**Real-Time / Field-Based Research Project**

**Guidelines to the Students for Stage-2 Evaluation and submission of Project Report:**

1. All the students in the batch must be present during the presentation.
2. The presentation will be evaluated for **50 Marks (per student).**
3. The evaluation shall be based on
4. Implementation & Team Work (20 Marks)
5. Presentation (15 Marks)
6. Documentation (15 Marks)
7. The students should be in **formal dressing** for the presentation.
8. The Project execution & report should be shown to the respective guide prior to the final presentation.
9. The **Project execution** status along with the **Project Report (duly signed by the guide & HoD)** should be submitted to RTFP coordinators on **21.04.2025** mandatorily.
10. The students are informed to submit a brief report of minimum 25 pages.
11. The students are instructed to show a rough copy of the document and get it approved from their respective guides before getting it binded (**Spiral binding to be done).**
12. The cover color for Spiral binding is

CSE (DS) – Sky blue, **(RTFP course code is 22DT284)**

**ORGANIZATION OF THE REPORT**

* Title page
* Certificate
* Declaration
* Acknowledgement
* Table of Contents
* Abstract
* List of tables
* List of figures
* List of abbreviations/symbols
* Chapters
* Conclusions
* References
* Page No’s should be in the bottom center of the page in Times New Roman and 12 font size
* All the Page Headings must be in Times New Roman Bold and font size 16
* Side Headings should be in Times New Roman Bold, font size 14
* Side Sub-Headings must be in Times New Roman Bold , font size 12
* Body text content font size is 12 in Times New Roman with 1.5 lines Paragraph spacing.
* The font style of the college name on the title page & certificate page should be CG OMEGA only.

The front pages format to be included in the report are herewith attached for your reference

**A REAL-TIME / FIELD-BASED RESEARCH PROJECT REPORT ON**

**Exploratory Analysis of Geolocational Data**

*in the partial fulfillment of the requirements for the award of the degree of*

**BACHELOR OF TECHNOLOGY**

in

**COMPUTER SCIENCE AND ENGINEERING (DATA SCIENCE)**

**Submitted by**

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**DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING (DATA SCIENCE)**

**CVR COLLEGE OF ENGINEERING**

**(*An Autonomous institution, NAAC Accredited and Affiliated to JNTUH, Hyderabad*)**

Vastunagar, Mangalpalli (V), Ibrahimpatnam (M),  
Rangareddy (D), Telangana- 501 510

**APRIL 2025**

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Vastunagar, Mangalpalli (V), Ibrahimpatnam (M),  
Rangareddy (D), Telangana- 501 510

**COMPUTER SCIENCE AND ENGINEERING (DATA SCIENCE)**

****

**CERTIFICATE**

This is to certify that the Real-Time / Field-Based Research Project report entitled **“ A Comprehensive SIP , SWP and EMI Calculator Platform ”** Bonafide record of work carried out by **M.ABHILASH (23B81A7201), T.ABHIRAM (23B81A7202), M.TANUJ (23B81A7227)** and **K.VINAY KUMAR(23B81A7260)** submitted to **Mrs. S.Vineela Krishna, Sr. Assistant Professor** for the requirement of the award of **Bachelor of Technology** in **Department of Computer Science and Engineering (Data Science)** to the CVR College of Engineering, affiliated to Jawaharlal Nehru Technological University, Hyderabad during the year 2024-2025.

**Project Guide Project Coordinator**

Mrs. S.Vineela Krishna S. Vineela Krishna,

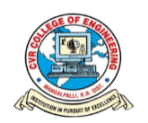
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**DECLARATION**

We hereby declare that the Real-Time / Field-Based Research Project report entitled **“A Comprehensive SIP ,SWP and EMI Calculator Platform”** is an original work done and submitted to Computer Science and Engineering(Data Science) Department, CVR College of Engineering, affiliated to Jawaharlal Nehru Technological University Hyderabad in partial fulfilment for the requirement of the award of Bachelor of Technology in Computer Science and Information Technology and it is a record of bonafide project work carried out by us under the guidance of **Mrs. S.Vineela Krishna,** Sr.Assistant Professor, Department of CSE (Data Science).

We further declare that the work reported in this project has not been submitted, either in part or in full, for the award of any other degree in this Institute or any other Institute or University.

Signature of the Student

M.ABHILASH

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T.ABHIRAM

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**SYMBOLS**

Symbols

A Pre-exponential constant

Ad Droplet cross-sectional area, m2

As Droplet surface area, m2

A0 Nozzle cross sectional area. m2

Cp Specific heat, J/kg-K

Cam Reaction progress variable

C Coefficient of discharge of nozzle

Cd Reference specific heat at temperature T0

**ABBREVIATIONS**

ATDC After Top Dead Center

BDC Bottom Dead Center

BTDC Before Top Dead Center

CA Crank Angle

CAD Computer Aided Design

CCS Combined Charging System

CFD Computational Fluid Dynamics

CO Carbon Monoxide

CTC Characteristic–Time Combustion

**ABSTRACT**

The website is a user-friendly platform designed to simplify financial planning by offering SIP (Systematic Investment Plan), SWP (Systematic Withdrawal Plan), and EMI (Equated Monthly Installment) calculators. Users can easily estimate future investment values, plan systematic withdrawals, and calculate monthly loan repayments by entering details such as principal, interest rate, and tenure. The platform provides instant, accurate results along with interactive charts and graphs for better visualization and understanding. Built with a frontend-only approach using HTML, CSS, and JavaScript, the website ensures fast performance, mobile responsiveness, and easy accessibility without requiring backend support. Future scalability options include features like user accounts and data storage to cater to more advanced needs. By addressing essential financial calculations in an intuitive and visually appealing manner, the website empowers individuals to make informed financial decisions and bridges the gap between financial literacy and effective planning.

**CHAPTER 1**

**INTRODUCTION**

In today’s fast-paced financial environment, individuals need accessible and reliable tools to manage their investments and loan repayments with confidence. To address this need, our project titled **“A Comprehensive SIP, SWP, and EMI Calculator Platform”** provides an all-in-one solution designed to help users plan, calculate, and understand their financial commitments with ease.

The platform features a collection of intuitive calculators, including those for **Systematic Investment Plan (SIP)**, **Systematic Withdrawal Plan (SWP)**, and **Equated Monthly Installments (EMIs)** for various loan types: **Personal Loan**, **Home Loan**, **Car Loan**, and **Gold Loan**. These tools are aimed at improving financial literacy and empowering users to make informed and well-planned financial decisions.

Developed entirely using **HTML, CSS, and JavaScript**, the platform is lightweight, responsive, and runs fully in the browser. It requires no backend or server-side processing, making it fast, accessible, and easy to use across devices. The project emphasizes simplicity, accuracy, and usability, making financial planning more approachable for everyone.

**1.1 MOTIVATION:**

Many people find financial planning confusing and often lack access to simple tools for managing investments and loans. This project was motivated by the need to bridge that gap by offering a straightforward, user-friendly platform for financial calculations.

By providing easy-to-use SIP, SWP, and EMI calculators (covering Personal, Home, Car, and Gold Loans), the goal is to help users make informed decisions without relying on complex financial knowledge or expert help. Built entirely with HTML, CSS, and JavaScript, the platform is lightweight, fast, and accessible to everyone, promoting financial awareness and independence.

It encourages users to explore and understand their finances interactively. Ultimately, the project aims to simplify financial planning and make it approachable for users of all backgrounds.

**1.2 PROBLEM STATEMENT:**

Despite the growing need for personal financial management, many individuals lack the tools or knowledge to accurately plan their investments and loan repayments. Existing financial calculators are often fragmented, overly technical, or difficult for the average user to understand. There is a clear need for a unified, easy-to-use platform that offers accurate and accessible financial planning tools. This project addresses that need by providing a browser-based solution that simplifies complex calculations for SIP, SWP, and EMIs—making financial decision-making easier and more approachable for everyone.

**1.3 PROJECT OBJECTIVES:**

The main objective of this project is to develop a user-friendly, browser-based platform that enables individuals to make informed financial decisions with ease. The specific goals include:

* To provide accurate and easy-to-use calculators for:
  + **Systematic Investment Plan (SIP)**
  + **Systematic Withdrawal Plan (SWP)**
  + **Equated Monthly Installments (EMI)** for **Personal**, **Home**, **Car**, and **Gold Loans**
* To simplify complex financial calculations for users without requiring expert knowledge.
* To create a responsive and intuitive user interface using **HTML, CSS, and JavaScript**.
* To promote financial awareness and self-reliance through interactive tools.
* To ensure complete offline functionality with a fully **client-side** implementation (no backend required).

**1.4 PROJECT REPORT ORGANIZATION:**

This project report is structured into the following chapters to present a comprehensive view of the development and outcomes:

1. **Introduction:** Introduces the project, its objectives, motivation, and the problem it aims to solve.
2. **Literature Survey:** Reviews existing tools, techniques, and related work in the field of financial calculators and web-based applications.
3. **Software and Hardware Requirements:** Specifies the tools, technologies, and system configurations needed for development and execution.
4. **System Design:** Describes the architecture, data flow, and user interface layout of the application.
5. **Implementation and Testing:** Explains how the system was developed using HTML, CSS, and JavaScript, along with the methods used for testing its accuracy and performance.
6. **Conclusion:** Summarizes the project outcomes, key learnings, and the impact of the developed platform.
7. **References:** Lists the sources, documentation, and tools referred to during the course of the project.

**CHAPTER 2**

**LITERATURE SURVEY**

Financial calculators have become essential tools for individuals seeking to manage loans and investments effectively. A variety of online platforms and mobile applications offer features like SIP, SWP, and EMI calculators. However, most existing solutions are either fragmented, requiring users to visit multiple pages for different calculations, or are part of larger financial services that may be overwhelming for users seeking only basic functionalities.

Web-based financial tools such as those offered by major banks (e.g., SBI, HDFC) provide EMI and SIP calculators, but they often lack flexibility, transparency in calculations, or support for different loan types in one place. Additionally, many calculators rely on server-side technologies, limiting their accessibility and speed.

Several open-source and academic projects focus on standalone EMI or SIP calculators, but very few integrate multiple financial planning tools into a single, lightweight, and purely client-side platform. This gap presents an opportunity to develop a unified solution using front-end technologies that can run efficiently in any modern browser without requiring internet access after loading.

By using **HTML, CSS, and JavaScript**, this project aims to deliver an accessible, responsive, and easy-to-use platform that combines **SIP**, **SWP**, and **EMI calculators** for **Personal**, **Home**, **Car**, and **Gold Loans**—addressing the limitations of existing tools and making financial planning more approachable for everyday users.

**2.1 Existing Works**

Several existing tools and platforms offer financial calculators, particularly for SIP and EMI calculations. Notable examples include:

* **Bank Websites (e.g., SBI, HDFC, ICICI) :** These platforms provide online EMI and SIP calculators specific to their products. While they offer accurate calculations, they are often limited in scope, lack customizability, and are tailored toward promoting bank services rather than offering general financial guidance.
* **Third-party Financial Portals (e.g., Groww, Policybazaar, Moneycontrol):**These websites offer a wider variety of financial tools, including SIP and SWP calculators. However, they often display advertisements, redirect users to investment products, and may not offer a unified or ad-free experience.
* **Mobile Apps (e.g., ET Money, Kuvera):**These apps include comprehensive financial planning tools, but they require installation and user accounts. Their complexity may not appeal to users seeking quick and simple financial calculations.
* **Open-source Tools & GitHub Projects:**A few open-source repositories offer basic HTML/JavaScript-based calculators, but they usually focus on only one financial product (like an EMI or SIP calculator), and often lack design, responsiveness, or user interface polish.

**2.2 Limitations of Existing Works**

While several financial calculators are available across banking websites, mobile apps, and third-party platforms, they come with certain limitations that affect usability, accessibility, and user experience. These limitations include:

* **Fragmentation of Tools :** Most platforms offer separate calculators for SIP, SWP, and EMIs, often spread across different pages or apps. Users looking for multiple financial tools must navigate through various sources.
* **Lack of Customization :** Many calculators are rigid, offering limited input flexibility. Users may not be able to modify interest rates, tenure limits, or calculation methods based on their specific needs.
* **Advertisement and Distractions :** Third-party financial websites frequently include ads, pop-ups, and promotions, which can distract users and slow down the experience.
* **Complex User Interfaces :** Some platforms and mobile apps are overloaded with features, making them less approachable for users seeking only basic and quick financial calculations.
* **Lack of Integration :** Few platforms combine SIP, SWP, and different EMI calculators (like personal, home, car, and gold loans) into one seamless interface.

**CHAPTER 3**

**SOFTWARE & HARDWARE SPECIFICATION**

**Software Requirements**

* **Operating System:**  
  Any modern OS (Windows, macOS, Linux)
* **Web Browser:**  
  Latest version of Chrome, Firefox, Edge.
* **Development Tools:**
  + Code Editor:

Visual Studio Code or any preferred HTML/CSS/JS editor.

* + Web Browser Developer Tools (for testing and debugging).
* **Technologies Used:**
  + **HTML5** – For structuring the web pages
  + **CSS3**  – For styling and responsive design
  + **JavaScript** – For functionality and calculations
  + **Chart.js** – For graphical data representation

**Hardware Requirements**

 **Processor:**  
Minimum: Dual-core 1.5 GHz or higher  
Recommended: Intel i3/i5 or equivalent

 **RAM:**  
Minimum: 2 GB  
Recommended: 4 GB or more

 **Storage:**  
Approximately 100 MB (for project files and browser cache)

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