# Currency Converter - Documentation

## Introduction

The **Currency Converter** is a web-based application developed in Java to provide real-time currency conversion. This tool helps users convert amounts from one currency to another using up-to-date exchange rates. The project leverages JavaServer Pages (JSP) for dynamic content rendering, ensuring a seamless user experience.

## Features

1. **Real-Time Conversion:** Fetches live exchange rates for accurate calculations.
2. **User-Friendly Interface:** Simple and intuitive design for effortless navigation.
3. **Modular Architecture:** Maintains separation of concerns for easier development and debugging.
4. **Cross-Browser Compatibility:** Works on all major web browsers.
5. **Scalable Design:** Supports future enhancements and additional features.
6. **CI/CD Integration:** Automates testing, building, and deployment processes.

## Technology Stack

* **Frontend:**
  + HTML5
  + CSS3
  + JavaScript (Optional for advanced features)
* **Backend:**
  + Java
  + JSP (JavaServer Pages)
  + Servlets
* **Build Tool:**
  + Maven
* **Deployment Environment:**
  + Apache Tomcat
* **CI/CD Tools:**
  + Jenkins
  + Azure Pipelines

## Prerequisites

* **Java Development Kit (JDK):** Version 8 or higher
* **Apache Tomcat:** Version 9 or higher
* **Maven:** Installed and configured
* **Internet Connection:** For fetching live exchange rates

## Installation and Setup

Clone the Repository

git clone https://github.com/himanshuyadav79/CurrencyConverter.git

Navigate to the Project Directory

mvn clean install

Build the Project

mvn clean install

### Deploy to Apache Tomcat

1. Copy the generated CurrencyConverter.war file from the target directory.
2. Paste it into the webapps folder of your Apache Tomcat installation.
3. Start the Tomcat server.

### Access the Application

Open a browser and navigate to:

http://localhost:8080/CurrencyConverter

## Usage Guide

1. **Select Source and Target Currencies:** Use dropdown menus to choose currencies.
2. **Enter Amount:** Input the amount to be converted.
3. **Click Convert:** The converted amount is displayed instantly.

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CurrencyConverter/

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├── src/

│ ├── main/

│ │ ├── java/

│ │ │ ├── com.currencyconverter/ # Java Classes

│ │ │ └── util/ # Utility Functions

│ │ ├── webapp/

│ │ ├── WEB-INF/

│ │ │ └── web.xml # Deployment Descriptor

│ │ ├── index.jsp # Main JSP Page

│ │ └── assets/

│ │ └── css/

│ │ └── style.css # Stylesheet

│

├── Jenkinsfile # CI/CD Configuration for Jenkins

├── azure-pipelines.yml # CI/CD Configuration for Azure

├── pom.xml # Maven Configuration File

└── README.md # Project Overview

## CI/CD Pipeline

* **Jenkins:** Automates building, testing, and deployment.
* **Azure Pipelines:** Configured for continuous integration and delivery to streamline updates.

## Future Enhancements

* Add historical exchange rate charts.
* Support for offline conversion using cached rates.
* Integration with payment gateways for currency-related transactions.

## Contact

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