MES COLLEGE OF ENGINEERING-KUTTIPPURAM
DEPARTMENT OF COMPUTER APPLICATIONS
20MCA246 – MAIN PROJECT

PRO FORMA FOR THE APPROVAL OF THE FINAL SEMESTER PROJECT

(Note: All entries of the pro forma of approval should be filled up with appropriate and complete information. Incomplete Pro forma of approval in any respect will be rejected.)

Project Proposal Number : _____
(Filled by the Department)

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Academic Year : 2024-2025
Year of Admission : 2023
Admission Number : 18090
Roll Number 20
Register Number : MES23MCA-2020

1. Name of the Student (in BLOCK LETTERS) : JASLANA SURAYYA C
2. Name of the Organization : _____
3. Address of the Organization : _____
   Telephone No. : _____ Company E-Mail : _____
4. Name of the External Guide : _____
   Mobile No. : _____ E-Mail : _____
5. Title of the Project : BUDGET BUDDY
6. Name of the Guide (Internal-Departmet) : DR GEEVAR C ZACHARIAS

Date : Signature of the Student:

Comments of The Project Guide

Initial Submission :
Approval Status : Approved / Not Approved Dated Signature of Guide HOD
First Review :
Second Review :
Third Review :

Comments of The Project Coordinator

Initial Submission:
First Review : Second Review: Third Review:

Dated Signature of Project Coordinator:

ABSTRACT

BUDGET BUDDY

JASLANA SURAYYA C, MES23MCA-2020, 20

Introduction

BudgetBuddy is a web-based application designed to enhance student financial management through advanced predictive analytics and automated expense tracking. The system leverages the Long Short-Term Memory (LSTM) algorithm, a powerful deep learning model, to forecast future expenses with high accuracy. By integrating historical data analysis, real-time expense tracking, and personalized financial insights, BudgetBuddy empowers students to manage their finances effectively. The application also provides administrators and parents with tools to monitor and support student spending, fostering better financial planning and sustainability.

Relevance

Effective financial management is critical for students, who often face challenges in budgeting and planning their expenses. Traditional methods of expense tracking are manual and time-consuming, while existing budgeting applications lack advanced predictive capabilities. BudgetBuddy addresses these gaps by offering a comprehensive, automated, and intelligent solution. Its relevance lies in its ability to provide students with actionable insights, proactive alerts, and personalized advice, enabling them to make informed financial decisions and avoid overspending.

ProblemDefinition

Current systems for student expense management rely on manual tracking or basic budgeting apps with limited functionality. These systems lack advanced features such as predictive analytics, personalized financial advice, and integration of multiple financial data sources. As a result, students struggle to gain a holistic view of their financial health and plan for future expenses. BudgetBuddy aims to solve these problems by introducing a web-based application that combines LSTM-based predictive analytics, automated expense tracking, and comprehensive financial insights.

Basic Functionalities

BudgetBuddy offers the following core functionalities:

1. **Automated Expense Tracking:** Students can log daily expenses, which are automatically categorized and totaled.
2. **LSTM-Based Forecasting:** The system uses the LSTM algorithm to analyze historical data and predict future expenses.
3. **Personalized Financial Advice:** Tailored recommendations help students optimize spending and

savings.

4. **Budget Alerts:** Notifications are sent when expenses approach or exceed predefined limits.
5. **Detailed Reports:** Visualizations and trend analysis provide actionable insights for better decision-making.
6. **Multi-Role Access:** Separate modules for students, parents, experts, and administrators ensure comprehensive functionality and support.

Tools/Platform, Hardware and Software Requirements

Frontend: HTML, CSS, Bootstrap, JavaScript.

Backend: Python-Django.

Database: MySQL.

Predictive Model:

- **LSTM Algorithm:** Used for expense forecasting.
- **Libraries:** TensorFlow/Keras, NumPy, Pandas, Matplotlib, Scikit-learn.

IDE: PyCharm Professional.

Web Browsers: Chrome, Edge, etc.