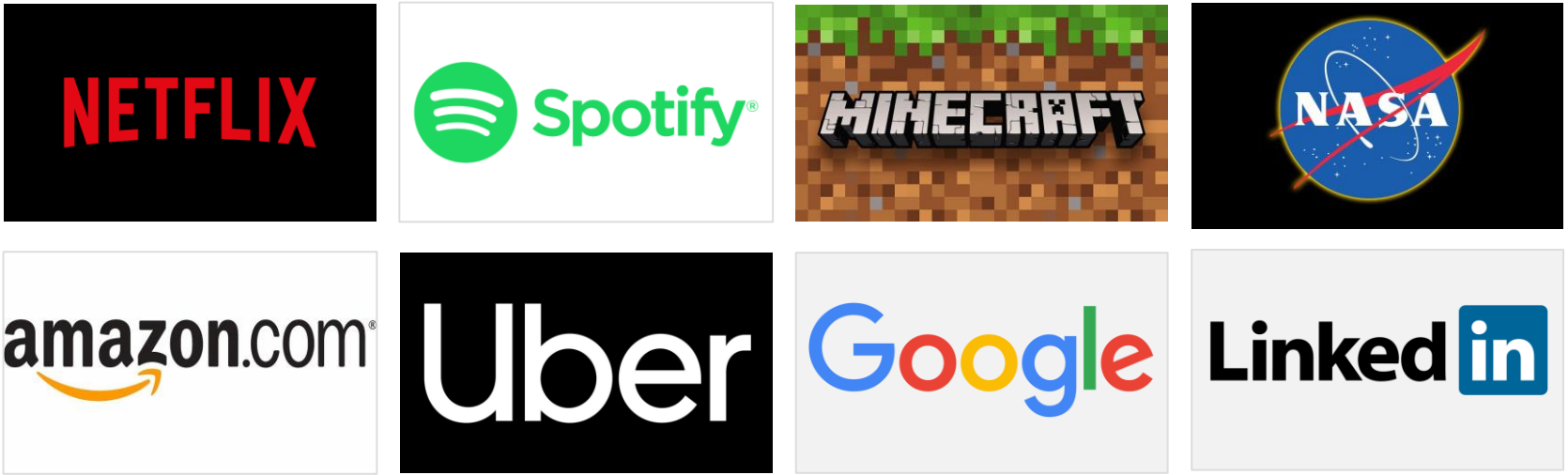
Can a software developer work without knowing about object-oriented programming language?

Java is Everywhere!

Amazon, the world's largest e-commerce website provides a seamless online shopping experience to its customers.

Do you know on which platform it is created?

Why Learn Java?



Which language is used by these companies to manage their platforms and applications?

Source: https://www.google.com/

Write a Simple Java Program to Display Output

Learning Objectives

- Create a Java program
- Interpret the significance of Java architecture
- Differentiate JVM-JRE-JDK
- Declare data types and variables
- Implement operators in a Java program
- Use Scanner class for taking inputs

Interactive Demo

Let us write our first Java program.

Interactive Demo

```
public class MyFirstDemo
{
    public static void main(String[] args)
    {
            System.out.println("Hello World");
    }
}
```

Output :

Hello World

What Actually Happened?

- How was the application running?
- Who was checking the syntax?
- How was the system interpreting the code?
- How did this output come?

What is Java?

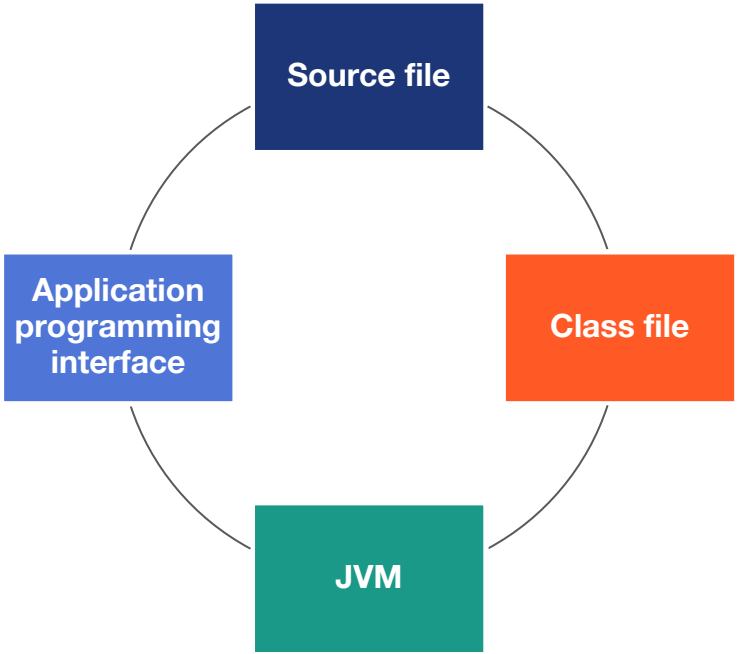
- Java is one of the most popular object-oriented programming language in the world.
- It is used to develop almost every type of modern-day software application. Websites, computer games, mobile applications, full-fledged programs for corporations and scientific operations all use Java.
- Java is the first programming language which provides the concept of writing the programs that can be executed using the web.

Features of Java

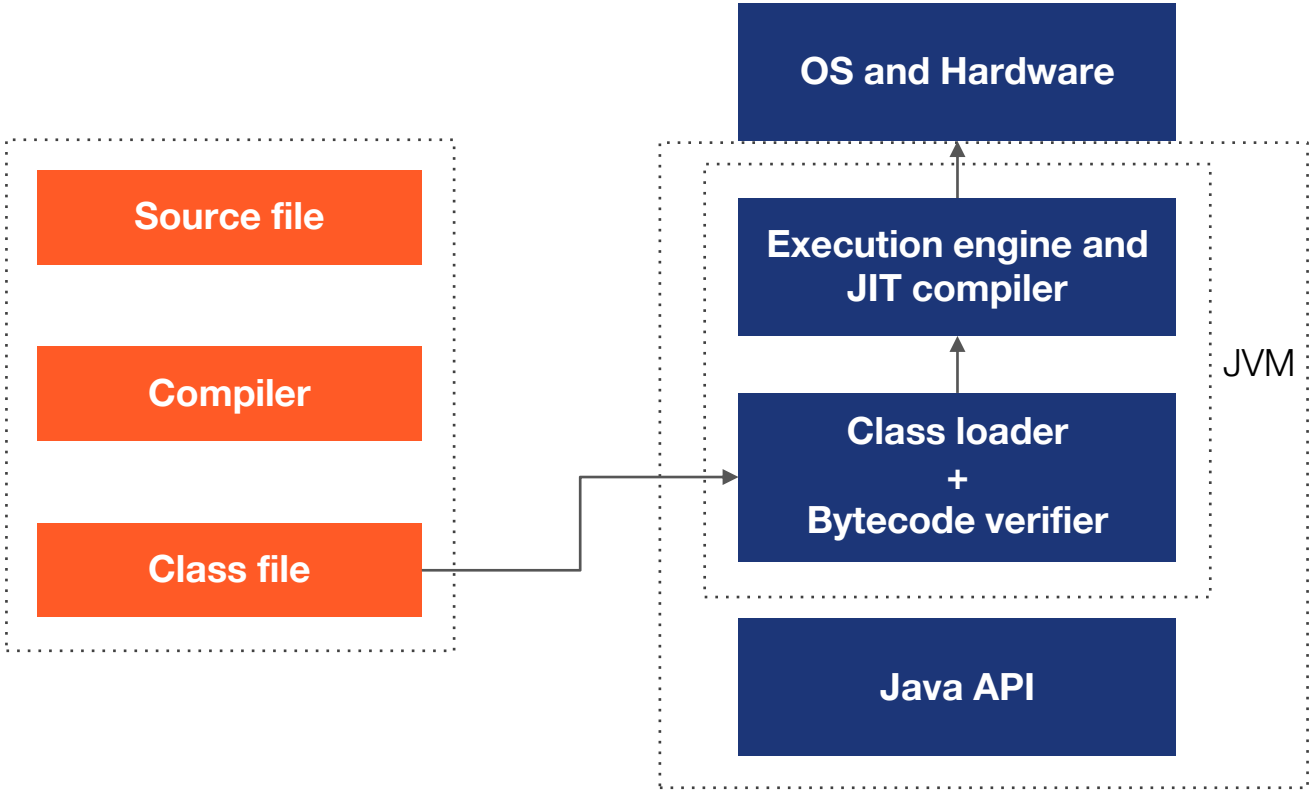
- Platform independent (WORA)
- Automatic memory management
- Robust platform
- Object-oriented language
- Secured
- Distributed
- High performance

Java Architecture

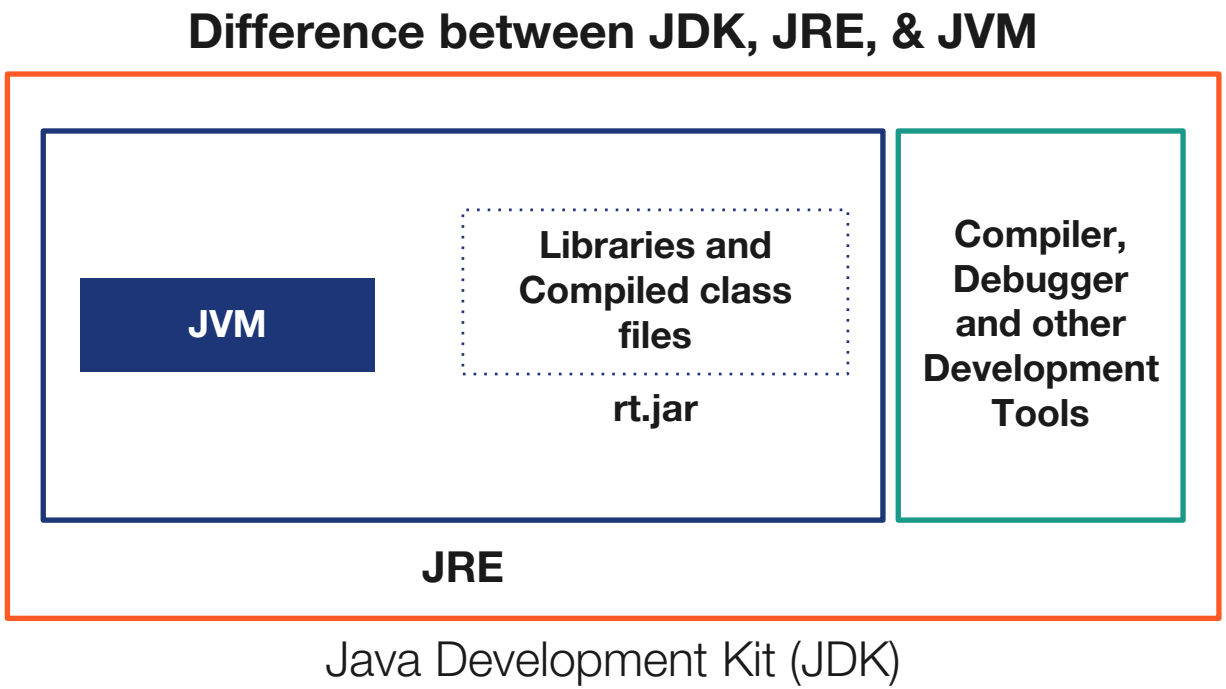
Java architecture defines the components that are essential to carry out the creation and execution of a Java code. Various components of Java Architecture are:



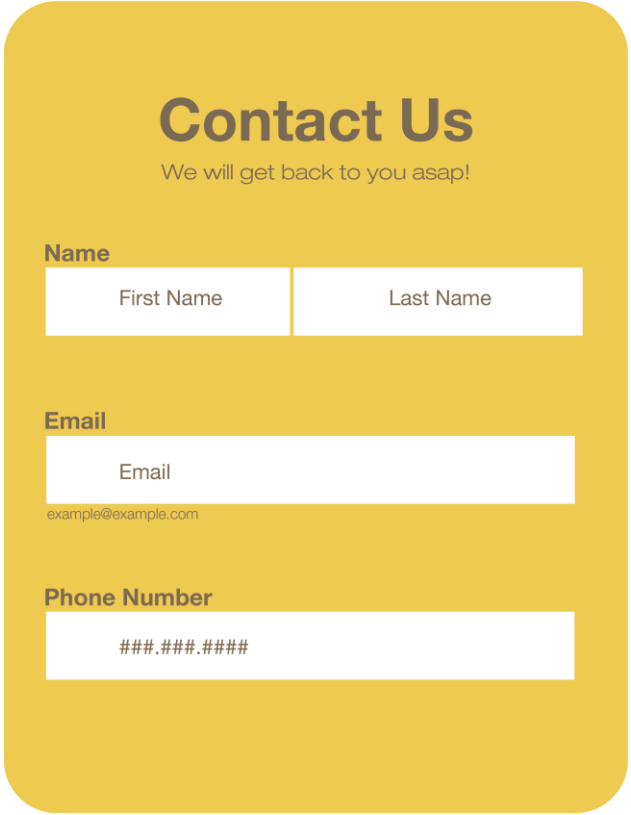
Java Architecture Contd.



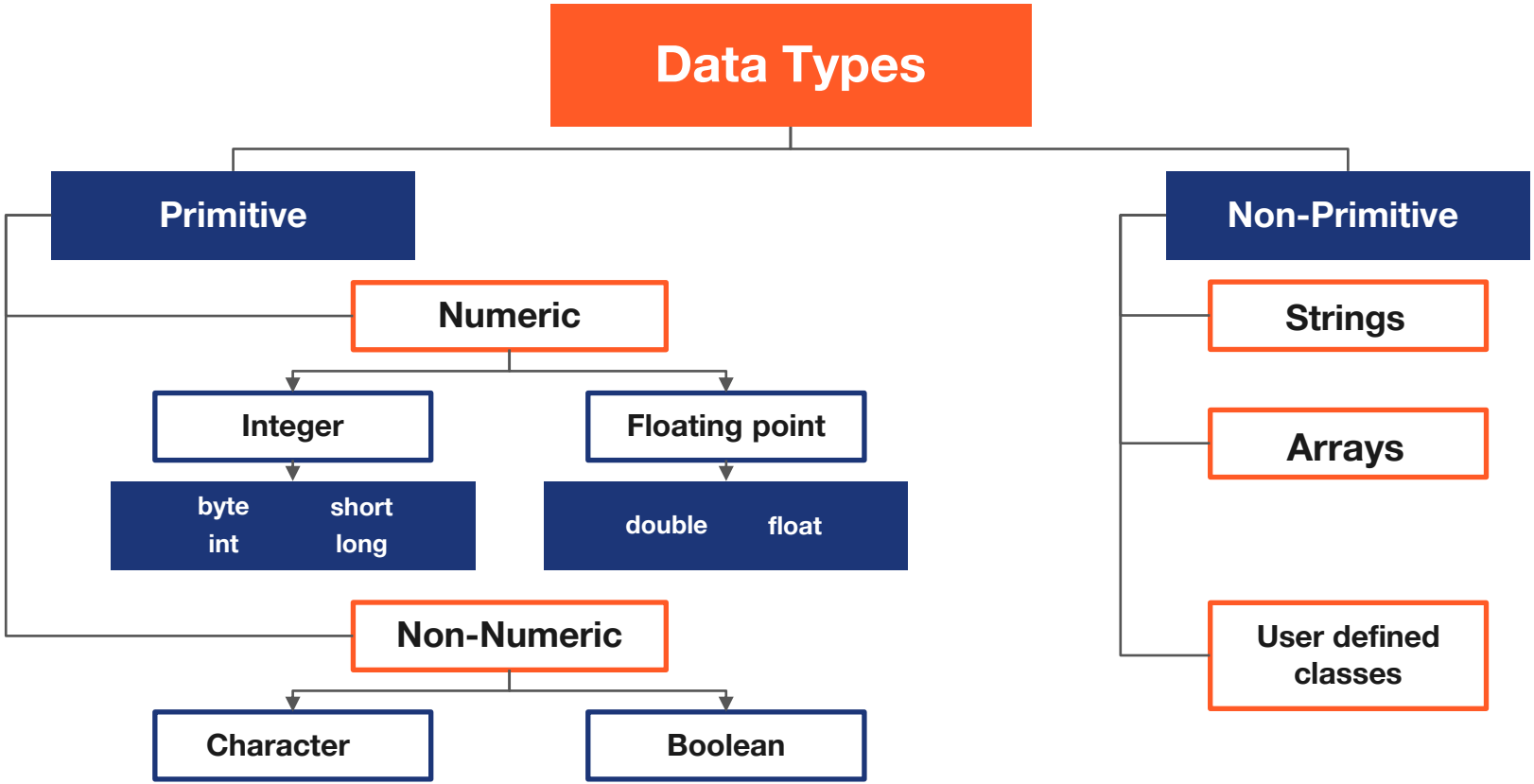
Difference Between JDK, JRE & JVM



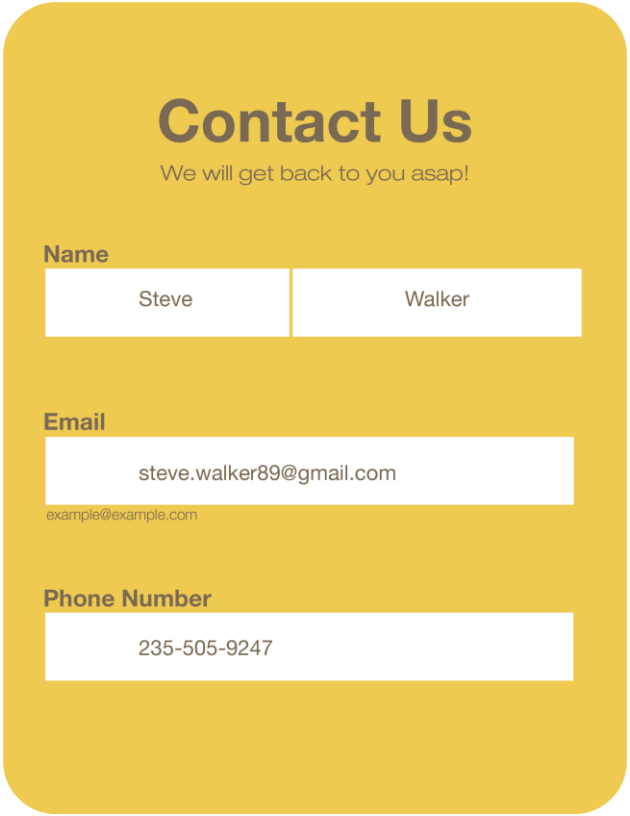
Which Data Will You Store in this Form?



Java Data Types



Identify the Data Types Used in this Form



Java Data Types

There are eight primitive data types in Java:

Group	Data Type	Size	Range	Default Value
Integer	byte	One byte	-2^{7} to 2^{7-1} (signed)	0
	short	Two byte	-2^{15} to 2^{15-1}	0
	int	Four byte	-2^{31} to 2^{31-1}	0
	long	Eight byte	-2^{63} to 2^{63-1}	0
Floating point	float	Four byte	3.4^{e-038} to 3.4^{e+038}	0.0
	double	Eight byte	1.7^{e-308} to 1.7^{e+308}	0.0
Boolean	boolean	One bit	true or false	false
Character	char	Two byte	A single character	null

Java Keywords

abstract	boolean	break	byte
case	catch	char	class
const	continue	default	do
double	else	extends	final
finally	float	for	goto
if	implements	import	instanceof
int	interface	long	native
new	package	private	protected
public	return	short	static
strictfp	super	switch	synchronized
this	throw	throws	transient
try	void	volatile	while
enum	assert		

Java Variables

- A variable refers to a memory location where a data value is stored.
- Different values can be assigned to a variable while executing a program.
- Java allocates memory to each variable used in a program.
- Each variable used in a program must be declared.

The syntax of a variable is:

```
<type> <variablename>; // Single variable of a given type
syntax - int salary;
<type> <variable1name,variable2name.....variable_n_name>;
// Multiple variables of a given type
```

Interactive Demo

Declaring and assigning value to variables.

Interactive Demo contd.

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

          String companyName;
          int noOfEmployees;

          companyName = "SmartGames";
          int noOfEmployees = 200;

          System.out.println("Company Name:"+
          companyName);
          System.out.println("No. Of Employees:"+
          noOfEmployees);
   }
}
```

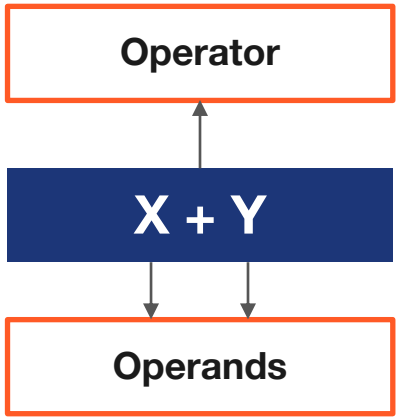
Output :

Company Name : SmartGames

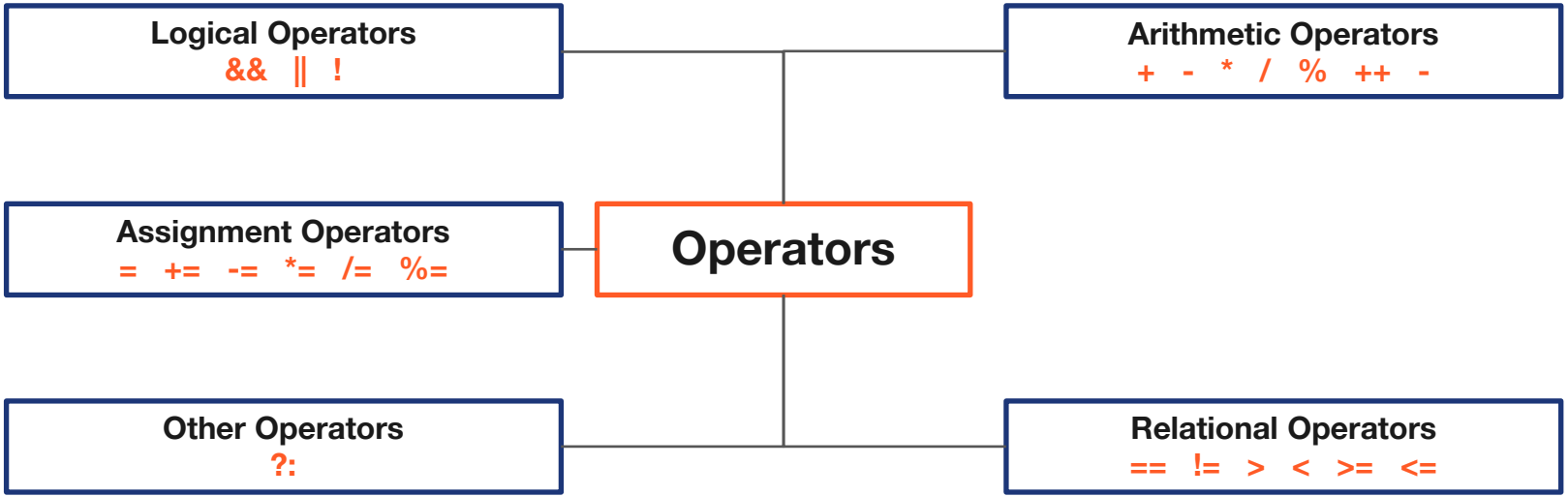
No. of Employees :200

Java Operators

- An operator is a special symbol that is combined with one or more operands.
- The following figure shows an operator and two operands.



Different Types of Operators



Accepting Input from a User

- We use the Scanner class in Java for taking input from a user. This class is available in the java.util package.
- Steps for taking Input
  - Import util package
  - Create an object of Scanner class
  - Use an appropriate method to read data
- Syntax
  - `import java.util.*;`
  - `Scanner sin = new Scanner(System.in);`
  - `int num = sin.nextInt();`

Interactive Demo

Write a Java program that takes name, salary, and age as input from a user and prints them.

Key Takeaways

- Java and its key features
- Java architecture and its components
- Difference between JVM-JRE-JDK
- Data types and variables in Java
- Operators in a Java program
- Scanner Class for taking inputs