

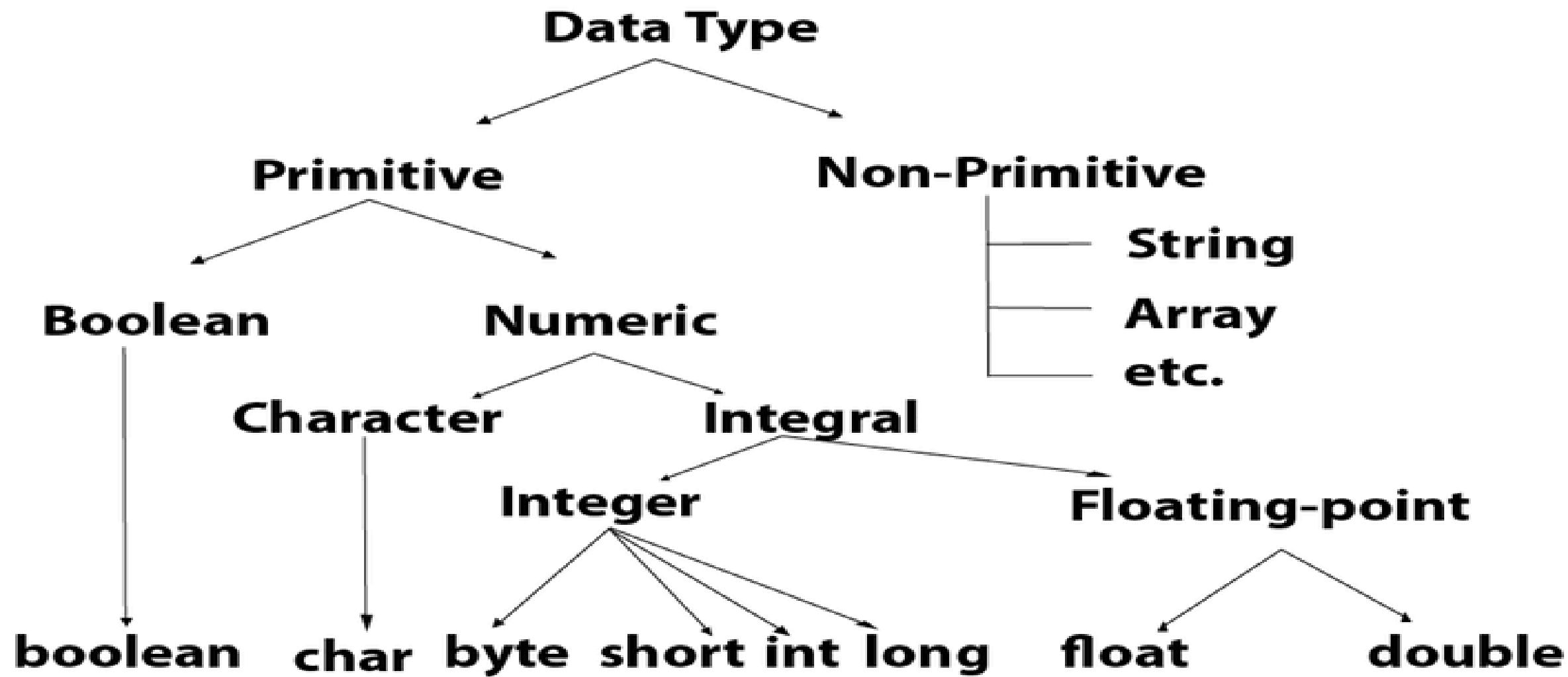
Logic Building Session

Day 3: MAR 2023

Session 1

Kiran Waghmare





/u0000 to /uFFFF

Data Type

Primitive

Non-Primitive

String

Array

etc.

Boolean

Numeric

Character

Integral

Integer

Floating-point

boolean

char

byte

short

int

long

float

double

false

'\u0000'

0

0

0

0L

0.0F

0.0

-128 to 127

-2^{15} to $(2^{15})-1$

Data Types

Type Name	Minimum Value	Maximum Value	Default	Size	Literal
byte	-128	127	0	8-bit +/-	_____
short	-32768	32767	0	16-bit +/-	_____
int	-2147483648	2147483647	0	32-bit +/-	3, 077, 0xBAAC
long	-9223372036854775808	9223372036854775807	0	64-bit +/-	3L
float	-1.40239846e-45	3.40282347e+38	0.0	32-bit IEEE float	3.0F, 3.0E2F
double	-4.94065645841246533e-324	1.79769313486231570e+308	0.0	64-bit IEEE float	3.0, 3.0E2, 3.0e2D
boolean	false	true	false	N/A	true, false
char	\u0000	\uffff	\u0000	16-bit Unicode	'3'

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boolean	false	true	false	N/A	true, false
char	\u0000	\uffff	\u0000	16-bit Unicode	'3'

Primitive Type Casting:[only numeric primitives]

Mouse

Select

Text

Draw

Stamp

Spotlight

Who can see what you

Implicit casting
(SMALLER TO BIGGER)

UPCASTING

smaller

Largest

byte ----> short ---->

int ----> long ----> float ----> double

char ---->

DOWNCASTING

(BIGGER TO SMALLER)

Explicit casting

```
class Casting2{
```

```
public static void main(String ar1 error  
{
```

```
int x=130;
```

```
byte b=(byte)x;
```

```
System.out.println(x);
```

```
System.out.println(b);
```

```
}
```

```
}
```

byte b=x;



Who can see what you s

```
D:\Test>javac Casting2.java
```

```
D:\Test>java Casting2
```

```
130
```

```
-126
```

```
D:\Test>
```



```
class Casting3{

    public static void main(String args[])
    {
        → byte x=12;
        → byte y=11;
        //byte z=x+y;//complie time error

        byte z=(byte)(x+y);
        //byte z=(byte)x+(byte)y;

        System.out.println(x);
        System.out.println(y);
        System.out.println(z);

    }
}
```

3 participants raised hand

120

Mouse

Select

Text

Draw

Stamp

Spotlight

Who can see what you sh

D:\Test>javac Casting3.java

Casting3.java:8: error: incompatible type
nt to byte

byte z=x+y;
^

1 error

D:\Test>javac Casting3.java

D:\Test>java Casting3

12

11

23

D:\Test>


```
class CmdLine{  
  
    public static void main(String args[])  
    {  
  
        System.out.println("Hello "+args[0]);  
  
    }  
  
}
```

D:\Test>java CmdLine?
12
11
23

D:\Test>javac CmdLine.java

D:\Test>java CmdLine Raj
Hello Raj

D:\Test>

```
class CmdLine{  
  
    public static void main(String args[])  
    {  
  
        System.out.println("Hello " +args[0]);  
        System.out.println("Hello " +args[1]);  
        System.out.println("Hello " +args[2]);  
  
    }  
}
```

x

y

args[]

D:\Test>

Hello Raj

D:\Test>javac CmdLine.java

D:\Test>java CmdLine Raj Dipali Vishal

Hello Raj

Hello Dipali

Hello Vishal

D:\Test>

```
class CmdLine1{
```

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

```
String s1 = args[0]; //10  
String s2 = args[1]; //20
```

```
//Type casting
```

```
int i = Integer.parseInt(s1);  
int j = Integer.parseInt(s2);
```

```
System.out.println("Hello "+s1);  
System.out.println("Hello "+s2);  
System.out.println("Hello "+(s1+s2)); //30-->1020  
System.out.println("Hello "+(i+j)); //30-->1020
```

```
}
```

```
}
```



Mouse

Select

Text

Draw

Stamp

Spotlight

Eraser

Who can see what you share

Classes Inbuilt

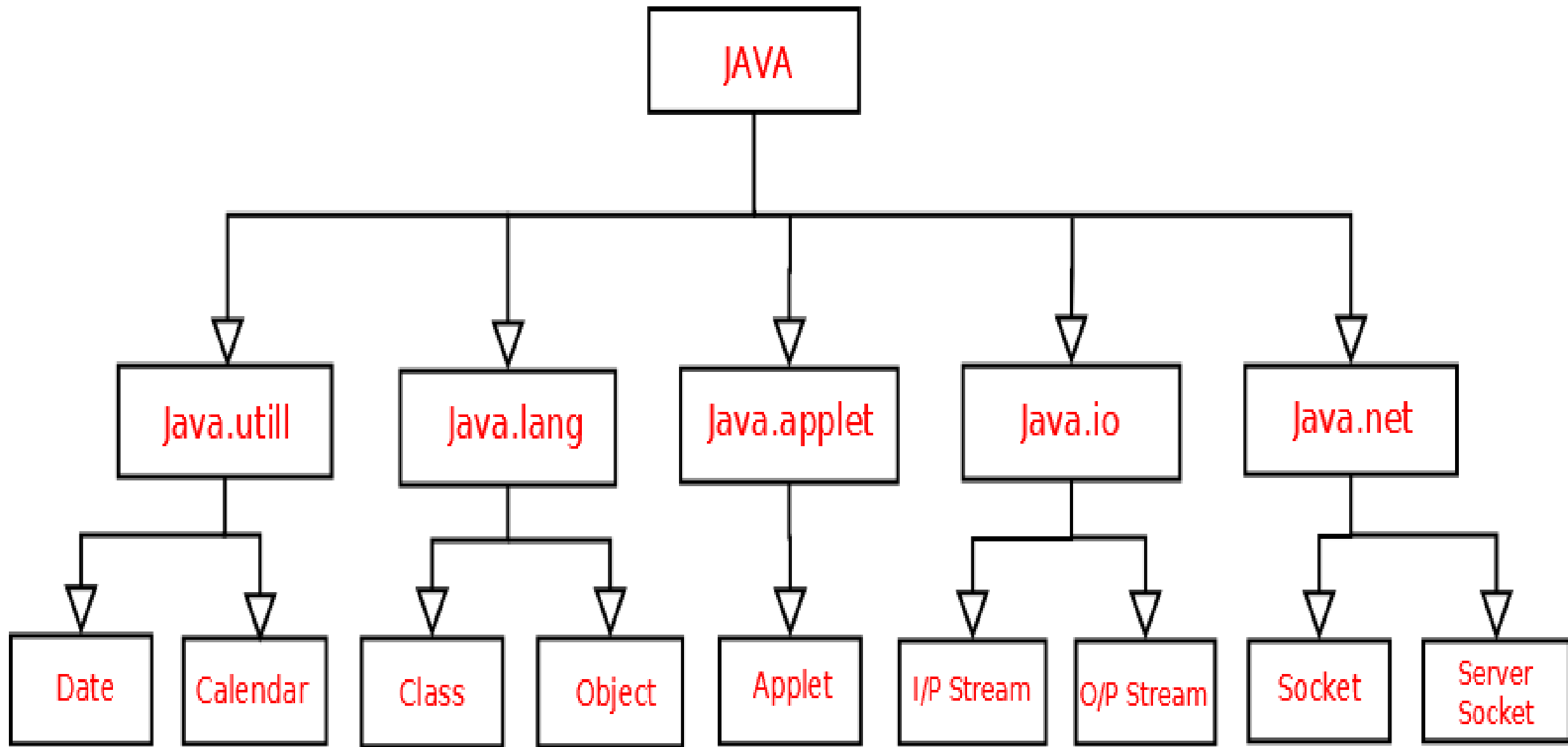
Float
Double
Short
Byte
Char

int

Primitive data type

Integer

Wrapper class





Scanner class

read input
data from

Keyboard

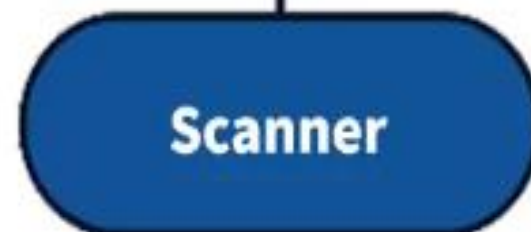
Console

Text file

Any source



inherits



Fastest and easiest way to receive the
input from the user in java

User Input : Scanner classe



Who can see what you share here? Recording On

Java

lang

String class
System call

default/ import st is not
necessary

import java.lang.*;

util

import java.util.*;

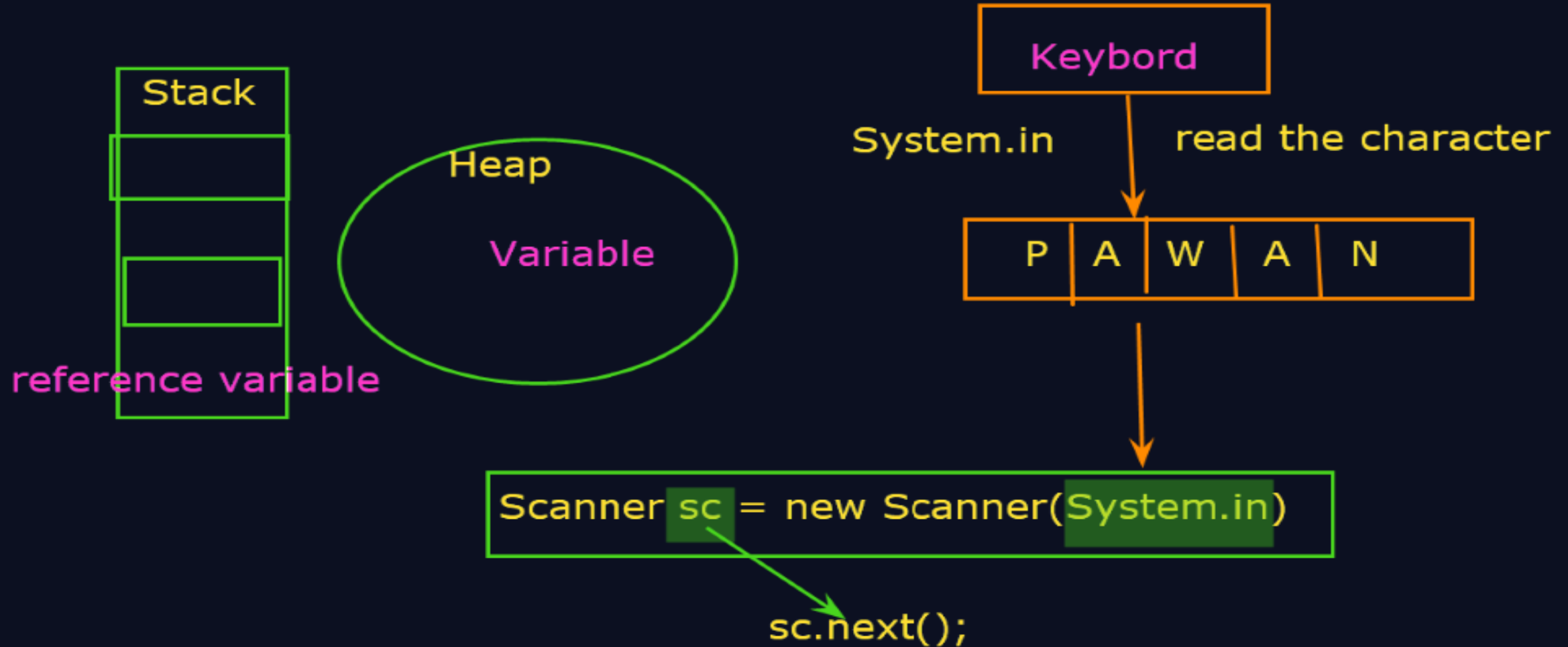
awt

add import
statement

io

User Input : Scanner classe

Scanner class : inbuilt java class that scans the given resource for any String or primitive data type.



```
import java.util.Scanner;
```

```
class Input{
```

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

```
        System.out.println("Hello "+s1);
```

```
    }
```

```
}
```

java

util

Scanner

lang

```
import java.util.Scanner;
```

```
class Input{
```

```
    public static void main(String args[])
    {
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter your name:");
        String name = sc.next();

        System.out.println("Welcome"+name);
    }
}
```

Scanner class methods:

- boolean : nextBoolean()
- byte : nextByte()
- short : nextShort()
- int : nextInt()
- long : nextLong()
- float : nextFloat()
- double : nextDouble()
- String : next()[without space]
- String : nextLine()[with space]

Mouse

Select

Text

Draw

Stamp

Spotlight

Eraser

Format

Undo

Redo

Clear

Who can see what you share here? Recording On

```
D:\Test>javac Input.java
```

```
D:\Test>java Input
```

```
Manish
```

```
Manish
```

```
D:\Test>javac Input.java
```

```
D:\Test>java Input
```

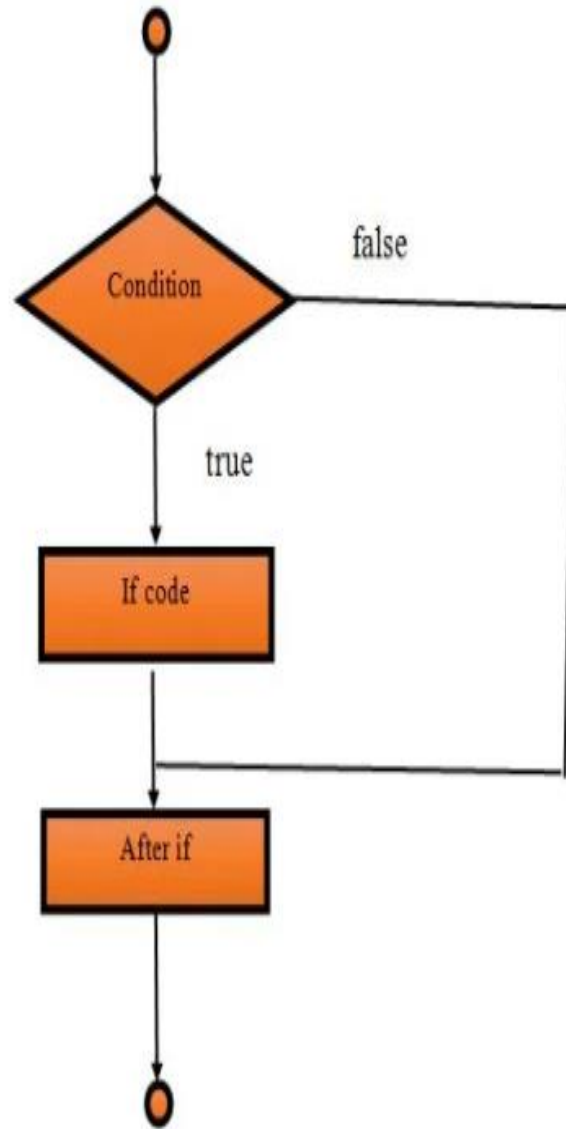
```
Enter your name:
```

```
Rama
```

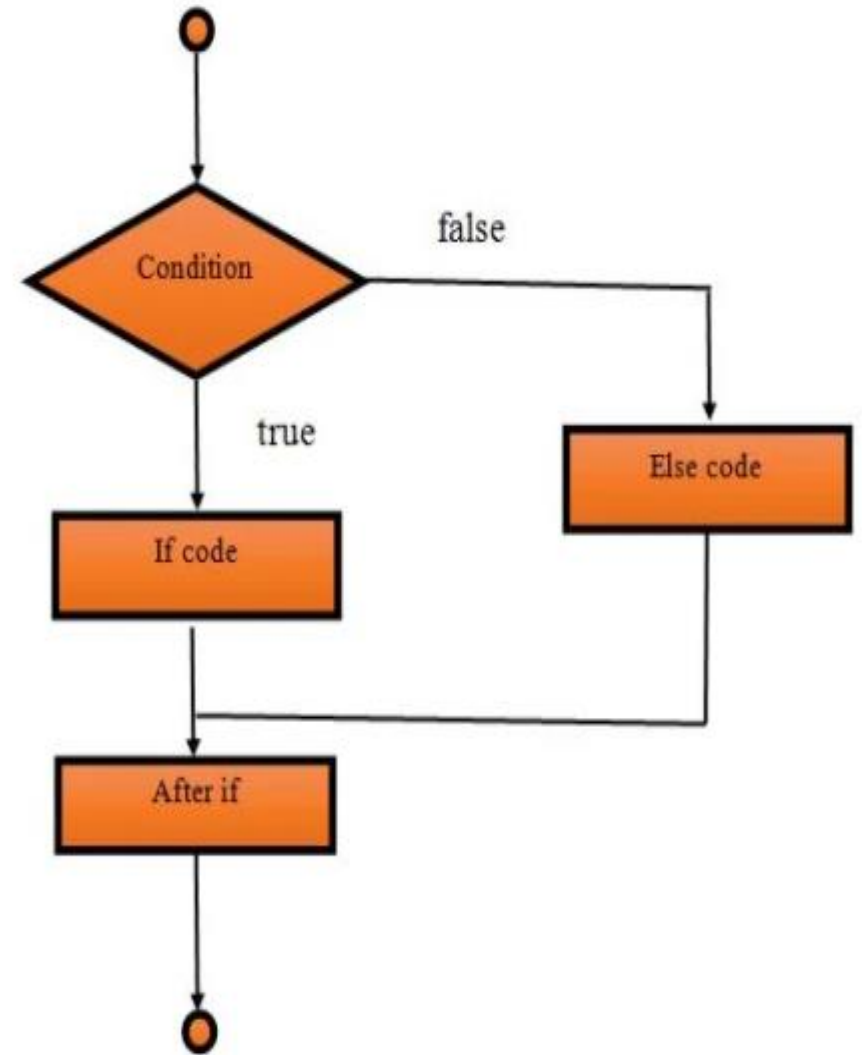
```
WelcomeRama
```

```
D:\Test>
```

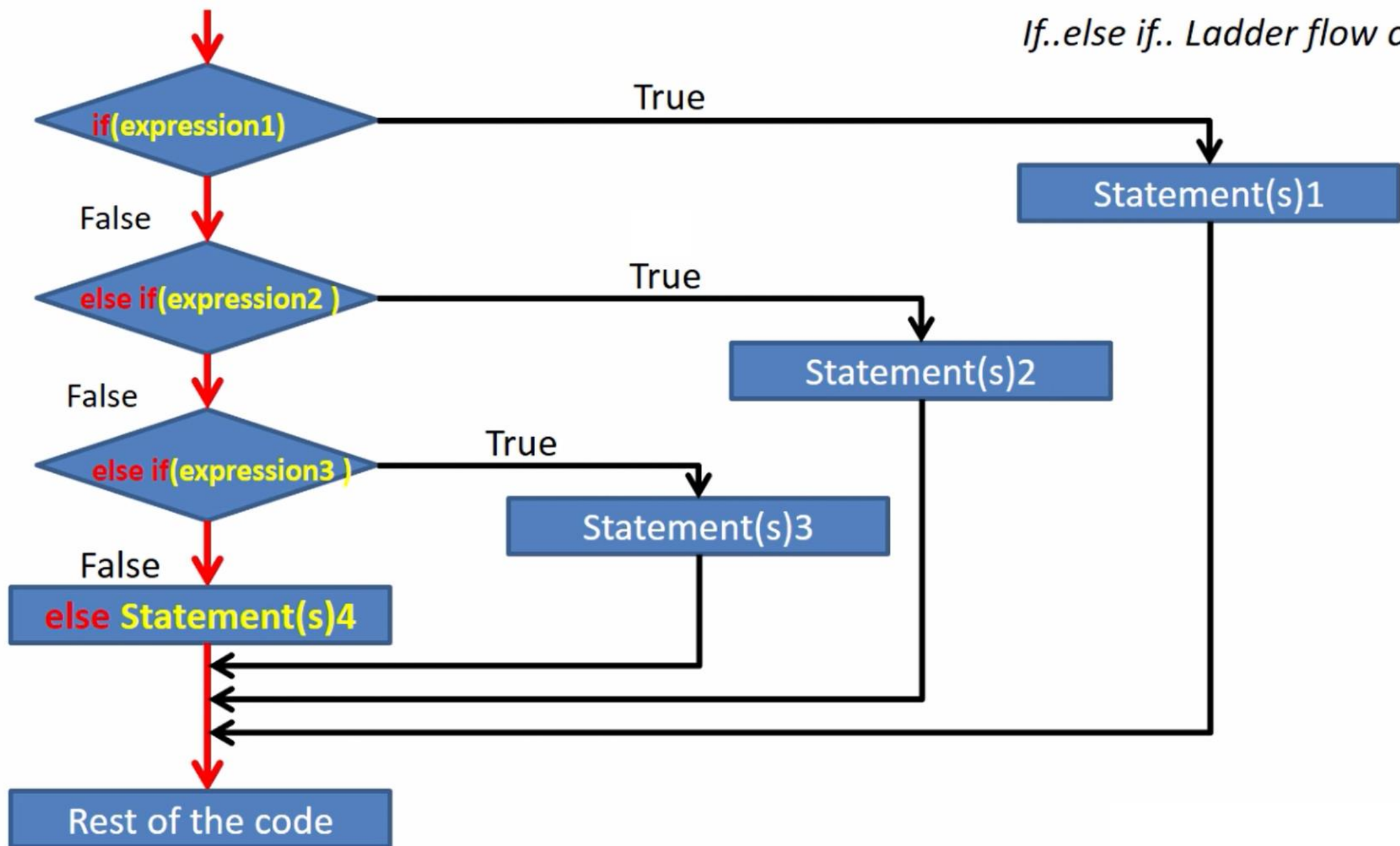
Data-flow-diagram of If Block

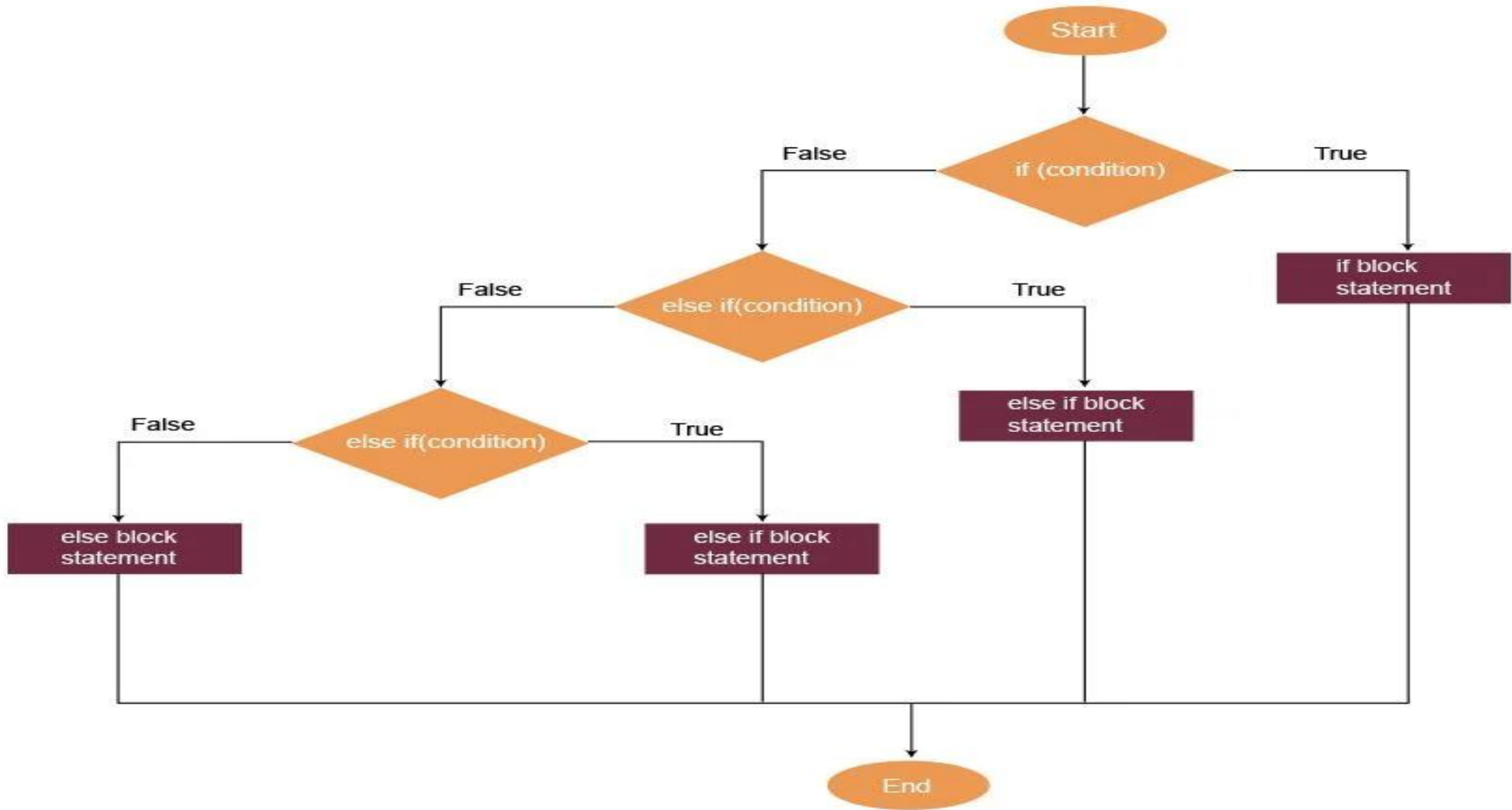


Data-flow-diagram of If Else Block



If..else if.. Ladder flow chart





```
class IfElse{
```

```
    public static void main(String args[])  
    {  
        int x=100, y=20;  
  
        System.out.println(x<y);  
  
        System.out.println(x!=y-21);  
  
        boolean test = x >= -10;  
        System.out.println(test);  
    }  
}
```

Mouse

Select

Text

Draw

Stamp

Spotlight

Eraser

Format

Undo

Redo

Clear

Who can see what you share here? Recording On

D:\Test>javac IfElse.java

D:\Test>java IfElse
false

D:\Test>javac IfElse.java

D:\Test>java IfElse
false
true
true

D:\Test>

```
if(cond exp)
{
    st1;
}
else
{
    st2;
}
```

Mouse

Select

Text

Draw

Stamp

Spotlight

Eraser

Format

Undo

Redo

Clear

Who can see what you share here? Recording On

Ternary Operator: Conditional operator

Syntax:

(conditional exp) ? statement 1 : statement2;

True

False

int x= (3>2) ? "yes":"no";