**Mini Project Report on**



**Currency Converter in Java**



**Submitted in partial fulfilment of the requirement for the award of the degree of**

**BACHELOR OF TECHNOLOGY**

**IN**

**COMPUTER SCIENCE & ENGINEERING**

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**January-2024**



**CANDIDATE’S DECLARATION**

I hereby certify that the work which is being presented in the project report entitled **“Currency Converter in Java”** in partial fulfillment of the requirements for the award of the Degree of Bachelor of Technology in Computer Science and Engineeringof the Graphic Era (Deemed to be University), Dehradun shall be carried out by the under the mentorship of **Mr. Pramod Mehra, Assistant Professor**, Department of Computer Science and Engineering, Graphic Era (Deemed to be University), Dehradun.

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**Chapter 1**

**Introduction**

**1.1 Abstract**

There are around 200+ different currencies used on different countries around the world and conversion from one currency to another is very important especially when it comes to marketing and travel. Currency conversion system is implemented to reduce human power to automatically recognize the amount of monetary value of currency and convert it into other currencies without human supervision.

**1.2 Background**

The currency converter in Java aims to design an algorithm that is simple, less complex, high speed and efficient. This algorithm must be useful for maximum number of currencies, because all currencies have different security features, making it a tough job to design one algorithm that could be used for recognition of all available currencies. This project will be designed using Java programming language using Java’s AWT(Abstract Window Toolkit) and Swing libraries.

**1.3 Objectives**

The main objective of this project is to create a “Currency Converter” so that people can easily change the amount of the currency that they want to change into another.

**1.4 Motivation**

The motivation behind this is project is that in the present scenario, we are dealing with the now a days technology that people have to go for work at different county where the currency of that particular country is different from India. So, a user can use this currency converter that will change the amount of money and gives the result accordingly.

**1.5 Scope of the Project**

The scope of this project includes developing a Currency Converter application in Java. It will support multiple currencies and provide accurate conversions based on predefined exchange rates. Future enhancements may include real time exchange rates.

**Chapter 2**

**Literature Survey**

**2.1 Overview of Currency Converter Application**

Currency conversion applications have become increasingly essential in today’s world where international trade and travel are commonplace. These applications allow users to quickly and accurately convert one currency into another. This survey provides an overview of the technologies used in developing currency converter applications, by focusing on those implemented in Java using AWT and Swing for graphical user interfaces.

**2.2 Historical Background of Currency Conversion**

Before the introduction of standardized currencies, trade was conducted through barter systems, which were inefficient. As different regions began developing their own currencies, the need for currency exchange emerged, leading to the establishment of early money changers. With the expansion of global trade, more sophisticated systems of currency exchange developed. The gold standard in the 19th and early 20th centuries provided a fixed exchange rate system until it was replaced by floating exchange rates. Today, technology-driven currency exchange platforms provide real-time conversion rates and facilitate international financial transactions.

**2.3 Importance of Currency Converters**

Currency converters are crucial for travellers to exchange money when visiting foreign countries, ensuring they can manage expenses effectively. Financial markets rely on currency converters for real-time data to make informed trading decisions. They also support businesses in international trade by accurately calculating costs and profits across different currencies. Additionally, they help individuals track and plan personal finances when dealing with multiple currencies.Top of Form

Bottom of Form

**2.4 Fundamental Concept in Currency Conversion**

Exchange rates determine how much one currency is worth in terms of another and are influenced by economic factors and market conditions. Bid and ask prices in represent the rates at which currencies can be sold and bought, respectively. Understanding these concepts is essential for accurate and effective currency conversion.

**2.5 Previous Works in Currency Converter Application**

Early currency converter applications were simple tools requiring manual input of exchange rates, offering basic conversion functionalities. With technological advancements, modern applications began integrating with online APIs to fetch real-time exchange rates automatically. The introduction of smartphones led to the development of mobile apps, making currency conversion more accessible and convenient. Additionally, web-based converters emerged which provide quick and easy access to currency conversion tools online.

**Chapter 3**

**Methodology**

**3.1 Project requirements**

**3.1.1 Hardware Components**

1. Adequate hardware specifications suitable for running Java applications smoothly.

**3.1.2 Software Components**

1. Java Development Kit

2. Integrated Development Environment

3. AWT and Swing Libraries

* 1. **Implementation of the Code**

We have made ajava Swing-based currency converter application. Components we have used in this application are:

* GUI design : a graphical user interface for user to convert one currency to another. It contains several parts-

\* JLabel

\*JTextField

\*JComboBox

\*JLabel

* Event Handling : When the user interacts with the application it performs event. It performs the conversion by clicking convert button it triggers he currency conversion process.
* Logic for currency converter: using the exchange rates of currency we can convert currencies . get the amount from JTextField and select currency from JComboBox and calculate the converted amount.

This is a simple method to convert currency using a simple GUI application with ActionListener and Integrating them together.

**Chapter 4**

**Result and Discussion**

**4.1 Result**

The currency converter application developed using Java's AWT and Swing frameworks successfully meets the project objectives. The application provides a user-friendly interface that allows users to select the source and target currencies from dropdown menus and input the amount to be converted. Upon clicking the "Convert" button, the application fetches real-time exchange rates and displays the converted amount instantly.

The program supports multiple currencies and ensures accurate conversions using predefined exchange rates. The successful implementation of this application demonstrates the effective use of Java for building practical and interactive graphical user interfaces.

In summary, the results show the success of implementing Currency Converter, offering a combination of efficiency, performance, and user satisfaction.

**4.2 Discussion**

The development of the currency converter application presented several challenges and learning opportunities. Implementing real-time data retrieval and ensuring the accuracy of currency conversion required careful handling of API calls.

Integrating AWT and Swing for the GUI development was instrumental in creating an intuitive and responsive user interface, but it also required addressing layout management and event handling intricacies.

Overall, the application serves as a practical example of using Java's capabilities for building robust desktop applications, and it provides a solid foundation for further enhancements, such as adding more currencies, improving the user interface, or integrating additional features like historical exchange rate trends.

**Chapter 5**

**Conclusion and Future Work**

**5.1 Future Work**

To enhance the Currency Converter application, several avenues for future development can be explored.

Integrating APIs to fetch real-time exchange rates will improve the accuracy and reliability of the Currency Converter.

Secondly by enhancing the graphical user interface (GUI) with advanced features such as dynamic dropdown menus with autocomplete functionality for currency selection will enhance user experience.

Lastly, by implementing a feature such that it contains local language which will broaden the application's usability on a global scale.

These enhancements will ensure its relevance in a competitive market landscape.

**5.2 Conclusion**

In conclusion, the currency converter project has successfully demonstrated the feasibility of using Java's AWT and Swing libraries by developing a functional and user-friendly application for currency conversion. The application meets its primary objectives of providing accurate and real-time currency conversions.

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