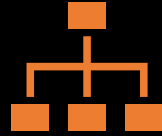


# Core Java

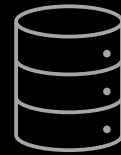


## Unit I

# Learning outcomes



General Program Structure



Data Types

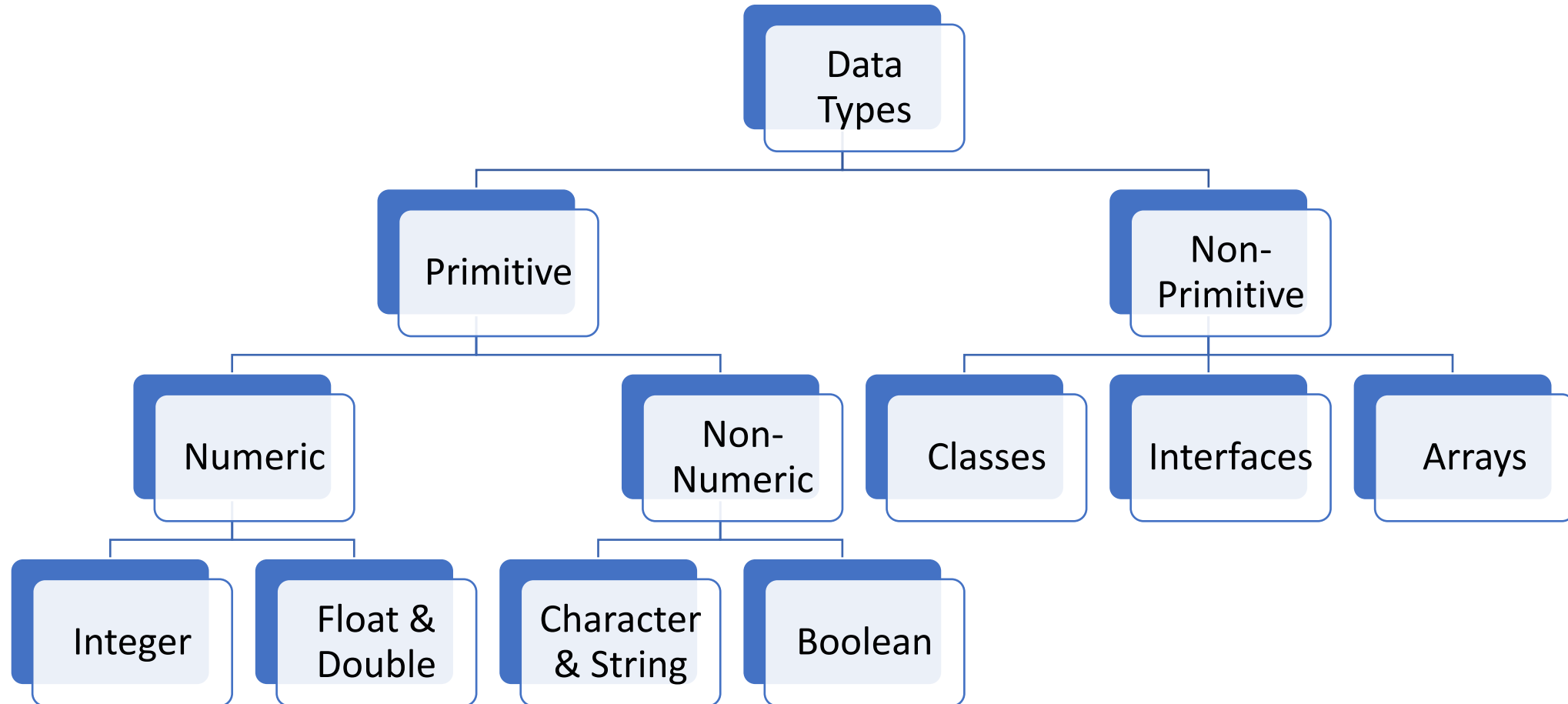


Scanner Class

# General Program Structure

Documentation Section	→ Suggested
Package Statement	→ Optional
Import Statement	→ Optional
Interface Statement	→ Optional
Class Definition	→ Optional
Main Method Class { //Main method defintion }	→ Essential Section

# Data Types



# The Primitive Types

Name	Width(Size in bits)	Range	Example
long	64	−9,223,372,036,854,775,808 to 9,223,372,036,854,775,807	long a=2000000000;
int	32	−2,147,483,648 to 2,147,483,647	int b = 200000;
short	16	−32,768 to 32,767	short c = 2000;
byte	8	−128 to 127	byte d = 20;
float	32	1.4e−045 to 3.4e+0	float e = 2.7f;
double	64	4.9e−324 to 1.8e+308	double f = 25.326;
char	16	0 to 65,536	char g = 'x';
boolean	1	true or false	boolean h= true;

# String Literals



String literals in Java are specified by enclosing a sequence of characters between a pair of double quotes.



Example -

**`"\"This is in quotes\""` →  
`"This is in quotes"`**

# String Literals



Escape Sequence	Description
\'	Single quote
\"	Double quote
\\	Backslash
\r	Carriage return
\n	New line (also known as line feed)
\f	Form Feed
\t	Tab
\b	Backspace

# Standard Default values

Type of variable	Default value
Byte	zero
short	zero
int	zero
long	Zero: 0L
float	0.0f
double	0.0d
char	Null Character
boolean	false
reference	null



# Scanner Class

- The Scanner class is used to get user input.
- It is found in the **java.util** package.

Method	Description
public String nextLine()	Reads a String value from the user
public byte nextByte()	Reads a byte value from the user
public short nextShort()	Reads a short value from the user
public int nextInt()	Reads a int value from the user
public long nextLong()	Reads a long value from the user
public float nextFloat()	Reads a float value from the user
public double nextDouble()	Reads a double value from the user
public boolean nextBoolean()	Reads a boolean value from the user

# Find the bugs and Missing lines in the code

```
public class Simple{  
    public static void main(){  
        Scanner sc=new Scanner();  
        int b = sc.nextFloat();  
        System.out.println("b="+b);  
    }  
}
```

```
import java.util.*;  
public class Simple{  
    public static void main(String a[]){  
        Scanner sc=new Scanner(System.in);  
        int b = sc.nextInt();  
        System.out.println("b="+b);  
    }  
}
```

# Type Conversion and Casting

## 1. Java's Automatic Conversions (Widening)

When one type of data is assigned to another type of variable, an automatic type conversion will take place if the following two conditions are met:

The two types are compatible.

The destination type is larger than the source type.

# Type Conversion and Casting

## 2. Casting Incompatible Types

To create a conversion between two incompatible types, you must use a cast.

A cast is simply an explicit type conversion. It has this general form: **(target-type) value**

Example

```
int a;  
byte b;  
b = (byte) a;
```

Casts that result  
in No loss of  
information

FROM	TO
byte	short, char, int, long, float, double
short	int, long, float, double
char	int, long, float, double
int	long, float, double
long	float , double
float	double

## Take Home Task Solution

- Find Different formatting String for printf() method.

Format String	Description
%d	Integer
%f	Float & double
%c	Character
%C	Convert Character to Uppercase
%s	String
%S	Convert String to uppercase
%b	Boolean

# Take Home Task



Write a Java Code to read an integer from user and find Quotient and Remainder.



Write a Java code to read any character from user and print its ASCII Value.

Thank You

