BAHRIA UNIVERSITY, (Karachi Campus)

Department of Software Engineering

PROPOSAL

Course Title: Computer Architecture and Logic Design **Course Code**:
Course Instructor: Engr. Ramsha Mashood **Class**: BSE-3(A/B)
Lab Instructor: Engr. Ramsha Mashood **Date: 10 December 24**

PROJECT TITLE:

Currency Converter

GROUP MEMBERS LIST:

Name	Enrollment
Sadaf Ashfaq	02-131232-055
Fatima Ilyas	02-131232-089
Urooj Ilyas	02-131232-107

PROJECT SCOPE:

This project focuses on building a simple currency converter in MIPS assembly language. The user will be prompted to select the currency they want to convert from and the currency they want to convert to. The conversion will be based on predefined exchange rates. The program will display the conversion result after the user inputs the amount they want to convert, and will ask if they wish to perform another conversion. This will be a console-based application, and the rates will be hardcoded within the program.

PROJECT ABSTRACT:

The Currency Converter application in MIPS assembly aims to help users convert between multiple currencies. It will support basic

conversion functionality where users can select the source and destination currencies, input the amount to be converted, and receive the result based on predefined exchange rates. The conversion will be done using simple arithmetic and multiplication, and the user will be able to perform multiple conversions in one session. This project provides a hands-on approach to understanding assembly programming concepts such as loops, conditionals, memory handling, and floating-point operations.

PROJECT FUNCTIONALITIES:

1.Currency Selection:

- Users will choose the currency they have and the currency they want to convert to from a list of predefined options (e.g., GBP, USD, JPY, etc.).

2. Amount Input and Conversion:

- The user inputs the amount they want to convert, and the program calculates the converted value based on the selected currencies and predefined exchange rates.

3. Exchange Rates:

- The program will use hardcoded conversion rates for the selected currencies. The program will use hardcoded conversion rates for the selected currencies. These rates will allow for conversions between 45 currencies.

4. Error Handling:

- The program checks if the user selects valid currencies (i.e., between 1 and 6 or more). If an invalid input is detected, the program will prompt the user to re-enter the valid choice.

5. Multiple Conversion Requests:
   - After a conversion, the program will ask the user if they wish to perform another conversion. If the answer is yes, the process repeats; otherwise, the program exits.
6. Final Output:
   - After each conversion, the program displays the conversion result and asks if the user wants to perform another conversion. At the end of the session, it will print a thank-you message along with their name and nationality.

MODULE DISTRIBUTION:

The project can be divided into the following modules:

1. *User Interface Module:*
   - *This module handles user interactions, including displaying prompts, reading user input, and showing the conversion results. The interface will be text-based, running in a console window.*
2. *Currency Selection and Validation Module:*
   - *This module validates the user's input for currency selection, ensuring that the chosen source and destination currencies are within the valid range (1 to 10).*
3. *Currency Conversion Logic Module:*
   - *This module will perform the core functionality of converting the amount. It will calculate the converted value using the hardcoded exchange rates. The calculation will involve simple arithmetic and floating-point multiplication.*
4. *Input Validation and Error Handling Module:*
   - *This module ensures that the user inputs valid data (valid currency selections and valid numerical values for*

amounts). If the user provides invalid data, it will handle the errors and prompt the user to correct their input.

5. *Control Flow Module:*
    - *This module controls the flow of the application, including handling the decision to perform another conversion or exit the program.*
6. *Task assigned among Members:*

Fatima Ilyas:

Currency Selection and Validation Module

Control Flow Module

Sadaf Ashfaq:

User Interface Module

Input Validation and Error Handling Module

Urooj Ilyas:

Currency Conversion Logic Module

Testing and Integration

- *Each member will work on 15 currencies for conversion(Total=45)*

Teacher Signature: _____

Remarks: _____

Submission Date:10 December 2024