



Vidyavardhini's College of Engineering and Technology
Department of Artificial Intelligence & Data Science

Report On
Currency Converter

Submitted in partial fulfillment of the requirements of the Course project in
Semester III of Second Year Artificial Intelligence & Data Science

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CERTIFICATE

This is to certify that the project entitled “Currency Converter” is a bonafide work of "Pratham Nagar, Priyanka Dhuri, Tanvi Surve, Rahul Yadav" submitted to the University of Mumbai in partial fulfillment of the requirement for the Course project in semester III of Second Year Artificial Intelligence & Data Science.

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Contents

	Pg. No
1 Section One 1	1
1.1 Subsection One of Section One	2
1.2 Subsection Two of Section One	3
1.3 Subsection Three of Section One	4
2 Section Two	5
2.1 Subsection One of Section Two	6
3 Section Three	7

1.Abstract

This project is designed to convert an input amount from one of five different currencies to another. It offers conversion options for Rupees, Dollars, Pounds, Euros, and Kuwaiti Dinar. The user is prompted to enter the source currency code and the amount to be converted. The program then uses predefined conversion rates to calculate and display the equivalent amounts in the selected destination currencies. The program employs a series of conditional statements to handle the conversion logic based on the user's input. The result is presented with a predefined format using the DecimalFormat class for precision. If an invalid currency code is entered, the program informs the user about the invalid input. Overall, this program provides a straightforward and user-friendly way to perform currency conversions between the supported currencies."

2.Contents

Type conversion

Type conversion, also known as type casting or type coercion, is the process of converting a value from one data type to another in a programming language. This is done to ensure that data is compatible and can be used in a particular context, operation, or function that expects a specific data type. Type conversions can occur implicitly or explicitly, depending on the programming language and the situation.

There are two primary types of type conversion:

- **Implicit Type Conversion (Coercion):**

Implicit type conversion, also known as automatic type conversion, occurs automatically by the programming language itself.

It typically involves converting a value from a lower precision or narrower data type to a higher precision or wider data type, without requiring explicit code from the programmer.

For example, when adding an integer to a floating-point number, the integer is implicitly converted to a floating-point value before the addition takes place.

- **Explicit Type Conversion (Casting):**

Explicit type conversion, also known as manual type conversion or casting, requires the programmer to specify the type conversion explicitly in the code.

It is often necessary when converting a value from a higher precision or wider data type to a lower precision or narrower data type, or when changing the data type of a variable.

Common casting operators include (int), (double), and others, depending on the programming language.

Decimal Format

The Decimal Format class in Java is part of the java.text package and is used for formatting numbers with a specific pattern, typically for displaying numbers with a specified number of decimal places, thousands separators, and other formatting options. It allows you to control the appearance of numeric values in your application.

Common formatting symbols include:

1. 0 - A digit placeholder.
 2. # - A digit placeholder that is optional.
 3. , - A comma to indicate thousands separators.
 4. . - A period to indicate the decimal separator.
 5. % - Formats the number as a percentage.
- E - Formats the number in scientific notation.

3.Problem Statement

The program allows users to convert an amount from one currency to another based on a currency code input. While the code performs the currency conversion, there are several issues and areas for improvement that can be addressed:

1. ***Limited Currencies***: The code currently supports only a few currencies (Rupees, Dollar, Pound, Euro, and Kuwaiti Dinar). To make it more versatile and practical, it should ideally support a wider range of currencies.

2. ***User Experience***: The user interface is minimal, and there is room for improvement. It can be enhanced to provide a better user experience, including proper prompts, instructions, and error handling.

3. ***Decimal Precision***: The code uses a `DecimalFormat` to format the output, but it is set to "##.###." Depending on the requirements, this precision might not be sufficient. A more flexible approach to setting decimal precision could be implemented.

4. ***Currency Exchange Rates***: The code currently uses fixed exchange rates, which might not reflect the real-time exchange rates. For a more accurate and useful currency converter, it should fetch and update exchange rates from a reliable source or API.

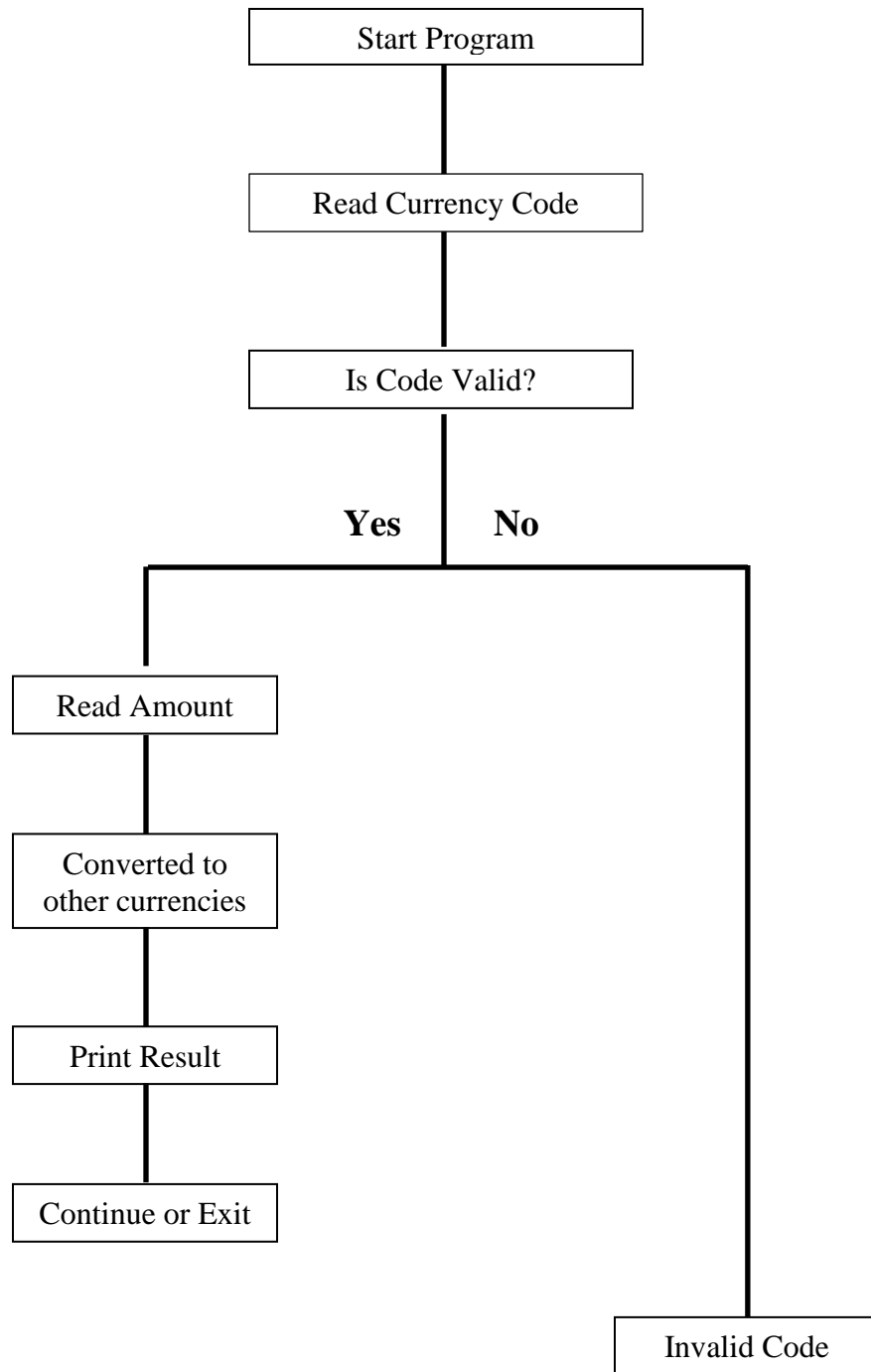
5. ***Code Organization***: The code is written in a single block without much structure. It can be organized into functions or methods for better maintainability and readability.

6. ***Input Validation***: The code lacks input validation, and it should be enhanced to handle cases where the user enters invalid or unexpected input, preventing potential errors.

7. ***Error Handling***: Proper error handling should be implemented to provide informative error messages to the user in case of issues.

8. ***Currency Symbols***: The code can be improved by adding currency symbols to the output for clarity and a more professional appearance.

4.Block Diagram



4.1 Description and Working

Step 1 : Start

Step 2 : Initialize variables: rupee, dollar, pound, euro, KWD as doubles

Step 3 : Create a DecimalFormat object f to format output

Step 4 : Create a Scanner object sc for user input

Step 5 : Display a welcome message and currency code options

Step 6 -Read the currency code (code) from the user

Step 7 : If code is 1

- Prompt for rupee amount
- Read rupee amount
- Calculate and display conversions to dollar, pound, euro, and KWD

Step 8 : Else if code is 2

- Prompt for dollar amount
- Read dollar amount
- Calculate and display conversions to rupee, pound, euro, and KWD

Step 9 : Else if code is 3

- Prompt for pound amount
- Read pound amount
- Calculate and display conversions to rupee, dollar, euro, and KWD

Step 10 : Else if code is 4

- Prompt for euro amount
- Read euro amount
- Calculate and display conversions to rupee, dollar, pound, and KWD

Step 11 : Else if code is 5

- Prompt for KWD amount
- Read KWD amount
- Calculate and display conversions to rupee, dollar, pound, and euro

Step 12 : Else

- Display "Invalid Code!"

Step 13 : End

5.Module Description

Type conversion, also known as type casting or type coercion, is the process of converting a value from one data type to another in a programming language. This is done to ensure that data is compatible and can be used in a particular context, operation, or function that expects a specific data type. Type conversions can occur implicitly or explicitly, depending on the programming language and the situation.

Module 1 : Itroduction to Object Oriented Programming

Description:

What are Data Types in Java?

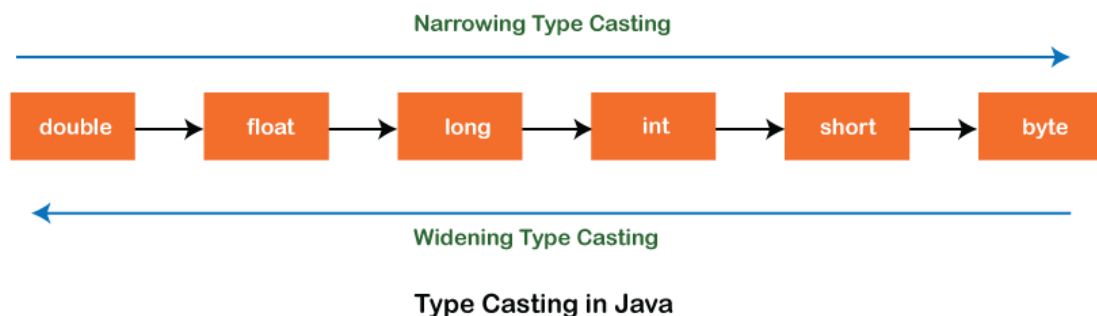
Data types in Java are of different sizes and values that can be stored in the variable that is made as per convenience and circumstances to cover up all test cases. Java has two categories in which data types are segregated

Primitive Data Type: such as boolean, char, int, short, byte, long, float, and double

Non-Primitive Data Type or Object Data type: such as String, Array, etc. Public Interface:

Type Conversion

In Java, type casting is a method or process that converts a data type into another data type in both ways manually and automatically. The automatic conversion is done by the compiler and manual conversion performed by the programmer. In this section, we will discuss type casting and its types with proper examples.



Types of type conversion:

- Implicit type conversion
- Explicit type conversion

6.Brief description of software and hardware used

In order to create a priority queue using a linked list, you'll need hardware and software. The components of the software and hardware are briefly described below:

Program:

Java programming language: To develop, compile, and execute your Java code, you'll need a Command Prompt and Notepad.

Hardware

Computer: To launch the Command Prompt and Notepad and run your code, you need a computer running a compatible operating system (Windows, macOS, Linux, etc.).

7.Code

```
import java.util.*;
import java.text.DecimalFormat;
class Currency_Converter
{
    public static void main(String[] args)
    {
        double rupee,dollar,pound,code,euro,KWD;
        DecimalFormat f = new DecimalFormat("##.###");
        Scanner sc = new Scanner(System.in);
        System.out.println("**** WelCom ****\nEnter the currency code
\n1:Rupees\n2:Dollar\n3:Pound\n4:Euro\n5:Kuwaiti dinar");
        code=sc.nextInt();
        if(code == 1)
        {
            System.out.println("Enter amount in rupees:");
            rupee = sc.nextFloat();
            dollar = rupee / 75;
            System.out.println("Dollar : "+f.format(dollar));
            pound = rupee / 101;
            System.out.println("Pound : "+f.format(pound));
            euro = rupee / 84;
            System.out.println("Euro : "+f.format(euro));
            KWD = rupee / 250;
            System.out.println("Kuwaiti dinar : "+f.format(KWD));
        }
        else if (code == 2)
        {
            System.out.println("Enter amount in dollar:");
            dollar = sc.nextFloat();
```

```

    rupee = dollar * 75;
    System.out.println("Rupees : "+f.format(rupee));
    pound = dollar * 0.72;
    System.out.println("Pound : "+f.format(pound));
    euro = dollar * 0.88;
    System.out.println("Euro : "+f.format(euro));
    KWD = dollar * 0.30;
    System.out.println("Kuwaiti dinar : "+f.format(KWD));
}
else if(code == 3)
{
    System.out.println("Enter amount in Pound:");
    pound = sc.nextFloat();
    rupee = pound * 101;
    System.out.println("Rupees : "+f.format(rupee));
    dollar = pound * 1.35;
    System.out.println("Dollar : "+f.format(dollar));
    euro = pound * 1.36;
    System.out.println("Euro : "+f.format(euro));
    KWD = pound * 0.4;
    System.out.println("Kuwaiti dinar : "+f.format(KWD));
}
else if(code == 4)
{
    System.out.println("Enter amount in Euro:");
    euro = sc.nextFloat();
    rupee = euro * 84;
    System.out.println("Rupees : "+f.format(rupee));
    dollar = euro * 1.12;
    System.out.println("Dollar : "+f.format(dollar));
}

```

```

        pound = euro * 0.73;
        System.out.println("Pound : "+f.format(pound));
        KWD = euro * 0.34;
        System.out.println("Kuwaiti dinar : "+f.format(KWD)); }
else if(code == 5){
    System.out.println("Enter amount in Kuwaiti dinar:");
    KWD = sc.nextFloat();
    rupee = KWD * 250;
    System.out.println("Rupees : "+f.format(rupee));
    dollar = KWD * 3.30;
    System.out.println("Dollar : "+f.format(dollar));
    pound = KWD * 2.5;
    System.out.println("Pound : "+f.format(pound));
    euro = KWD * 2.94;
    System.out.println("Euro : "+f.format(euro));
} else
    System.out.println("Invalid Code!");
}}

```

8.Result

```

C:\tanvi\java>java Currency_Converter.java
*** WelCome to Webeduclick Currency Converter Project ***
Enter the currency code
1:Rupees
2:Dollar
3:Pound
4:Euro
5:Kuwaiti dinar
1
Enter amount in rupees:
1000
Dollar : 13.333
Pound : 9.901
Euro : 11.905
Kuwaiti dinar : 4

```

```
C:\tanvi\java>java Currency_Converter.java
*** WelCome to Webeduclick Currency Converter Project ***
Enter the currency code
1:Rupees
2:Dollar
3:Pound
4:Euro
5:Kuwaiti dinar
2
Enter amount in dollar:
200
Rupees : 15000
Pound : 144
Euro : 176
Kuwaiti dinar : 60
```

```
C:\tanvi\java>java Currency_Converter.java
*** WelCome to Webeduclick Currency Converter Project ***
Enter the currency code
1:Rupees
2:Dollar
3:Pound
4:Euro
5:Kuwaiti dinar
3
Enter amount in Pound:
200
Rupees : 20200
Dollar : 270
Euro : 272
Kuwaiti dinar : 80
```

```
C:\tanvi\java>java Currency_Converter.java
*** WelCome to Webeduclick Currency Converter Project ***
Enter the currency code
1:Rupees
2:Dollar
3:Pound
4:Euro
5:Kuwaiti dinar
4
Enter amount in Euro:
200
Rupees : 16800
Dollar : 224
Pound : 146
Kuwaiti dinar : 68
```

8.1 Conclusion

simple currency converter program that allows users to convert an amount from one currency to another. The program takes a currency code and an amount as input and provides conversion rates for multiple currencies, including rupees, dollars, pounds, euros, and Kuwaiti dinar.

Here's a summary of how the code works:

1. The user is prompted to enter a currency code (1 for Rupees, 2 for Dollar, 3 for Pound, 4 for Euro, and 5 for Kuwaiti dinar).
2. Based on the selected currency code, the user is prompted to enter an amount in the specified currency.
3. The program calculates and displays the equivalent amount in the other supported currencies using predefined conversion rates.
4. It uses the DecimalFormat class to format the output with a specified number of decimal places.
5. The program provides an "Invalid Code" message if the user enters a code other than 1 to 5.

In conclusion, this program serves as a simple currency conversion utility, allowing users to convert an amount from one currency to another using predefined conversion rates. It demonstrates the use of conditional statements (if-else) and basic arithmetic operations for currency conversion. The code provides a practical example of user input, data manipulation, and output formatting in Java.

9.References

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