Strategic Productivity Analytic And Reporting Kit

A PROJECT REPORT

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Under the guidance of,

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PRESIDENCY UNIVERSITY

SCHOOL OF COMPUTER SCIENCE & ENGINEERING

CERTIFICATE

This is to certify that the Project report **"STRATEGIC PRODUCTIVITY ANALYTICS AND REPORTING KIT "** being submitted by "**Anjali Kumari, Aishwarya, Mark Avinash**" bearing roll number(s) "20201CSE0686, 20201CSE0713, 20201CSE0714" in partial fulfilment of requirement for the award of degree of **Bachelor of Technology in Computer Science and Engineering** is a bonafide work carried out under my supervision.

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DECLARATION

We hereby declare that the work, which is being presented in the project report entitled "**STRATEGIC PRODUCTIVITY ANALYTIC AND REPORTING KIT "** in partial fulfillment for the award of Degree of **Bachelor of Technology** in **Computer Science and Engineering**, is a record of our own investigations carried under the guidance of **DR HASAN HUSSAIN, PROFESSOR, School of Computer Science & Engineering , Presidency University, Bengaluru.**

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ABSTRACT

This research introduces “SPARK” Strategic Productivity Analytic and Reporting Kit, designed to streamline the gathering of productivity data from remote sites for various business entities. SPARK aims to alleviate the burden of productivity data entry and analysis by consolidating these tasks into a centralized input point. The tool not only addresses the challenge of data entry workload but also targets the reduction of data loss and time associated with entering productivity data. Tailored for organizations operating in developing areas, SPARK relies on internet connectivity for its functionality. The paper provides insights into the current status of the tool's development, emphasizing its potential to significantly enhance efficiency and data accuracy for businesses in need of remote productivity monitoring. A user-friendly interface ensures ease of use for employees, promoting seamless reporting and recording of time allocated to projects. The abstract further explores the tool's expected benefits, such as increased accuracy in productivity data, minimized data entry time, and enhanced analysis capabilities. Additionally, the paper discusses the general implementation requirements for SPARK, offering a versatile framework for organizations to adapt the tool to their specific needs.

In conclusion, SPARK emerges as a promising solution for organizations seeking a robust and user-friendly platform to manage time and productivity data remotely. As the paper delves into the software implementation prospects and general requirements, it lays the foundation for diverse options for organizations to effectively integrate SPARK into their operational workflows.

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CHAPTER-1
INTRODUCTION

1.1 IN GENERAL:

In today's fast-paced digital landscape, optimizing time and productivity are paramount for organizations striving to maintain a competitive edge. The Time and Productivity Analysis Web Development Project is an innovative initiative aimed at harnessing the power of technology to enhance efficiency, streamline processes, and empower businesses to make data-driven decisions.This project centers around the creation of a dynamic web application that will serve as a comprehensive tool for organizations to measure, analyze, and improve their time management and productivity. It will not only provide real-time insights into how time is allocated across various tasks but also offer valuable performance metrics to help teams and individuals achieve their goals more effectively.With the ever-increasing demands on businesses and the challenges posed by remote work, understanding and optimizing time usage has become a critical factor in achieving success. This web development project is designed to address these challenges and provide a user-friendly platform for organizations to unlock their full potential.Throughout this project, we will explore the intricacies of web development, data analysis, and user experience design to deliver a solution that empowers businesses to make informed decisions, maximize productivity, and thrive in a rapidly evolving digital landscape. Join us on this journey as we embark on a mission to revolutionize the way organizations perceive and manage time, ultimately driving success and innovation.

In the dynamic landscape of modern organizations, efficient resource utilization is pivotal for success. With an increasing reliance on technology and diverse tasks, understanding how time is allocated across various activities becomes essential for optimizing productivity. The chosen problem statement focuses on the development of a comprehensive tool designed to capture, calculate, and analyze the time spent by resources on specific activities, such as documentation, coding, SQL, and internet usage. This tool aims to address a critical need in organizational management: the ability to discern where resources are investing their time and, consequently, where the organization may be losing valuable productivity.

As businesses continue to evolve, the complexity of tasks assigned to resources has grown

exponentially. Traditional time-tracking methods often fall short in providing a nuanced understanding of how time is distributed among diverse activities crucial to an organization's operations. The proposed tool recognizes the intricacies of contemporary work environments, acknowledging that resource time is not uniformly spent across all tasks.
Instead, activities such as documentation, coding, database management (SQL), and internet usage demand The central challenge is to develop a tool that not only captures and stores this nuanced data but goes a step further by generating insightful analytics. By doing so, the tool provides organizational leaders with a powerful means to comprehend resource allocation patterns, identify potential areas of inefficiency, and ultimately strategize on how to enhance overall productivity.

In this context, the issue at hand delves into the expansive realm of time and resource management, underscoring the necessity for adaptable tools that can accommodate the diverse nature of tasks within contemporary workplaces. Exploring the intricacies of resource time allocation enables organizations to make informed decisions, optimizing operations, enhancing productivity, and ensuring the effective utilization of valuable human capital. The subsequent sections of this research will delve into the creation and implementation of such a tool, contributing to the ongoing discourse on resource management in modern organizational setting.Concerning productivity analysis, it involves the measurement, interpretation, and evaluation of measurement results (Rao et al., 2005). Before the computer era, productivity analysis was manual, but in the 20th century, companies increasingly adopted computerized techniques, mainly for measurement. Recently, computerized techniques for interpretation and evaluation functions have also been proposed, predominantly in the form of expert systems (Rao et al., 2005) and decision support systems.This paper primarily focuses on capturing and analyzing productivity data in the measurement function of productivity analysis. Currently, spreadsheet technology is prevalent for productivity measurement.

CHAPTER-2
LITERATURE SURVEY

2.1 LITERATURE SURVEY:-

- Manual Time Tracking:
    - Advantages: Simple and low-cost. Individuals manually record their activities.
    - Limitations: Prone to inaccuracies due to human error. Tedious for users, leading to potential under reporting or incomplete data.
- Time Tracking Software:
    - Advantages: Automates the process, reducing human error. Provides real-time tracking and reporting.
    - Limitations: Some tools lack granularity, offering only broad categorizations. Users may find it intrusive or may forget to log hours accurately.
- Project Management Tools with Time Tracking:
    - Advantages: Integrates time tracking with project management, offering a holistic view. Can generate reports based on tasks and projects.
    - Limitations: Limited in capturing non-project-related activities. Users may not diligently update task statuses, leading to incomplete data.
- Biometric Time and Attendance Systems:
    - Advantages: Ensures attendance and tracks time automatically.
    - Limitations: Primarily focuses on presence rather than detailed task-specific time tracking. Does not capture nuances of different activities.
- Workplace Analytics Platforms:
    - Advantages: Offers advanced analytics on employee behavior and work patterns.
    - Limitations: May require significant integration efforts. Often emphasizes collaboration patterns over individual task-specific time tracking.
- Time Management Apps:
    - Advantages: Encourages users to allocate time deliberately to tasks.
    - Limitations: Relies heavily on user discipline. May not capture passive activities or distractions.
- Gamified Productivity Apps:
    - Advantages: Uses gamification to encourage focused work.

- Limitations: Primarily focused on motivation rather than precise time tracking. Users may prioritize the game element over accurate reporting.

- Block chain-Based Time Tracking:
  - Advantages: Provides a tamper-resistant and transparent ledger for time records.
  - Limitations: Complex implementation, limited adoption. May not address the user-friendliness needed for widespread organizational use.

2.2 BASED ON RESEARCH PAPERS:

- "Productivity and Quality Management in the Software Development Process" (2006)
  - Advantages:
    - Provides insights into the relationship between productivity and quality in software development.
    - Offers a holistic view of management practices that impact both productivity and quality.
  - Limitations:
    - Focuses on software development without specific attention to time tracking.
- "Time-Tracking Tools for Increasing Productivity in Software Development" (2013)
  - Advantages:
    - Directly addresses the use of time-tracking tools to enhance productivity in software development.
    - Presents real-world cases where time tracking positively influenced outcomes.
  - Limitations:
    - May lack a broader perspective on time management beyond software development.
- "Time Management and Productivity Tools for Knowledge Workers" (2007)
  - Advantages:
    - Explores tools applicable to knowledge workers, relevant to tasks.
    - Highlights the importance of time management for knowledge-

intensive roles.

- Limitations:
  - May not delve deeply into industry-specific challenges, such as software development.

- "A Review of Time Management Literature" (2013)
  - Advantages:
    - Provides a comprehensive overview of time management literature across various domains.
    - Offers a theoretical foundation for understanding time management practices.
  - Limitations:
    - Generalized approach; lacks specificity to software development or productivity in a corporate setting.
- "A Study of Web Usage for Improving Web Productivity" (2009)
  - Advantages:
    - Addresses web usage and productivity, potentially relevant for understanding internet-related activities.
    - Offers insights into optimizing web-based tasks.
  - Limitations:
    - May not provide a comprehensive analysis of overall time allocation.

CHAPTER-3
RESEARCH GAPS OF EXISTING METHODS

3.1 Existing System:-

The paper titled "Effective Time Organization in Web-Based Work Environments," authored by Norbert Jesse and Volker Wulf, was presented in the Proceedings of the 2004 ACM Conference on Computer Supported Cooperative Work. Published in 2004, this study delves into strategies for organizing time efficiently in web-based work settings.

In the Journal of Systems and Software in 2006, Robert Balzer and Thomas Chesney contributed to the field with their work on "Optimizing Productivity and Quality Management in the Software Development Process." This research explores methods for improving productivity and quality management within the software development process.

Brian Fitzgerald and Klaas-Jan Stol made a noteworthy contribution in 2013 with their paper "Enhancing Software Development Productivity through Time-Tracking Tools," published in IEEE Software. The authors investigate how time-tracking tools can be leveraged to improve productivity in software development.

The paper titled "Effective Time Management Strategies and Productivity Tools for Knowledge Workers" by Richard Watson and Pierre Berthon, published in the Journal of Knowledge Management in 2007, examines strategies and tools aimed at enhancing productivity among knowledge workers.

David Maier and Megan Hadley, in their 2013 publication in Personnel Psychology titled "A Comprehensive Review of Literature on Time Management," provide an in-depth review of existing literature on time management.

In 2012, Marko Vukovic and Vladimir Devedzic explored factors influencing web developer productivity in their paper "Exploring Factors Impacting Web Developer Productivity: An Empirical Analysis," presented at the IEEE/RSJ International

Conference on Robots and Systems.

Honglu Du and Shu-Ching Chen's 2009 paper, "Utilizing Web Usage for Enhancing Productivity on the Internet," published in the International Journal of Web Services Research, investigates the impact of web usage on productivity enhancement.

The paper "Analyzing Time Management and Productivity in Agile Software Development" by Ahmad E. Hassan and Ying Zou, published in Empirical Software Engineering in 2009, delves into the specifics of time management and productivity in the context of agile software development.

Keith Swenson and Mandy Huth, in their 2011 publication in the Journal of the Medical Library Association, explore "Web-Based Tools and Applications for Augmenting Research Productivity," providing insights into tools and applications designed to enhance research productivity.

Sherrie Z. Wang and Min Yan contributed to the discourse on task management software in their 2017 paper, "Understanding the Influence of Task Management Software on Knowledge Workers' Productivity," published in Information Systems Management.

CHAPTER-4
PROPOSED MOTHODOLOGY

4.1 Hardware requirement:-

- Local Machine:
  - Utilize a personal computer or workstation as the local development environment.
  - Ensure sufficient processing power, memory, and storage for smooth development and testing.

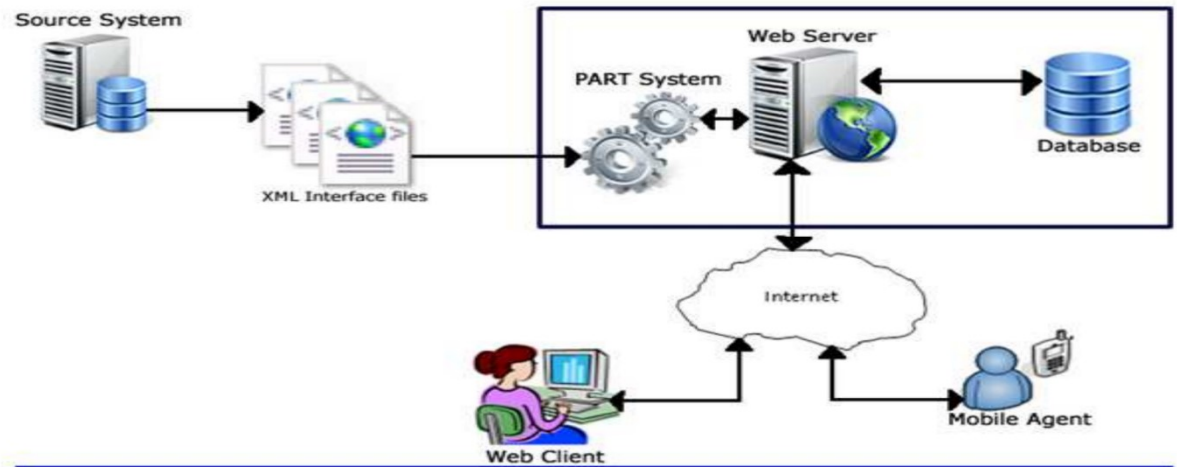


Fig-1(proposed method)

4.2 Software requirement specification:-

- WAMPP v3.3.0:
  - Set up WAMPP as the local web server to provide a pre-configured environment with Apache as the web server, MySQL as the database server, and PHP for server-side scripting.
  - Configure WAMPP to support PHP language execution and MySQL database operations.
- Programming Languages:
  - Utilize PHP as the primary server-side scripting language for building dynamic web pages.

  - Employ HTML for structuring web content.
  - Apply CSS for styling and layout enhancements.
  - Incorporate JavaScript for client-side scripting.
- Front-End Frameworks:
  - Implement Bootstrap for responsive and mobile-first design.
  - Utilize jQuery for simplified and efficient JavaScript code.
  - Integrate Ajax for asynchronous communication with the server, enhancing user experience.
- AdminLTE Template:
  - Utilize the AdminLTE template for the administration dashboard.
  - Leverage the template's pre-built components and styles for a professional and user-friendly admin interface.
- Database Management:
  - Use MySQL as the relational database management system.
  - Develop the database schema to store time tracking data, user information, and other relevant details.
- Security Measures:
  - Implement secure coding practices to prevent common vulnerabilities (e.g., SQL injection, cross-site scripting).
  - Utilize password hashing for user authentication.
  - Ensure proper validation and sanitation of user inputs.
- Version Control:
  - Use Git for version control, allowing for effective collaboration and codebase management.
  - Host the project on platforms like GitHub or GitLab for version tracking and collaboration.
- Testing:
  - Employ PHP Unit for unit testing PHP code.
  - Utilize browser developer tools and testing frameworks for front-end testing.
  - Perform end-to-end testing to ensure the proper functioning of the entire application.
- Documentation:
  - Maintain comprehensive documentation for code, database schema, and

project structure.

- Include installation guides and usage instructions for developers and administrators.

- Continuous Integration:
  - Explore continuous integration tools (e.g., Jenkins) for automated testing and deployment processes.
  - Implement CI/CD pipelines to streamline development workflows.

4.3 Planning and Scheduling:-

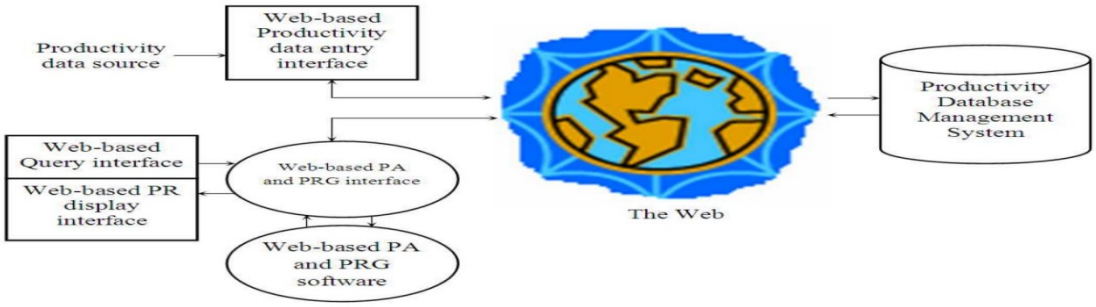


Fig 2(Planing and scheduling)

1. Requirements Analysis:

- Objective: Understand the functional and non-functional requirements of the web application.
- Activities:
  - Conduct stakeholder interviews to gather user expectations and preferences.
  - Document feature requirements, user stories, and use cases.

2. System Architecture Design:

- Objective: Define the overall structure and components of the system.
- Activities:
  - Identify and define the major modules (e.g., time tracking, analytics, user management).

- Design the system architecture, specifying the interaction between components.

3. Database Design:

- Objective: Define the database schema and relationships to store and retrieve data efficiently.
- Activities:
  - Identify entities (e.g., users, tasks) and their attributes.

4. User Interface (UI) Design:

- Objective: Design an intuitive and user-friendly interface.
- Activities:
  - Create wire frames and lockups to visualize the layout and structure.
  - Design UI elements using HTML, CSS, and Bootstrap.
  - Ensure responsiveness for various devices and screen sizes.

5. Back-end Development:

- Objective: Implement server-side logic and functionality.
- Activities:
  - Write server-side scripts using PHP for handling requests and responses.

6. Front-end Development:

- Objective: Implement client-side functionality and user interactions.
- Activities:
  - Write HTML, CSS, and JavaScript code for creating dynamic and responsive web pages.
  - Utilize Bootstrap for styling and layout consistency.
  - Integrate jQuery for simplified DOM manipulation and Ajax for asynchronous data loading.

7. Integration of AdminLTE Template:

- Objective: Incorporate the AdminLTE template for a polished admin dashboard.
- Activities:
  - Integrate the AdminLTE template into the UI design.

- Customize and extend the template to meet the specific needs of the application.

8. Security Implementation:

- Objective: Ensure the security of the application against common vulnerabilities.
- Activities:
  - Implement secure coding practices to prevent SQL injection, cross-site scripting, etc.
  - Utilize encryption for sensitive data, and implement secure user authentication.

9. Testing:

- Objective: Verify the functionality and identify and rectify defects.
- Activities:
  - Conduct unit testing for individual components.
  - Perform integration testing to ensure proper interaction between modules.
  - Execute end-to-end testing to simulate real-world usage scenarios.

10. Documentation:

- Objective: Provide comprehensive documentation for developers and administrators.
- Activities:
  - Create documentation for code, APIs, and database schema.
  - Develop user guides and installation instructions..

11. Deployment:

- Objective: Release the application for real-world usage.
- Activities:
  - Set up the application on a production server or cloud platform.

CHAPTER-5
OBJECTIVES

5.1 General objective:-

1. Time Tracking: Users should be able to easily record and categorize their activities, including work tasks, personal projects, and leisure time.

2. Productivity Analysis: The system should generate insightful reports and visualizations to help users understand their time allocation, identify time-wasting activities, and improve productivity.

3. Goal Setting: Users should be able to set goals and milestones, track their progress, and receive notifications to stay on track.

4. Integration: The program should seamlessly integrate with calendars, to-do lists, and other productivity tools for a comprehensive time management experience.

5. User-Friendly Interface: The web application should have an intuitive and user-friendly interface that makes it accessible to a wide range of users.

6. Privacy and Security: Ensuring the confidentiality of user data and implementing robust security measures to protect user information is paramount.

7. Scalability: The system should be designed with scalability in mind, allowing for future updates and enhancements.

8. User Engagement: Encourage user engagement through gamification, reminders, and personalized recommendations.

9. Feedback Mechanism: Implement a feedback system to gather user input and continuously improve the application.

10. Performance Optimization: Ensure the web application is responsive and performs

efficiently, even with a large user base.

5.2 Objective with specification:

- Identify and Mitigate Time Inefficiencies:
    - Objective: Develop algorithms and features within the web application that can analyze user activity data to recognize patterns of inefficiency. Implement a system for providing real-time feedback and suggestions to users on how to optimize their time within processes and workflows.

- Optimize Resource Allocation:
    - Objective: Create a resource allocation module within the web application that tracks and analyzes how time and resources are currently distributed across tasks or projects. Generate reports and visualizations to help organizations make informed decisions on redistributing resources for optimal utilization.

- Enhance Task Management Functionality:
    - Objective: Expand the task management capabilities of the application to allow users to create, assign, and track individual tasks within each project. Enable users to set task priorities, due dates, and dependencies, facilitating a more organized and efficient workflow.

- Implement Robust User Authentication and Access Control:
    - Objective: Develop a secure user authentication system with roles such as admin, manager, and team member. Ensure that only authorized individuals can access and modify project data. Implement encryption and other security measures to safeguard sensitive information.

- Automate Notifications and Alerts:
    - Objective: Integrate a notification and alert system within the web application to automate the communication of important information. Enable users to receive timely notifications about upcoming deadlines, task assignments, or project milestones. Implement customizable notification settings to cater to

individual user preferences.

- Ensure User-Friendly Interface and Accessibility:
    - Rationale: Acknowledge the importance of user acceptance and accessibility in the success of any productivity tool.
    - Objective: Develop an intuitive and user-friendly interface for the web application, ensuring accessibility for both technical and non-technical users, fostering widespread adoption within the organization.

CHAPTER-6
SYSTEM DESIGN & IMPLEMENTATION

6.1 Computational Requirements:-

The computational procedures associated with various productivity analysis and reporting tasks are anticipated to be handled by SPARK. Additionally, the tool is expected to facilitate the execution of basic computations, such as aggregating productivity values per clerk or department for a specific task, organization, and timeframe. In this context, the term 'clerk' is used to encompass any organizational members expected to utilize SPARK. Crucially, the tool should incorporate procedures for determining diverse metrics essential for reporting on the organization's productivity.

Consequently, SPARK is designed to be easily modifiable to accommodate new computational procedures for estimating these metrics. To support this feature, the system enables the definition of an arbitrary number of varying functions representing different metrics and facilitates an efficient way to incorporate new functions with minimal time and cost during modification. Figure 3 provides an abstract representation of the computational structure for SPARK. In this figure, a mapping component defines various options based on the type of input productivity data, mapping it to one of n Productivity Analysis (PA) modules. Each PA module implements a function for computing a specific productivity metric. Following our proposed development approach, the PA modules should exist as separate objects within a Web-based Productivity Analysis component.

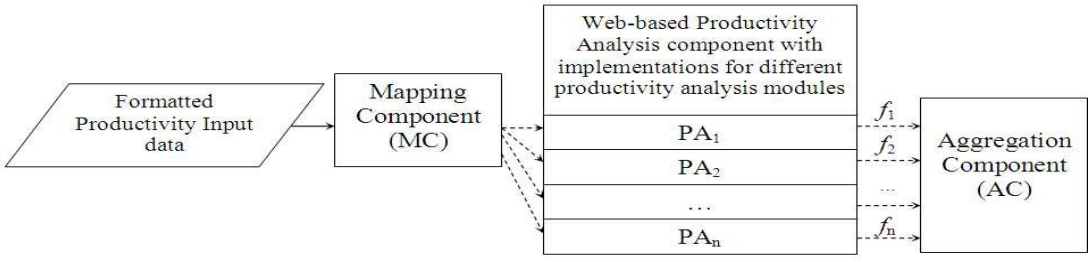


Fig 3 Computational Requirements

The Aggregation Component (AC) within Figure 3 implements a function to estimate

an output based on parameters fi (i = 1…n) for PA metrics provided by any of the PAi components. This function may involve a summation of the multiples of productivity metrics and their parameters to estimate a given productivity output.

6.2 Productivity reporting Requirements

The proposed SPARK system aims to translate outcomes from the Productivity Analysis component into actionable knowledge about an organization's status. This includes the identification of trends, patterns, and predictions. Users should be able to access this information through a Web-based Output Interface. The system's capability to make this information accessible to other sites within the organization is deemed advantageous. Figure 4 depicts the output structure for the envisioned SPARK system.

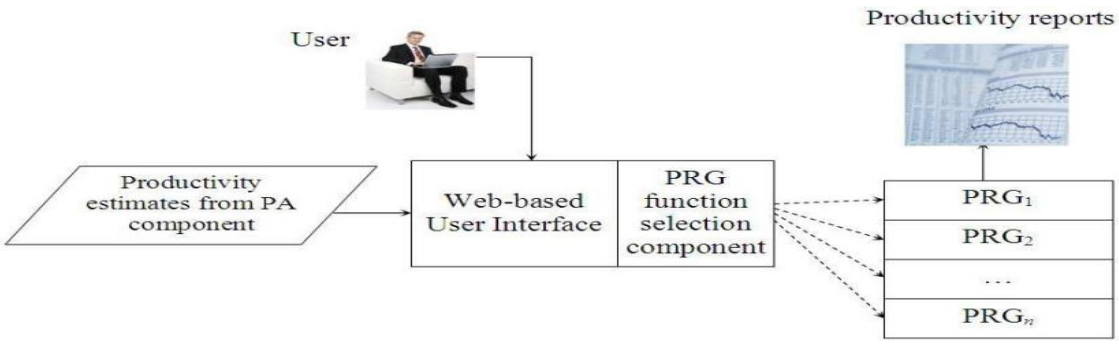


Figure 4 output structure for SPARK

In Figure 4, the tool is anticipated to employ statistical functions that present information in a manner aptly describing the productivity outputs of a given organization. Within SPARK, these functions are referred to as Productivity Report Generation (PRG) functions. Users of the SPARK system will seek to generate information about specific productivity outputs concerning the organization. SPARK is expected to have the ability to determine the relevant PRG function to use for providing the required information. Furthermore, as new outputs for measuring organizational productivity may emerge, SPARK should be adaptable, allowing for easy modification to integrate any new productivity measures, similar to the requirements outlined in the preceding two subsections.

6.3 Productivity Database Management System

This section provides an abstract discussion on a Database Management System (DBMS) designed for managing productivity data. The choice of productivity data to be handled by the system is contingent upon the application domain, with varying levels of complexity in data requirements for productivity analysis. To address these diverse needs, a DBMS that effectively scales with different requirements is suggested. The four major categories of DBMS are File System DBMS, Relational DBMS, Object-oriented DBMS, and Object-Relational DBMS. Among these categories, the Object-Relational approach is gaining popularity in recent applications, particularly tailored to handle complex data requirements. The current proposal leans towards implementing an object-relational DBMS that allows for data input and access through heterogeneous interfaces. In future work, we plan to assess existing Object-Relational DBMS implementation approaches to select one that aligns with the application outlined in this paper.

6.4 Architecture diagram:-

An architectural diagram serves as a visual depiction outlining the physical implementation of components within a software system. It illustrates the overall structure of the software system, highlighting the connections, constraints, and boundaries among each element.

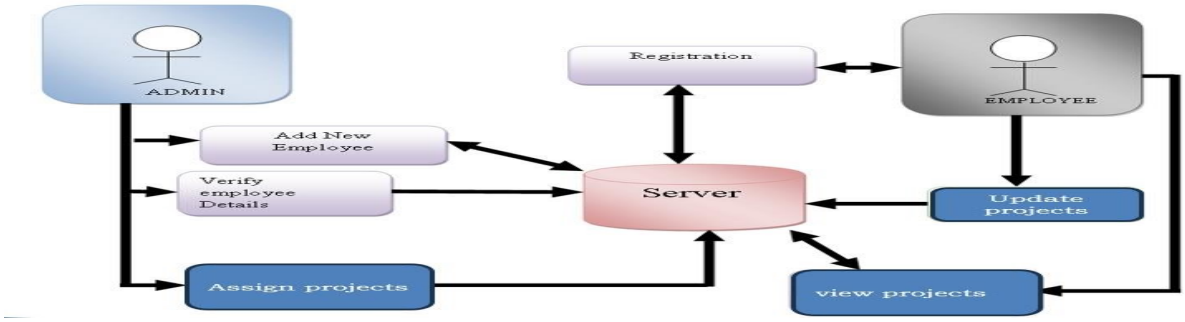


Fig 5 Architecture diagram

6.5 Use case diagram:-

A use case diagram visually represents the potential interactions between a user and a system. It illustrates different use cases and identifies various types of users within the system. Typically, this diagram is complemented by other types of diagrams. The use cases themselves are depicted using circles or ellipses.

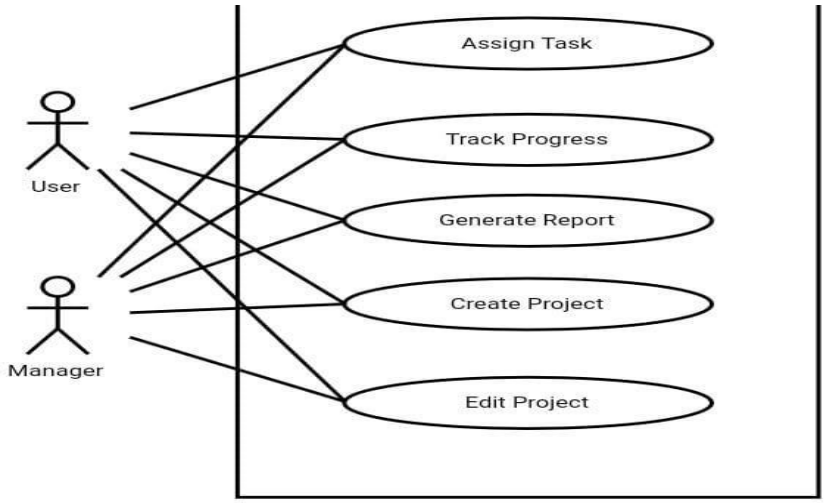


Fig 6 Use case diagram

6.6 Data flow diagram:-

A data flow diagram (DFD) maps out the flow of information for any process or system. It uses defined symbols like rectangles, circles and arrows, plus short text labels, to show data inputs, outputs, storage points and the routes between each destination.

1. External Entities:

Users: Individuals interacting with the system, providing input on their activities and tasks.

Time Tracking Tools: External tools or devices used to record time-related data, such as project management apps or time-tracking software.

2. Processes:

-Data Collection:

- Description: Gathers raw data from users and time tracking tools.

- Details: User input includes task descriptions, timestamps, and progress updates. Time tracking tools transmit detailed logs of work periods.

- Data Analysis:
- Description: Examines collected data to derive meaningful insights.
- Details: Utilizes algorithms to analyze time distribution, identify productivity patterns, and calculate metrics like task completion rates or time spent on specific activities.

3. Data Stores:
   - Time Database:
   - Description: Central repository for storing time-related data.
   - Details: Stores user-entered task details, timestamps, and data received from time tracking tools. Organized for efficient retrieval and analysis.

   - Productivity Metrics Database:
   - Description: Repository for storing calculated productivity metrics.
   - Details: Holds results of the data analysis process, including metrics like efficiency, time utilization, and trends over time.

4. Data Flows:
   - User Input:
   - Description: Information provided by users for tracking their activities.
   - Details: Includes task descriptions, start/end times, and progress updates. Flows into the Data Collection process.

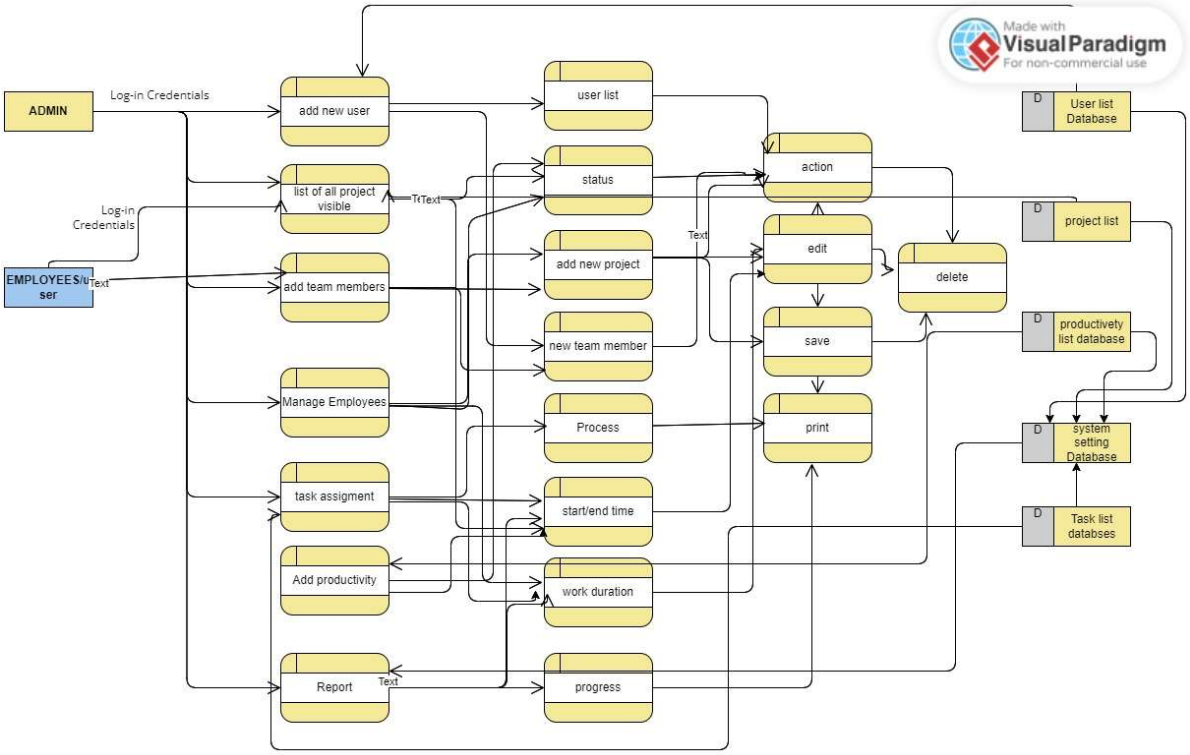


Fig 7 Data flow diagram

6.7 CLASS DIAGRAM:-

A class diagram, a category within UML diagrams, portrays the static perspective of a software system. Its purpose is to visually depict, articulate, and document multiple facets of a system, facilitating the creation of executable software code. This diagram showcases the kinds of objects within a system and delineates the diverse relationships existing among them.

6.7.1 Task management class diagram:-

1. Task Class:

- Attributes:
  - taskID: A unique identifier for each task.
  - title: The title or name of the task.
  - description: Detailed information about the task.
  - status: Current status of the task (e.g., not started, in progress, completed).
  - dueDate: The deadline for completing the task.
- Methods:
  - updateStatus(newStatus): Allows updating the status of the task.

- assignToUser(user): Assigns the task to a specific user.
- setDueDate(newDueDate): Sets or modifies the due date of the task.

2. User Class:
- Attributes:
  - userID: A unique identifier for each user.
  - username: The username of the user.
  - email: The email address of the user.
  - role: The role of the user in the system (e.g., admin, regular user).
- Methods:
  - createTask(taskDetails): Allows the user to create a new task.
  - viewTasks(): Retrieves a list of tasks associated with the user.
  - updateProfile(newDetails): Enables the user to update their profile information.

3. Project Class:
- Attributes:
  - projectID: A unique identifier for each project.
  - projectName: The name of the project.
  - description: Detailed information about the project.
  - startDate: The start date of the project.
  - endDate: The end date of the project.
- Methods:
  - addTask(task): Adds a task to the project.
  - removeTask(task): Removes a task from the project.
  - viewProgress(): Provides an overview of the project's progress.

4. Team Class:
- Attributes:
  - teamID: A unique identifier for each team.
  - teamName: The name of the team.
  - members: A collection of users who are part of the team.
  - projects: A collection of projects assigned to the team.
- Methods:
  - addMember(user): Adds a user to the team.

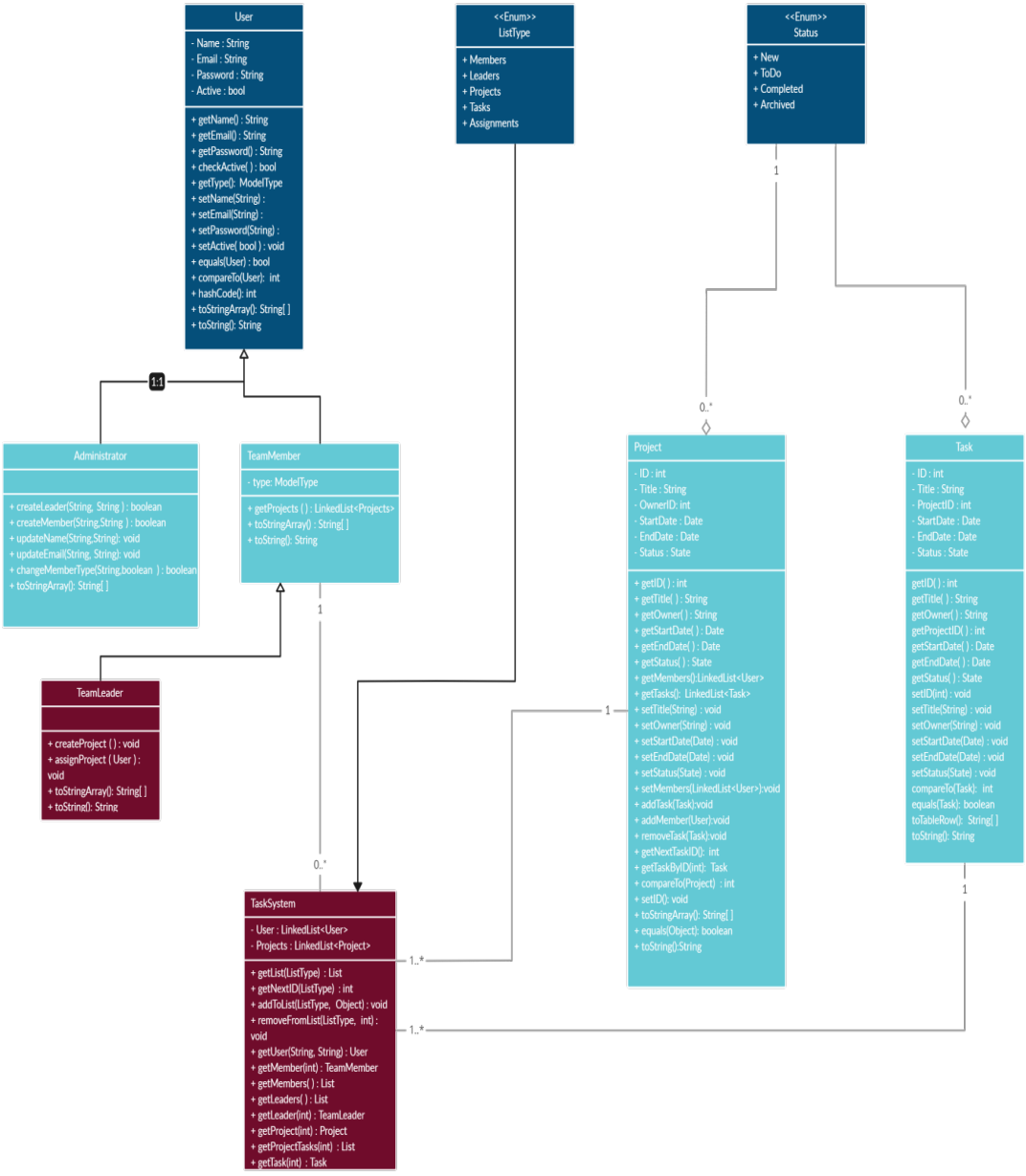


Fig 8 Class Diagram

6.7.2 Time management class diagram:-

1. Task Class:

- Attributes:

- taskID: Unique identifier for each task.

- taskName: Name of the task.
- description: Detailed description of the task.
- dueDate: Deadline for completing the task.
- priority: Reference to Priority class indicating the importance.
- status: Current status of the task (e.g., "in progress," "completed").

- Methods:
  - setTaskName(newName): Update the task name.
  - setDescription(newDescription): Modify the task description.
  - setDueDate(newDueDate): Change the due date of the task.
  - setPriority(newPriority): Assign a new priority to the task.
  - markAsCompleted(): Set the task status to completed.

2. User Class:
- Attributes:
  - userID: Unique identifier for each user.
  - userName: Name of the user.
  - email: User's email address.
  - password: User's password for authentication.

- Methods:
  - createTask(taskDetails): Create a new task associated with the user.
  - deleteTask(taskID): Remove a task from the user's list.
  - viewCalendar(): Retrieve the user's calendar and its events.
  - setPreferences(newPreferences): Adjust user-specific preferences.

3. Calendar Class:
- Attributes:
  - calendarID: Unique identifier for each calendar.
- Methods:
  - addEvent(eventDetails): Add a new event to the calendar.
  - removeEvent(eventID): Delete a specific event from the calendar.
  - viewEvents(): Display all events in the calendar.
  - setReminders(reminderDetails): Configure reminders for upcoming events.

4. Reminder Class:

- Attributes:
  - reminderID: Unique identifier for each reminder.
  - reminderMessage: Message associated with the reminder.
  - reminderTime: Time at which the reminder should trigger.
  - associatedTaskID: Reference to the task linked to the reminder.

- Methods:
  - setReminderMessage(newMessage): Modify the reminder message.
  - setReminderTime(newTime): Adjust the time for the reminder.
  - linkToTask(taskID): Associate the reminder with a specific task.

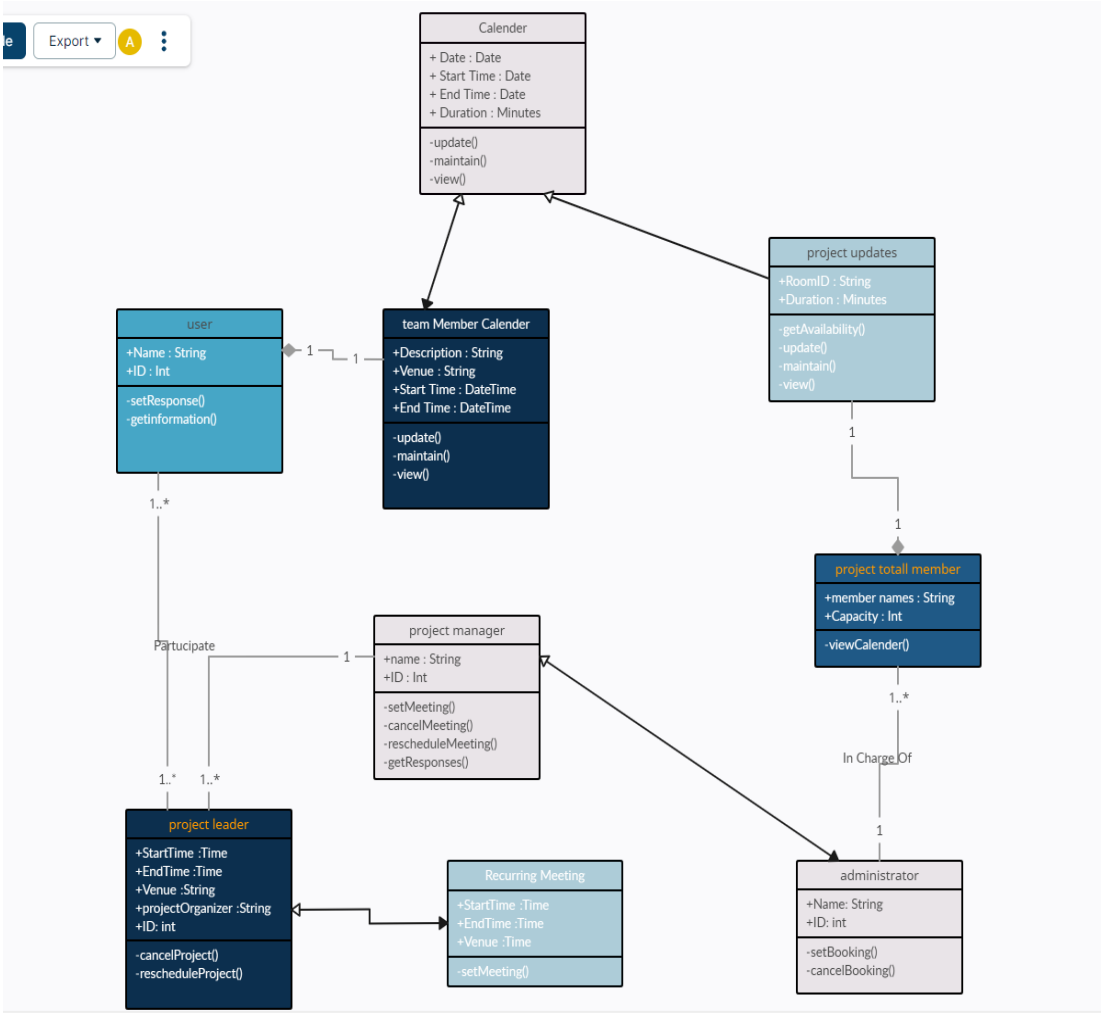


Fig 9 task class diagram

6.8 Algorithm Selection:-

1. Pomodoro Technique:

   Divides work into intervals (usually 25 minutes) called "Pomodoros" followed by short breaks. Encourages focused work during each Pomodoro, enhancing productivity by minimizing distractions.

2. Time Blocking:

   Allocates specific blocks of time to different tasks or activities throughout the day.Helps individuals maintain focus on specific responsibilities during dedicated time periods.

3. Efficiency Metrics:

   Measures the ratio of output to input, providing insights into how effectively resources are being utilized.Common metrics include Return on Investment (ROI) and Resource Utilization Rate.

4. Task Completion Time Analysis:

   - Analyzes the time it takes to complete specific tasks or activities.
   - Identifies bottlenecks, inefficiencies, and opportunities for improvement in task execution.

5. Moving Averages:

   - Smoothens fluctuations in time-series data to identify trends over time.
   - Useful for identifying patterns and understanding the overall direction of productivity changes.

6. Exponential Smoothing:

   - Assigns exponentially decreasing weights to older observations, giving more importanceto recent data.
   - Particularly useful for forecasting future productivity based on historical trends.

7. Critical Path Method (CPM):

- Identifies the sequence of tasks critical for project completion.
- Helps project managers prioritize activities and allocate resources efficiently.

8. Kanban Systems:

Visualizes workflows on a Kanban board, dividing tasks into stages like "To Do," "In Progress," and "Done."

Facilitates efficient task management, collaboration, and identification of bottlenecks.

9. Predictive Analytics:

Utilizes historical data to make predictions about future productivity trends.

Helps organizations anticipate challenges and plan strategies for enhanced efficiency.

10. Clustering Algorithms:

Groups similar tasks or work habits together based on patterns identified in the data.Aids in understanding team dynamics and optimizing collaboration.

11. M/M/1 Queue Model:

- Analyzes single-server queue systems, commonly used in scenarios with a sequential flow of tasks.
- Provides insights into waiting times and resource utilization.

12. Greedy Algorithms:

- Makes locally optimal choices at each stage with the hope of finding a global optimum.
- Often used in resource allocation problems to maximize immediate benefits.

13. Genetic Algorithms:

- Mimics the process of natural selection to optimize resource allocation over time.
-Suitable for complex optimization problems where multiple factors influence decision-making.

14. Social Network Analysis:

- Examines social interactions within a team or organization.
- Identifies influential members, communication patterns, and potential collaboration opportunities.

6.9 Formulas:-

1. Efficiency Metrics:

-Return on Investment (ROI):[ROI = left(frac{text{Net Gain or Loss}}{text{Cost of Investment}} right) times 100 %]

-Resource Utilization Rate: [Resource Utilization Rate = left(frac{text{Actual Output}}{text{Maximum Possible Output}} right) times 100 %]

2. Moving Averages:

-Simple Moving Average (SMA):[SMA = frac{text{Sum of Data Points in Period}}{text{Number of Data Points in Period}}]

-Exponential Moving Average (EMA):[EMA_t = alpha times X_t + (1-alpha) times EMA_{t-1}] where (X_t) is the current data point, (EMA_{t-1}) is the previous EMA, and (alpha) is the smoothing factor.

3. Critical Path Method (CPM):

- Total Float (TF):[TF = LS - ES text{ or } LF - EF]
- Critical Path Length:It's the sum of durations of activities on the critical path.

4. Predictive Analytics:

- Various predictive models may have different formulas. For example, linear regression:

[Y = mX + b]where (Y) is the predicted output, (X) is the input variable, (m) is the slope, and (b) is the y-intercept.

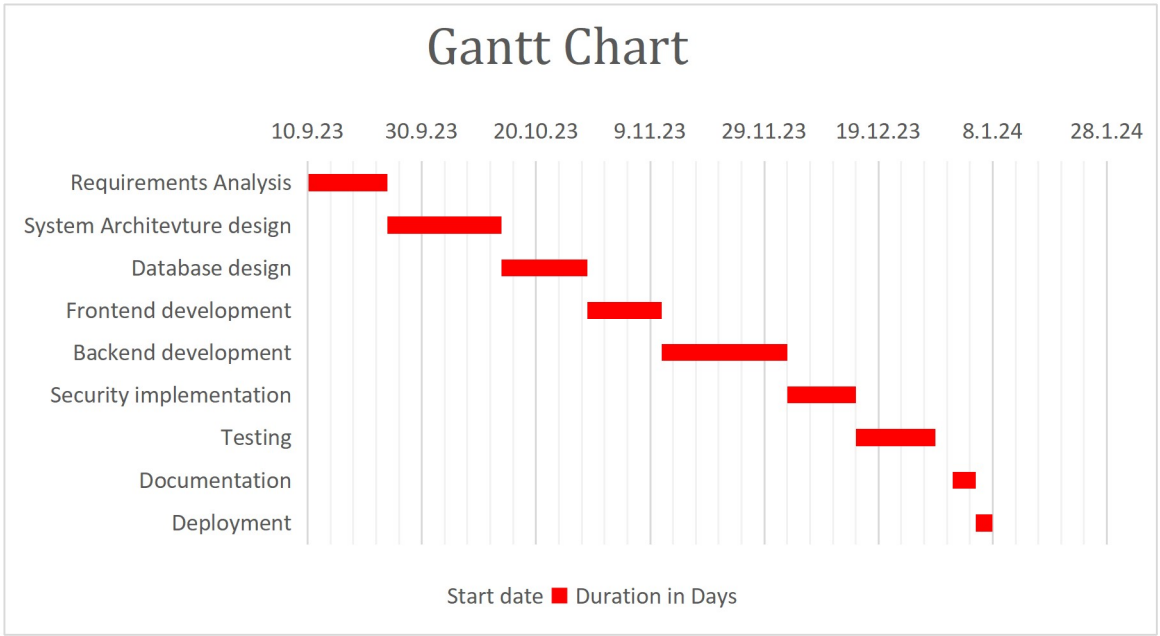
CHAPTER-7

TIMELINE FOR EXECUTION OF PROJECT

(GANTT CHART)

TASK	Duration	START	END
Requirement Analysis	2 weeks	10/9/23	24/9/2023
System Architecture Design	3 weeks	24/9/2023	14/10/2023
database design	2 weeks	14/10/2023	29/10/2023
backend development	4 weeks	29/10/2023	11/11/23
Frontend development	3 weeks	11/11/2023	3/12/2023
Security information	0.5 weeks	3/12/2023	9/12/2023
Testing	2 weeks	9/12/2023	19/12/2023
Documentation	1 weeks	19/12/2023	26/12/2023
Deployment	2 weeks	27/12/2023	7/1/2024

Table 1 Gantt chart



CHAPTER-8
OUTCOMES

8.1 Expected output:-

1. Identification of Time Wasters:

This involves recognizing and understanding activities or processes that consume time without contributing significantly to the overall goals or outcomes of a task or project. Identifying time wasters allows for targeted efforts to eliminate or streamline such activities, improving overall efficiency.

2. Efficiency Improvements:

Focuses on enhancing the effectiveness and speed of tasks or processes within an organization. This may involve optimizing workflows, refining procedures, or incorporating technological solutions to minimize manual effort and maximize output within the same time frame.

3. Time Allocation Insights:

Involves gaining a deeper understanding of how time is currently allocated across different tasks, projects, or responsibilities. By analyzing time allocation patterns, individuals and organizations can make informed decisions on prioritization, resource allocation, and project planning.

4. Productivity Metrics:

Refers to the measurement and analysis of various indicators to assess the overall productivity of individuals, teams, or an organization. These metrics may include output per unit of time, task completion rates, and other performance indicators. Monitoring productivity metrics provides valuable insights into areas of improvement and success.

5. Cost Savings or Reallocating Resources:

Identifying opportunities to reduce costs or reallocate resources involves a comprehensive evaluation of current processes and resource utilization. This could lead to cost-effective measures, such as eliminating redundant tasks,

optimizing resource allocation, or implementing tools that enhance efficiency and reduce expenses.

6. Improved Work-Life Balance:

Recognizes the importance of balancing professional responsibilities with personal well-being. By understanding how time is utilized in work-related activities, individuals can make conscious decisions to create a more balanced lifestyle. This may involve setting boundaries, prioritizing tasks, and ensuring sufficient time for personal and leisure activities. Achieving a better work-life balance can contribute to increased job satisfaction and overall well-being.

8.2 Output observed:-

1. Time Allocation and Resource Utilization:

- Task Distribution Breakdown: A detailed breakdown of time spent on different tasks across various stages of the project development lifecycle, highlighting the allocation of resources (human and technical) to specific activities.
- Resource Utilization Metrics: Analysis of how effectively resources were utilized in terms of hours worked, tasks completed, and the correlation between resource allocation and task completion rates.

2. Efficiency Metrics:

- Task Completion Time: Insights into the average time taken to complete different types of tasks, allowing for identification of bottlenecks or areas where improvements can be made to streamline processes.
- Idle Time Analysis: Identification and analysis of periods of inactivity or idle time within the project, pinpointing areas where resources could be better utilized.

3. Productivity Assessment:

- Task Progress and Completion Rates: Evaluation of the progress rates of tasks against the planned schedule, assessing the overall productivity of the team and identifying tasks that may have been delayed or completed ahead of schedule.
- Quality of Output: Consideration of not just completion rates but also the quality

of work produced within the allocated time frames, highlighting areas of exceptional performance or those needing improvement.

4. Performance Trends and Patterns:

- Trend Analysis: Examination of productivity trends over time to identify patterns, seasonal variations, or recurring issues that impact project performance.
- Comparative Analysis: Comparison of productivity and time allocation between different teams or individuals to identify best practices or areas for improvement.

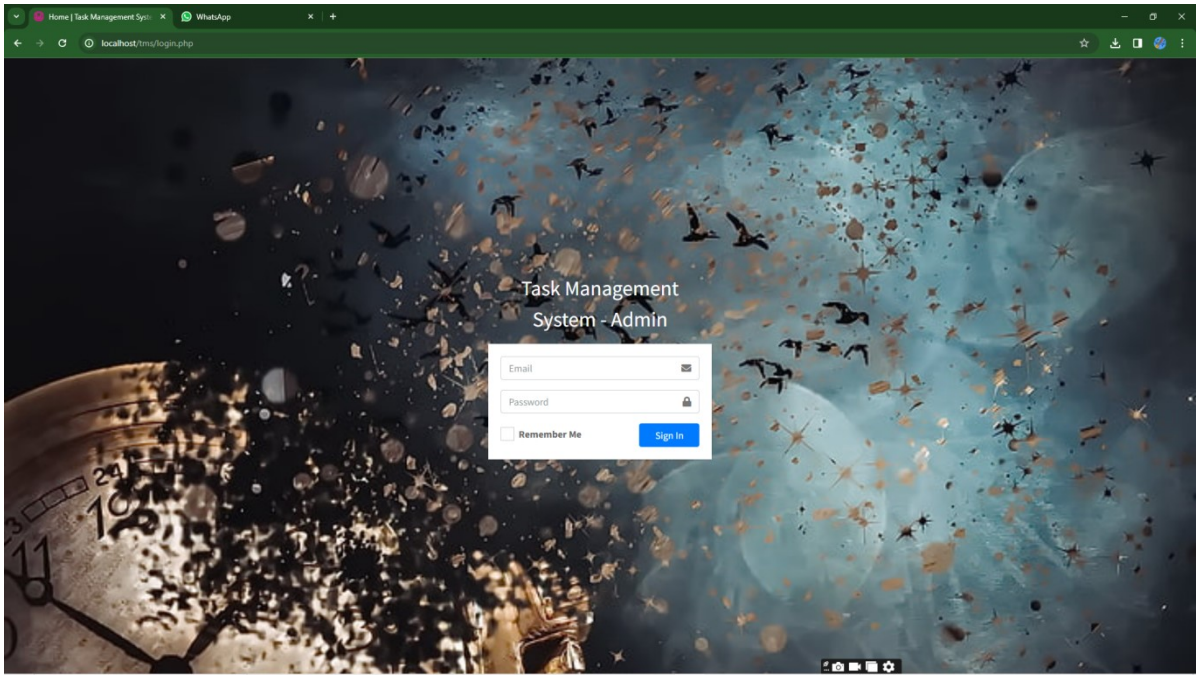
5. Impact on Project Milestones and Deliverables:

- Milestone Achievement Analysis: Assessment of how effectively time and productivity metrics influenced the achievement of project milestones and delivery of project deliverables.
- Variances from Planned Timelines: Identification and analysis of deviations from the planned timelines and their impact on project outcomes.

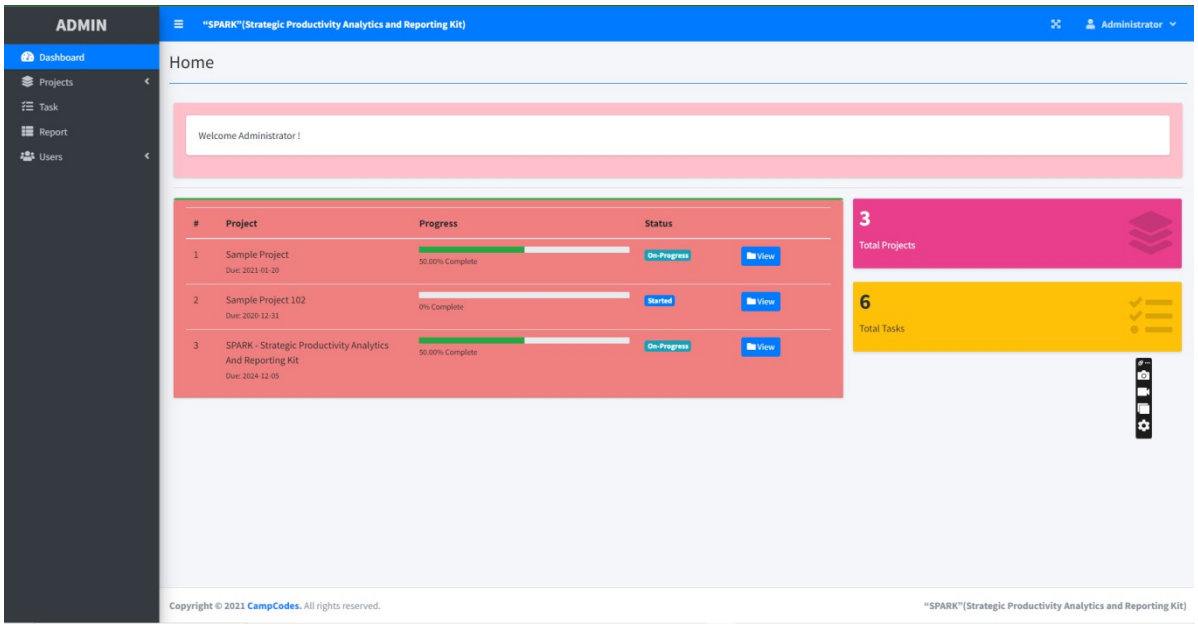
6. Recommendations and Actionable Insights:

- Process Improvement Suggestions: Actionable recommendations based on the analysis to improve resource allocation, optimize workflows, and enhance productivity.
- Training or Support Needs: Identification of any training needs or support required by teams or individuals to improve their productivity or time management skills.

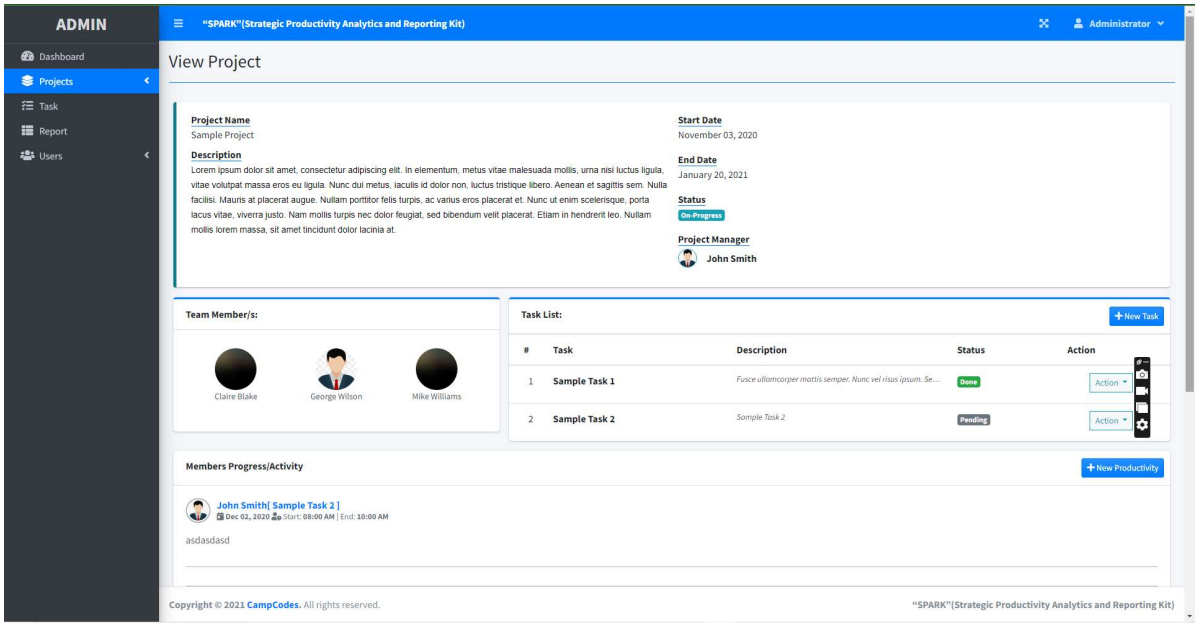
OUTCOME IMAGES:



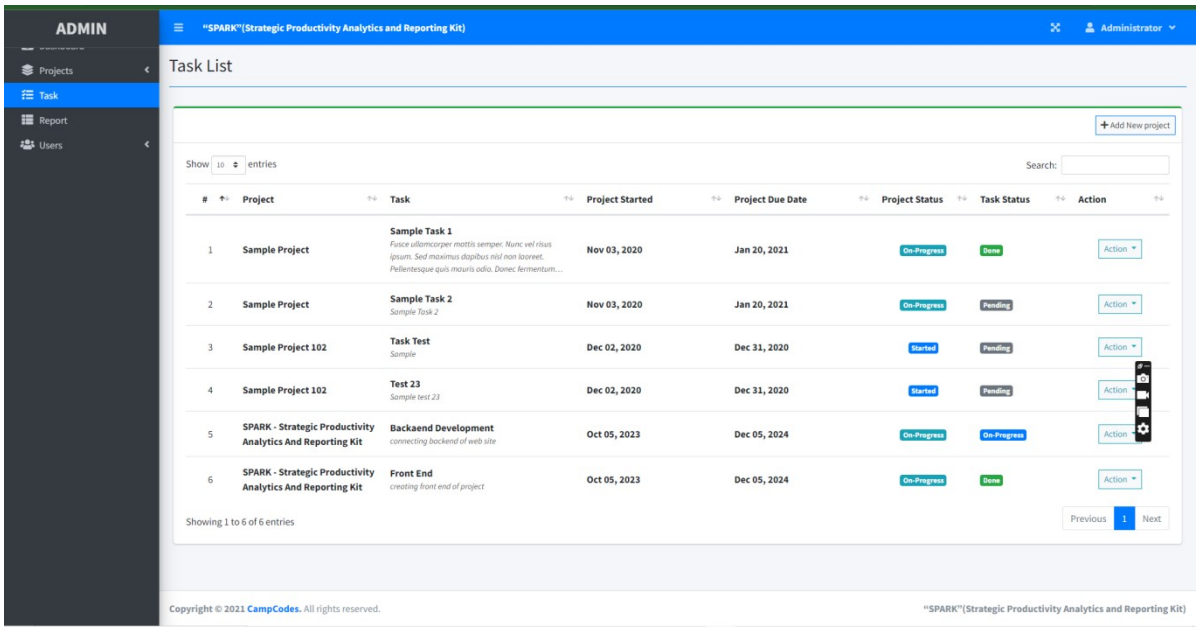
Login page



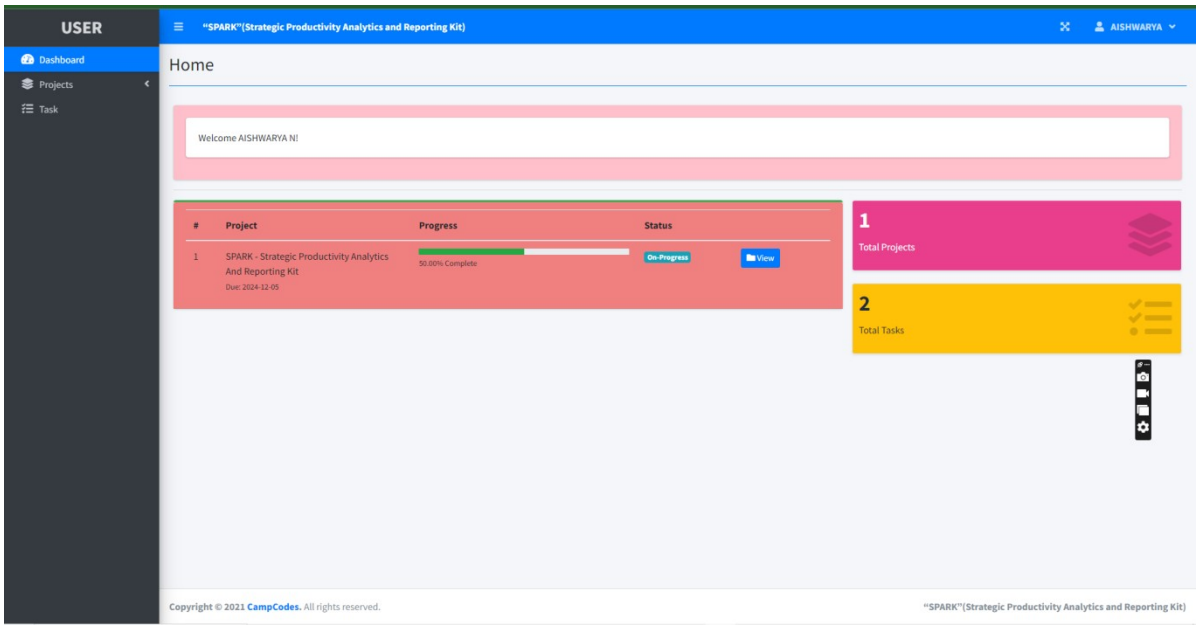
Home page



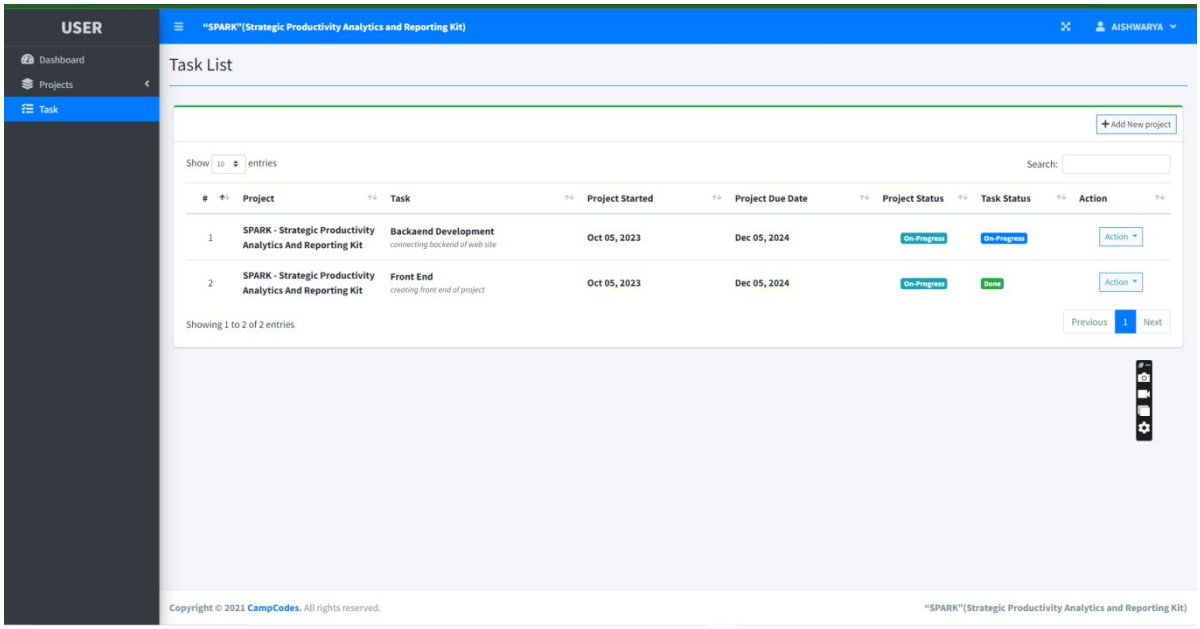
Project description page



Task list



User dashboard



Task page

CHAPTER-9
RESULTS AND DISCUSSIONS

9.1 Problem discussion:-

1. Delayed Reporting: Offline methods often involve manual data collection, leading to delays in generating productivity reports. This lag can hinder timely decision-making and responsiveness to emerging issues.

2. Limited Accessibility: Accessing productivity data offline can be restrictive, especially for remote teams or employees working from different locations. This limitation may hinder collaboration and real-time adjustments.

3. Error-Prone Manual Processes: Reliance on manual data entry increases the likelihood of errors, impacting the accuracy of productivity analysis. Inconsistencies in data can lead to flawed insights and decision-making.

4. Inefficiency in Data Aggregation: Compiling and aggregating data from various sources manually can be time-consuming and prone to oversights. This inefficiency may hinder a comprehensive understanding of overall productivity.

5. Lack of Real-Time Monitoring: Offline methods lack the ability to provide real-time monitoring of tasks and projects. This absence of immediacy can result in missed opportunities to address issues promptly.

6. Difficulty in Scaling: As organizations grow, the manual effort required for offline analysis becomes increasingly challenging to scale. This can lead to a lack of adaptability to changing workloads and complexities.

7. Limited Collaboration: Offline analysis may impede effective collaboration, as team members may not have simultaneous access to productivity data. This can hinder collective problem-solving and hinder teamwork.

8. Data Security Risks: Storing productivity data offline may pose security risks,

especially if physical records are not adequately protected. Loss, theft, or damage to records could compromise sensitive information.

Transitioning to online platforms for time and productivity analysis can address many of these challenges, providing real-time insights, better collaboration, and automated processes for more accurate and efficient analysis.

9.2 Result/Solution:-

An online platform for productivity analysis and time management offers several advantages:

1. Real-time Data Access: Online platforms provide instant access to real-time data, enabling users to monitor productivity metrics and time usage promptly.

2. Remote Accessibility: With the rise of remote work, online platforms facilitate tracking and management of productivity regardless of geographical location, ensuring consistent monitoring.

3. Collaboration and Sharing: Online platforms allow team members to collaborate on projects, share progress, and synchronize efforts, fostering a more efficient and interconnected work environment.

4. Automation and Integration: Integrating with other tools and automating certain processes enhances efficiency, reducing manual effort in data collection and analysis.

5. Customization and Scalability: Online platforms often offer customizable features to adapt to the unique needs of different organizations, ensuring scalability as businesses grow.

6. Data Security and Backup: Reliable online platforms prioritize data security, implementing measures such as encryption and regular backups to safeguard sensitive information.

7. Reporting and Insights: These platforms often provide detailed reports and insights,

helping organizations identify trends, assess performance, and make informed decisions to improve productivity.

In summary, an online platform for productivity analysis and time management offers flexibility, collaboration, and automation, making it a valuable tool for modern organizations striving to optimize their workflows.

CHAPTER-10
CONCLUSION

We present the concept of "SPARK" (Strategic Productivity Analytics and Reporting Kit) designed for applications requiring the collection of productivity data from remote locations within a business entity. The primary goal of SPARK is to streamline the workload associated with entering and analyzing productivity data, transferring these tasks from various remote sites to a centralized input point. Additionally, the tool aims to minimize data loss and reduce the time required for productivity data entry. While SPARK is adaptable for deployment across various organizations, it is particularly intended for those operating in developing areas, contingent upon the availability of internet connectivity.

In this report, we provide an update on the current development status of SPARK and delve into its prospects for software implementation. To illustrate different aspects of the tool, we employ banks as a case study. We outline the general implementation requirements for SPARK, anticipating that these guidelines will offer organizations a range of options for implementation.

In summary, the incorporation of time and productivity analysis emerges as a foundational element for organizational triumph. Through the adept deployment of analysis methodologies, organizations can not only boost efficiency but also strategically optimize resource allocation, thereby fostering a comprehensive enhancement of overall performance. Crucial takeaways from this presentation highlight the importance of embracing decision-making rooted in data, recognizing the pivotal role of technology in shaping the future of analytical processes, and providing actionable recommendations for organizations to elevate their productivity. Armed with these insights, organizations are well-positioned to unlock their full potential, align strategies with data-driven perspectives, and effectively navigate toward the achievement of their goals.

At its core, this project aimed to unravel the complexities inherent in managing tasks, balancing resources, and navigating the ever-evolving landscape of project execution. Through meticulous implementation of PHP and JavaScript for backend operations and CSS, Bootstrap, and other frontend technologies, coupled with the stalwart reliability of MySQL for database management, the foundation was laid for a system designed to cater to the

diverse needs of administrators, project managers, and employees.The project's journey commenced with the delineation of distinct interfaces tailored to each stakeholder—administrators, project managers, and employees. The admin interface stood as the bastion of control, offering a panoramic view of the system's operations and the tools necessary for comprehensive oversight. Meanwhile, the project manager interface provided a focused arena for planning, tracking, and coordinating tasks within specific projects, ensuring seamless collaboration and progress monitoring. Simultaneously, the employee interface, designed with simplicity and functionality in mind, facilitated task execution and collaboration, empowering individuals to contribute efficiently to the project's success.

The depth of this project extended beyond the technological framework. It delved into the realms of time allocation, productivity metrics, and efficiency analyses, each unveiling layers of insight into the project's inner workings. The time allocation breakdown provided a granular view of resource utilization, while productivity assessments highlighted trends, bottlenecks, and areas for enhancement.Through this rigorous analysis, several pivotal outcomes surfaced, shaping the understanding of the project's dynamics and paving the way for actionable strategies:

Moreover, this project's significance transcends the boundaries of its initial scope. It represents a testament to the project's legacy, serving as a blueprint for future endeavors within the organization and beyond. The insights garnered aren't confined to a singular project but resonate as guiding principles for navigating the complex landscape of project management, fostering an environment where productivity isn't just a measure but a way of operating.In essence, the "Time and Productivity Analysis in Project Task Management System" project isn't merely an exploration; it's a manifesto for efficiency, a testament to the amalgamation of technology, methodology, and analytical prowess in achieving organizational goals. It stands as a testament to the organization's commitment to continuous improvement and serves as a beacon guiding the way towards a future where productivity isn't a goal to achieve but a culture to embody. This project is more than a culmination; it's the dawn of a new era in project management efficiency.

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APPENDIX-A
PSUEDOCODE

1.Database creation algorithm:-

```
CREATE TABLE `project_list` (
  `id` int(30) NOT NULL,
  `name` varchar(200) NOT NULL,
  `description` text NOT NULL,
  `status` tinyint(2) NOT NULL,
  `start_date` date NOT NULL,
  `end_date` date NOT NULL,
  `manager_id` int(30) NOT NULL,
  `user_ids` text NOT NULL,
  `date_created` datetime NOT NULL DEFAULT current_timestamp()
) ENGINE=InnoDB DEFAULT CHARSET=utf8m;

CREATE TABLE `system_settings` (
  `id` int(30) NOT NULL,
  `name` text NOT NULL,
  `email` varchar(200) NOT NULL,
  `contact` varchar(20) NOT NULL,
  `address` text NOT NULL,
  `cover_img` text NOT NULL
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4;

CREATE TABLE `task_list` (
  `id` int(30) NOT NULL,
  `project_id` int(30) NOT NULL,
  `task` varchar(200) NOT NULL,
  `description` text NOT NULL,
  `status` tinyint(4) NOT NULL,
  `date_created` datetime NOT NULL DEFAULT current_timestamp()
```

```
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4;

CREATE TABLE `users` (
  `id` int(30) NOT NULL,
  `firstname` varchar(200) NOT NULL,
  `lastname` varchar(200) NOT NULL,
  `email` varchar(200) NOT NULL,
  `password` text NOT NULL,
  `type` tinyint(1) NOT NULL DEFAULT 2 COMMENT '1 = admin, 2 = staff',
  `avatar` text NOT NULL,
  `date_created` datetime NOT NULL DEFAULT current_timestamp(),
  PRIMARY KEY (`id`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4;


CREATE TABLE `user_productivity` (
  `id` int(30) NOT NULL,
  `project_id` int(30) NOT NULL,
  `task_id` int(30) NOT NULL,
  `comment` text NOT NULL,
  `subject` varchar(200) NOT NULL,
  `date` date NOT NULL,
  `start_time` time NOT NULL,
  `end_time` time NOT NULL,
  `user_id` int(30) NOT NULL,
  `time_rendered` float NOT NULL,
  `date_created` datetime NOT NULL DEFAULT current_timestamp()
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4;
```

2.Task management Pseudo code:-

This algorithm is used to calculate task. We can add task and edit and delete as well. We can assign whether the task is on progress stated or ended.

```
div class="container-fluid">
    <form action="" id="manage-task">
        <input type="hidden" name="id" value="<?php echo isset($id) ? $id : " ?>">
        <input type="hidden" name="project_id" value="<?php echo isset($_GET['pid']) ? $_GET['pid'] : " ?>">
        <div class="form-group">
            <label for="">Task</label>
            <input type="text" class="form-control form-control-sm" name="task" value="<?php echo isset($task) ? $task : " ?>" required>
        </div>
        <div class="form-group">
            <label for="">Description</label>
            <textarea name="description" id="" cols="30" rows="10" class="summernote form-control">
                <?php echo isset($description) ? $description : " ?>
            </textarea>
        </div>
        <div class="form-group">
            <label for="">Status</label>
            <select name="status" id="status" class="custom-select custom-select-sm">
                <option value="1" <?php echo isset($status) && $status == 1 ? 'selected' : " ?>>Pending</option>
                <option value="2" <?php echo isset($status) && $status == 2 ? 'selected' : " ?>>On-Progress</option>
                <option value="3" <?php echo isset($status) && $status == 3 ? 'selected' : " ?>>Done</option>
            </select>
```

```
                </div>
```

3.Progress management algorithm:-

This algorithm is used to calculate progress according to data provided by employees and can show the progress status.

```
<?php
        $tasks = $conn->query("SELECT * FROM task_list where project_id ={$_GET['pid']}order by task asc ");
    while($row= $tasks->fetch_assoc()):
                    ?>
   <option value="<?php echo $row['id'] ?>" <?php echo isset($task_id) && $task_id == $row['id'] ? "selected" : " ?>>
<?php echo ucwords($row['task']) ?></option>
<?php endwhile; ?>
                  </select>
                </div>
                <?php else: ?>
<input type="hidden" name="task_id" value="<?php echo isset($_GET['tid']) ? $_GET['tid'] : " ?>">
                <?php endif; ?>
                <div class="form-group">
                   <label for="">Subject</label>
<input type="text" class="form-control form-control-sm" name="subject" value="<?php echo isset($subject) ? $subject : " ?>" required>
                </div>
                <div class="form-group">
                   <label for="">Date</label>
                                <input type="date" class="form-control form-control-sm" name="date" value="<?php echo isset($date) ? date("Y-m-d",strtotime($date)) : " ?>" required>
                </div>
                <div class="form-group">
                   <label for="">Start Time</label>
```

```
                    <input type="time" class="form-control form-control-sm"
                  <div class="form-group">
                    <label for="">End Time</label>
<input type="time" class="form-control form-control-sm" name="end_time" value="<?php echo isset($end_time) ? date("H:i",strtotime("2020-01-01 ".$end_time)) : " ?>" required>
      </div>
```

4.User management algorithm:-

This algorithm is used to add new user delete exiting user and provide them task and time. We also provide them official email id and password.so that they can submit their report and change there statues.

```
<div class="form-group">
        <label for="" class="control-label">First Name</label>
        <input type="text" name="firstname" class="form-control form-control-sm" required value="<?php echo isset($firstname) ? $firstname : " ?>">
</div>
<div class="form-group">
<label for="" class="control-label">Last Name</label>
<input type="text" name="lastname" class="form-control form-control-sm" required value="<?php echo isset($lastname) ? $lastname : " ?>">
                                                    </div>
<?php if($_SESSION['login_type'] == 1): ?>

<div class="form-group">

<label for="" class="control-label">User Role</label>

<select name="type" id="type" class="custom-select custom-select-sm">


<option value="3" <?php echo isset($type) && $type == 3 ? 'selected' : " ?>>Employee</option>

<option value="2" <?php echo isset($type) && $type == 2 ? 'selected' : " ?>>Project
```

```
Manager</option>

<option value="1" <?php echo isset($type) && $type == 1 ? 'selected' : " ?>>Admin</option>
                                                    </select>
                                                </div>
<?php else: ?>
<input type="hidden" name="type" value="3">

<?php endif; ?>

<div class="form-group">

<label for="" class="control-label">Avatar</label>

<div class="custom-file">

<input type="file" class="custom-file-input" id="customFile" name="img" onchange="displayImg(this,$(this))">

<label class="custom-file-label" for="customFile">Choose file</label>
                                </div>
```

5.Time management algorithm:-

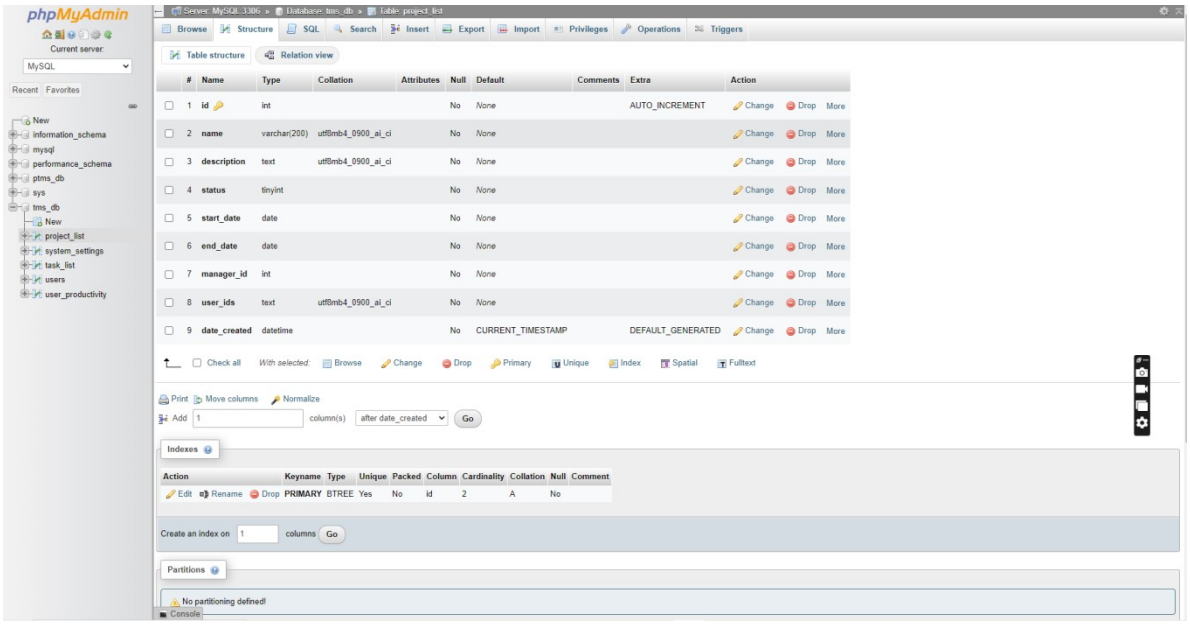
This algorithm is used to calculate time taken by employs to complete specific task.it show at what time task was assigned and at what time it was submitted. Main aim is to provide deadline of task and see whether employee finished task at right time or not.

```
<?php
        $i = 1;
        $stat = array("Pending","Started","On-Progress","On-Hold","Over Due","Done");
        $where = "";
```

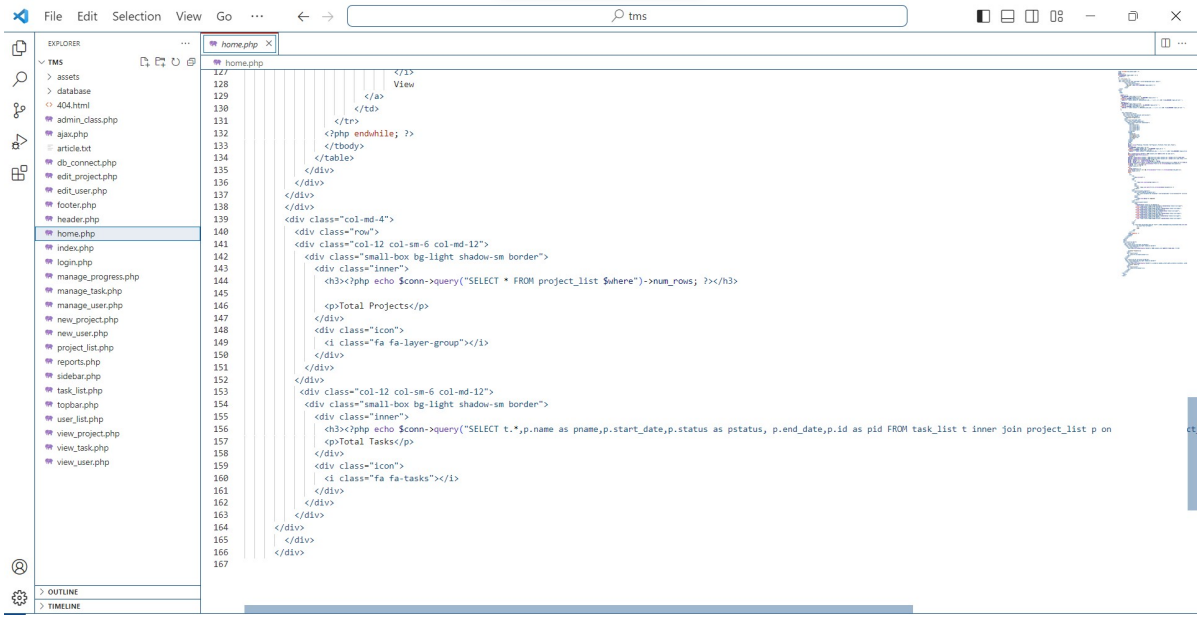
```
if($_SESSION['login_type'] == 2){
  $where = " where manager_id = '{$_SESSION['login_id']}' ";
}elseif($_SESSION['login_type'] == 3){
  $where = " where concat('[',REPLACE(user_ids,',','],['),']') LIKE '%[{$_SESSION['login_id']}]%' ";
}
$qry = $conn->query("SELECT * FROM project_list $where order by name asc");
while($row= $qry->fetch_assoc()):
$tprog = $conn->query("SELECT * FROM task_list where project_id = {$row['id']}")->num_rows;
$cprog = $conn->query("SELECT * FROM task_list where project_id = {$row['id']} and status = 3")->num_rows;
$prog = $tprog > 0 ? ($cprog/$tprog) * 100 : 0;
$prog = $prog > 0 ?  number_format($prog,2) : $prog;
$prod = $conn->query("SELECT * FROM user_productivity where project_id = {$row['id']}")->num_rows;
$dur = $conn->query("SELECT sum(time_rendered) as duration FROM user_productivity where project_id = {$row['id']}");
$dur = $dur->num_rows > 0 ? $dur->fetch_assoc()['duration'] : 0;
if($row['status'] == 0 && strtotime(date('Y-m-d')) >= strtotime($row['start_date'])):
if($prod  > 0  || $cprog > 0)
  $row['status'] = 2;
else
  $row['status'] = 1;
elseif($row['status'] == 0 && strtotime(date('Y-m-d')) > strtotime($row['end_date'])):
$row['status'] = 4;
endif;
  ?>
```

APPENDIX-B

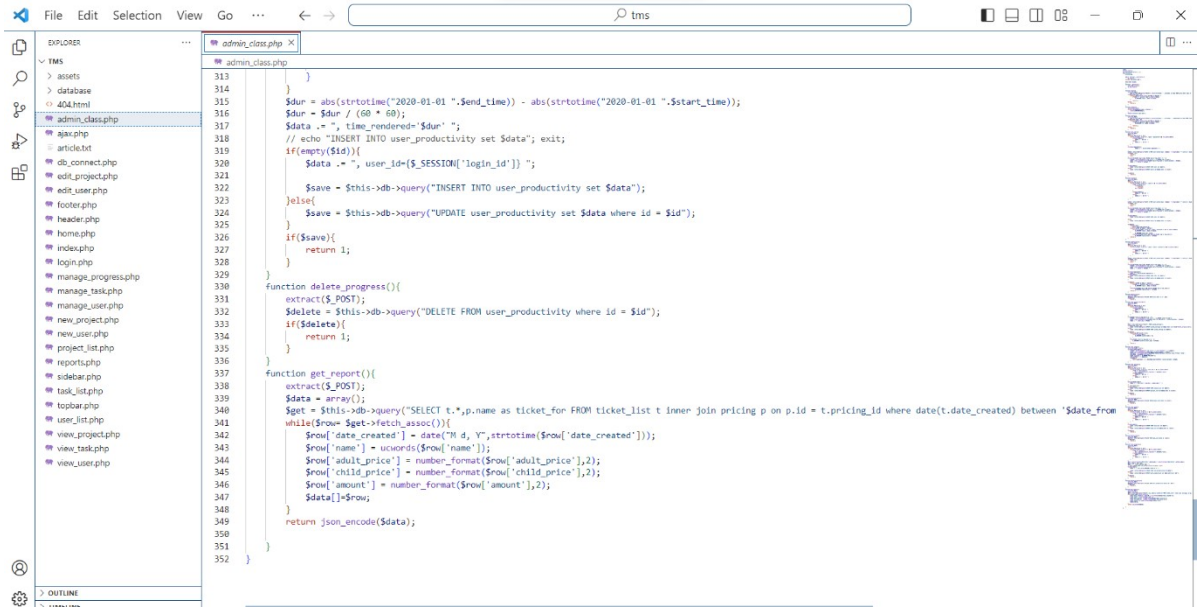
SCREENSHOTS



Databases

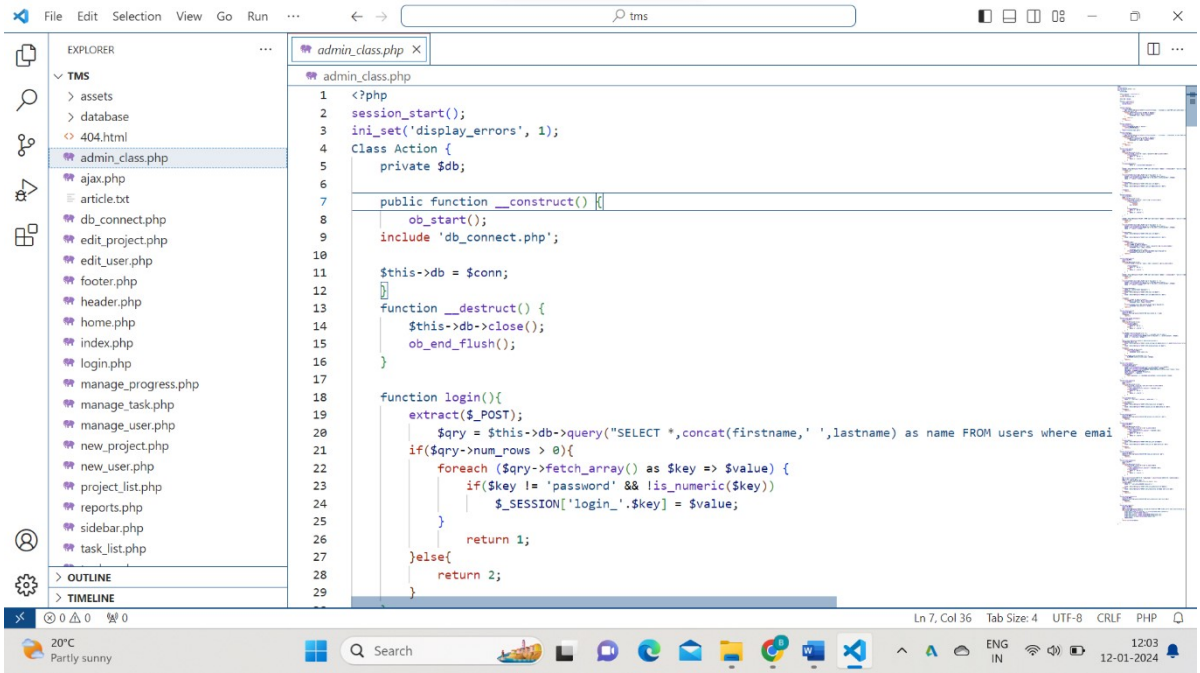


Home page



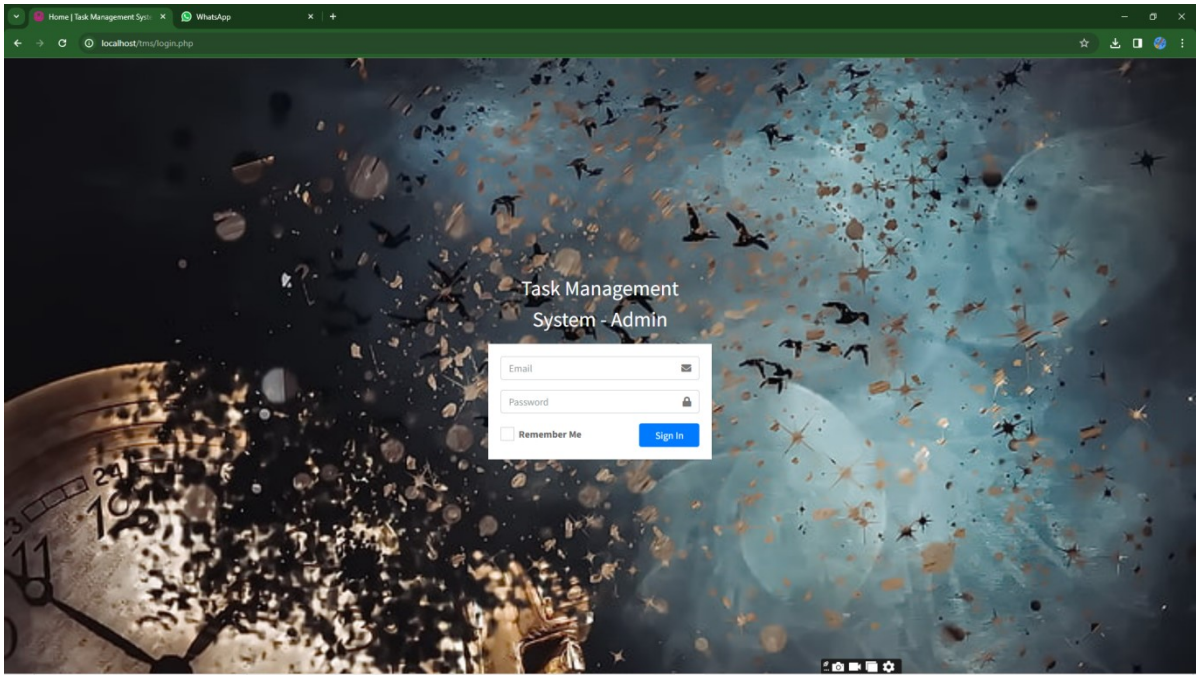
```
313             }
314         }
315         $dur = abs(strtotime("2020-01-01 ".$end_time)) - abs(strtotime("2020-01-01 ".$start_time));
316         $dur = $dur / (60 * 60);
317         $data .= ", time_rendered='$dur' ";
318         // echo "INSERT INTO user_productivity set $data"; exit;
319         if(empty($id)){
320             $data .= ", user_id={$_SESSION['login_id']} ";
321 
322             $save = $this->db->query("INSERT INTO user_productivity set $data");
323         }else{
324             $save = $this->db->query("UPDATE user_productivity set $data where id = $id");
325         }
326         if($save){
327             return 1;
328         }
329     }
330     function delete_progress(){
331         extract($_POST);
332         $delete = $this->db->query("DELETE FROM user_productivity where id = $id");
333         if($delete){
334             return 1;
335         }
336     }
337     function get_report(){
338         extract($_POST);
339         $data = array();
340         $get = $this->db->query("SELECT t.*,p.name as ticket_for FROM ticket_list t inner join pricing p on p.id = t.pricing_id where date(t.date_created) between '$date_from
341         while($row= $get->fetch_assoc()){
342             $row['date_created'] = date("M d, Y",strtotime($row['date_created']));
343             $row['name'] = ucwords($row['name']);
344             $row['adult_price'] = number_format($row['adult_price'],2);
345             $row['child_price'] = number_format($row['child_price'],2);
346             $row['amount'] = number_format($row['amount'],2);
347             $data[]=$row;
348         }
349         return json_encode($data);
350 
351     }
352 }
```

Admin page

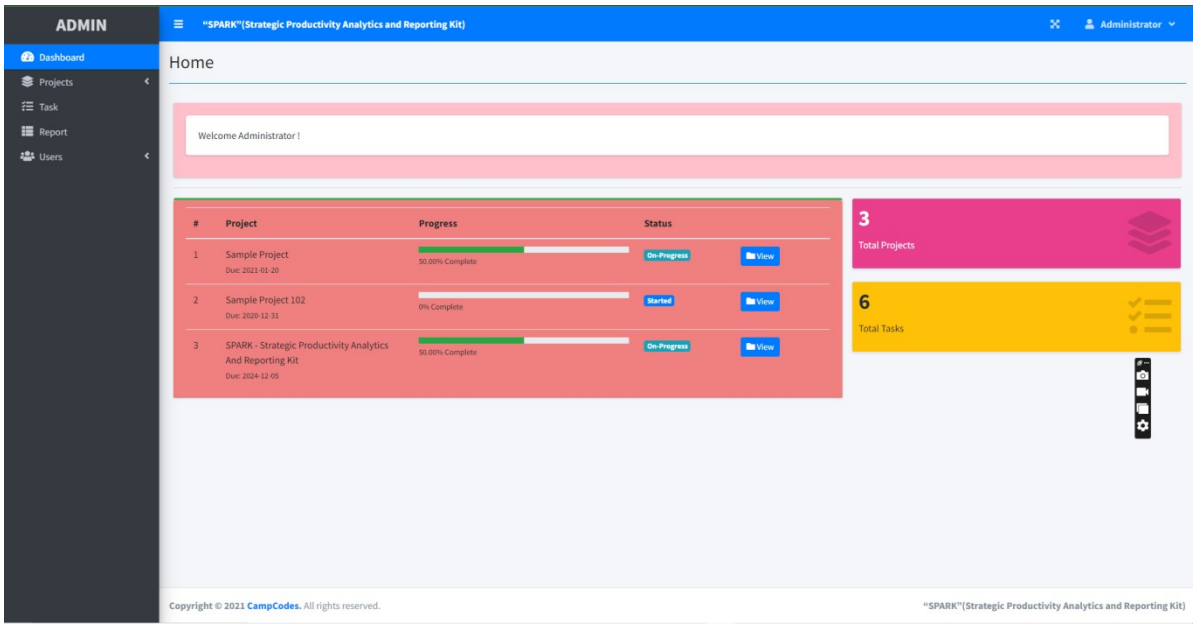


```
1   <?php
2   session_start();
3   ini_set('display_errors', 1);
4   Class Action {
5       private $db;
6 
7       public function __construct() {
8           ob_start();
9       include 'db_connect.php';
10 
11      $this->db = $conn;
12      }
13      function __destruct() {
14          $this->db->close();
15          ob_end_flush();
16      }
17 
18      function login(){
19          extract($_POST);
20              $qry = $this->db->query("SELECT *,concat(firstname,' ',lastname) as name FROM users where emai
21          if($qry->num_rows > 0){
22              foreach ($qry->fetch_array() as $key => $value) {
23                  if($key != 'password' && !is_numeric($key))
24                      $_SESSION['login_'.$key] = $value;
25              }
26                  return 1;
27          }else{
28              return 2;
29          }
```

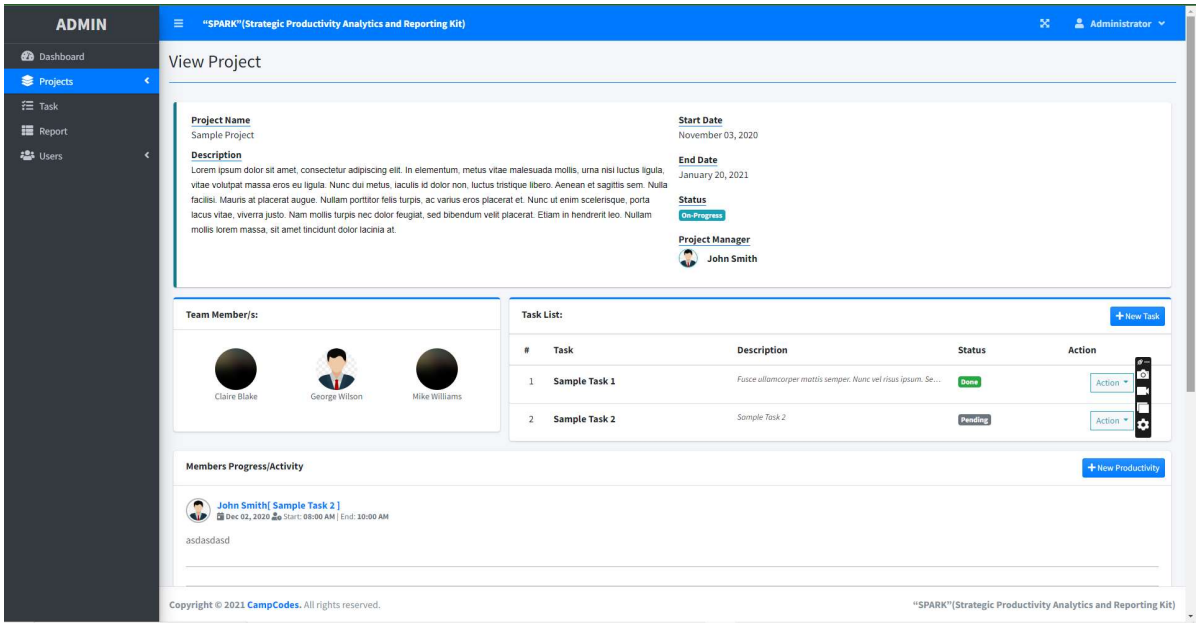
Admin page



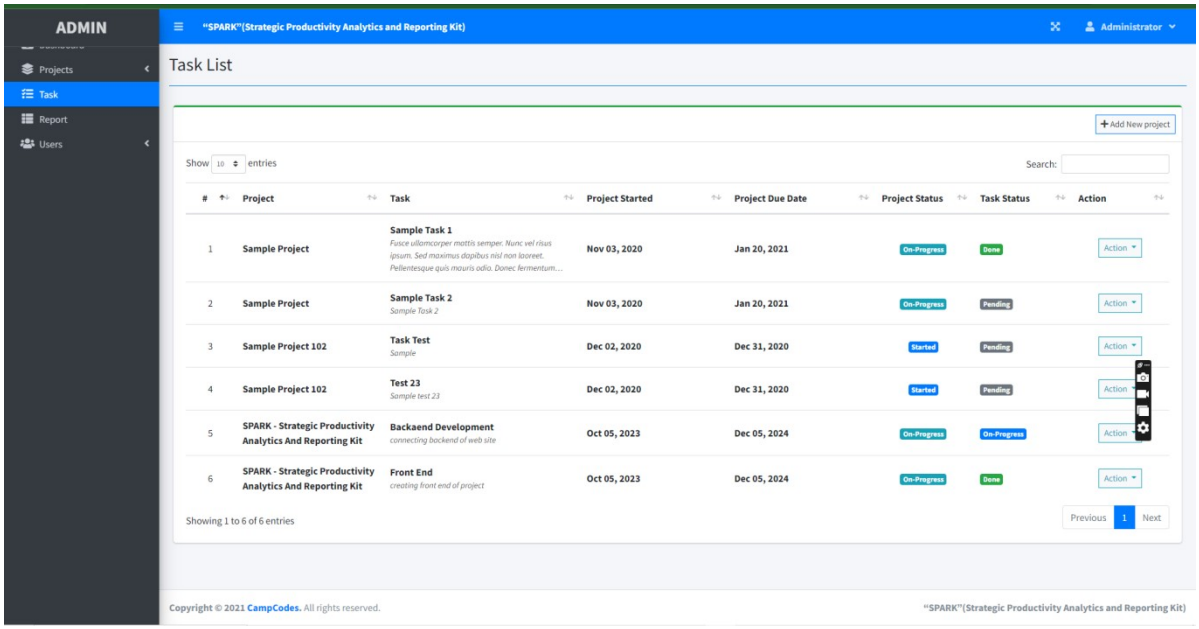
Login page



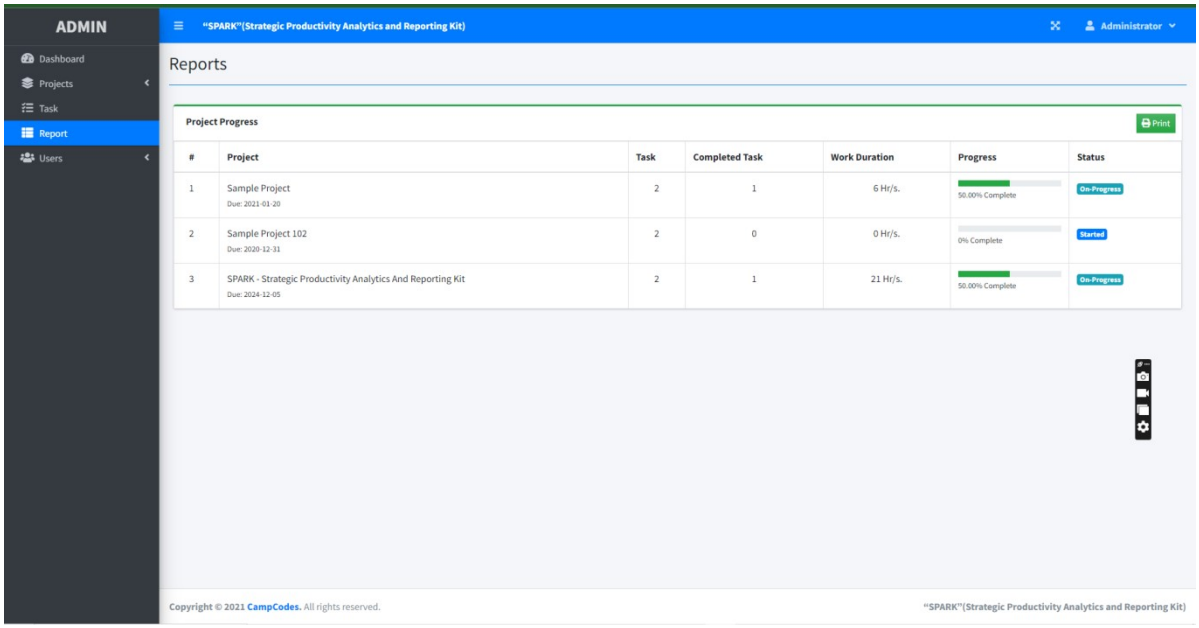
Dashboard/home page



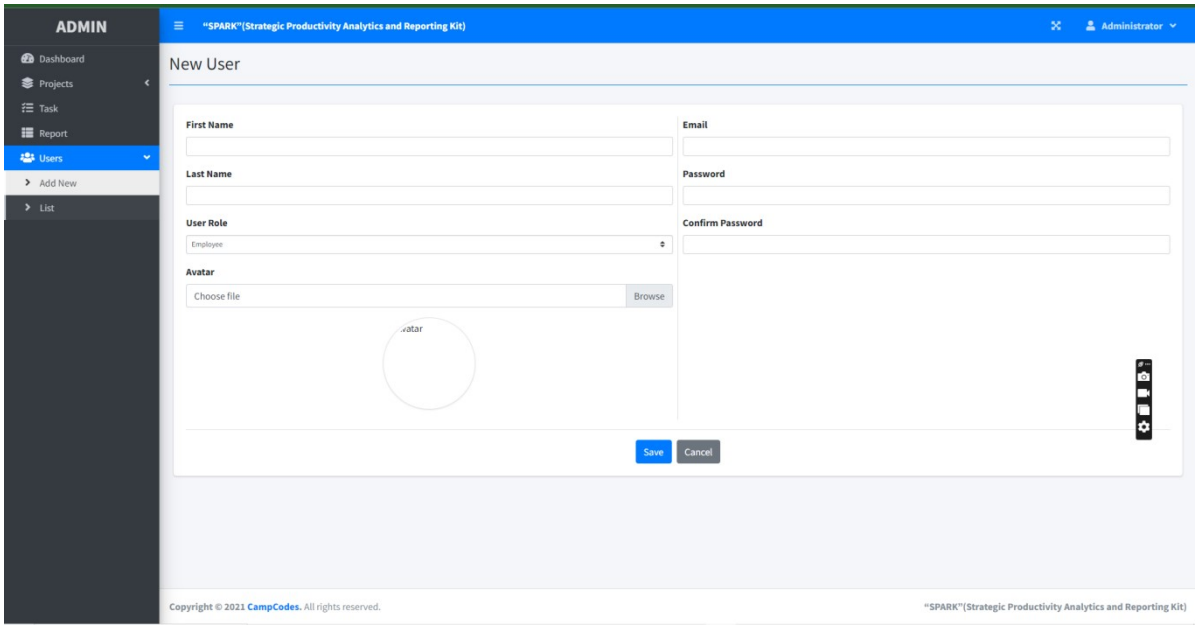
Admin page



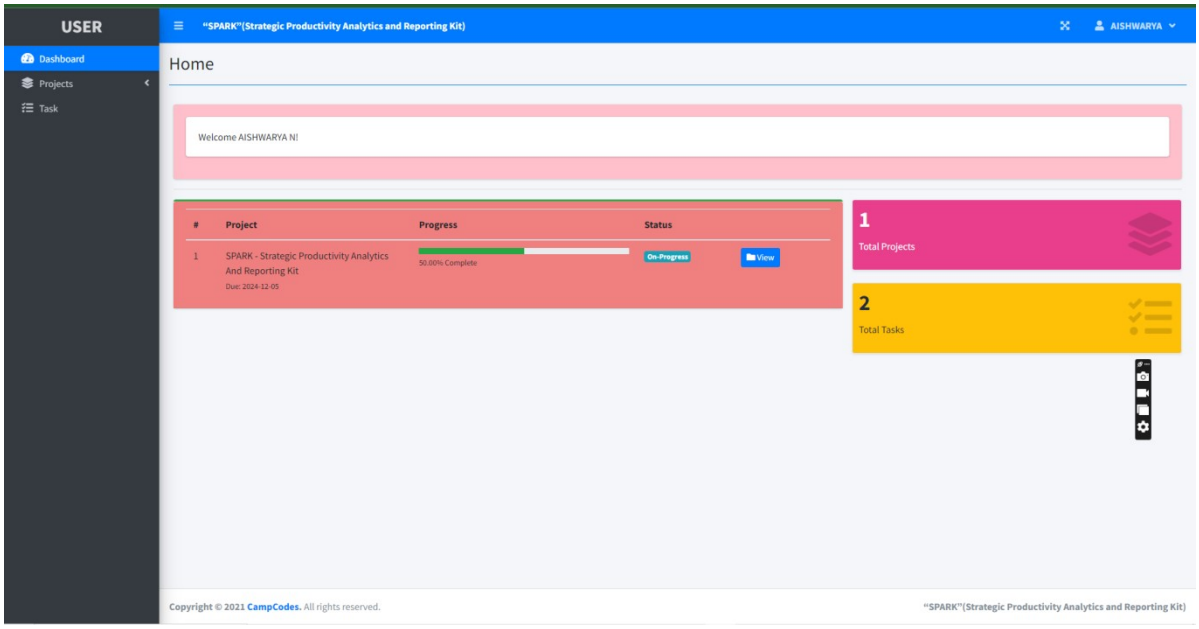
Task List



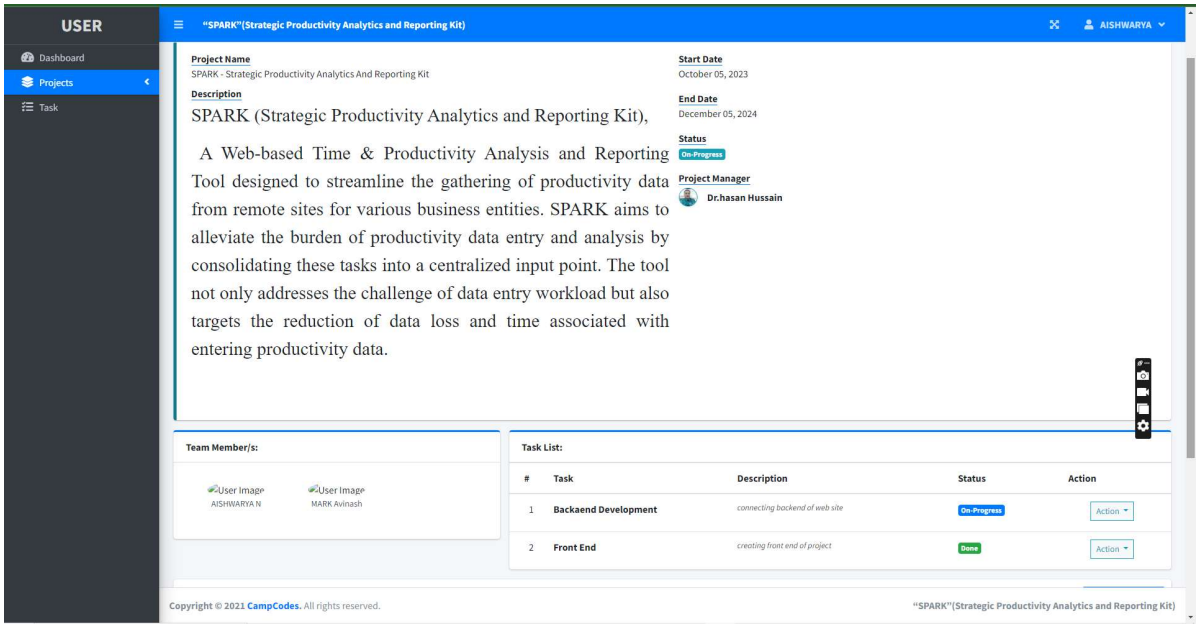
Report page



New user page



User dashboard

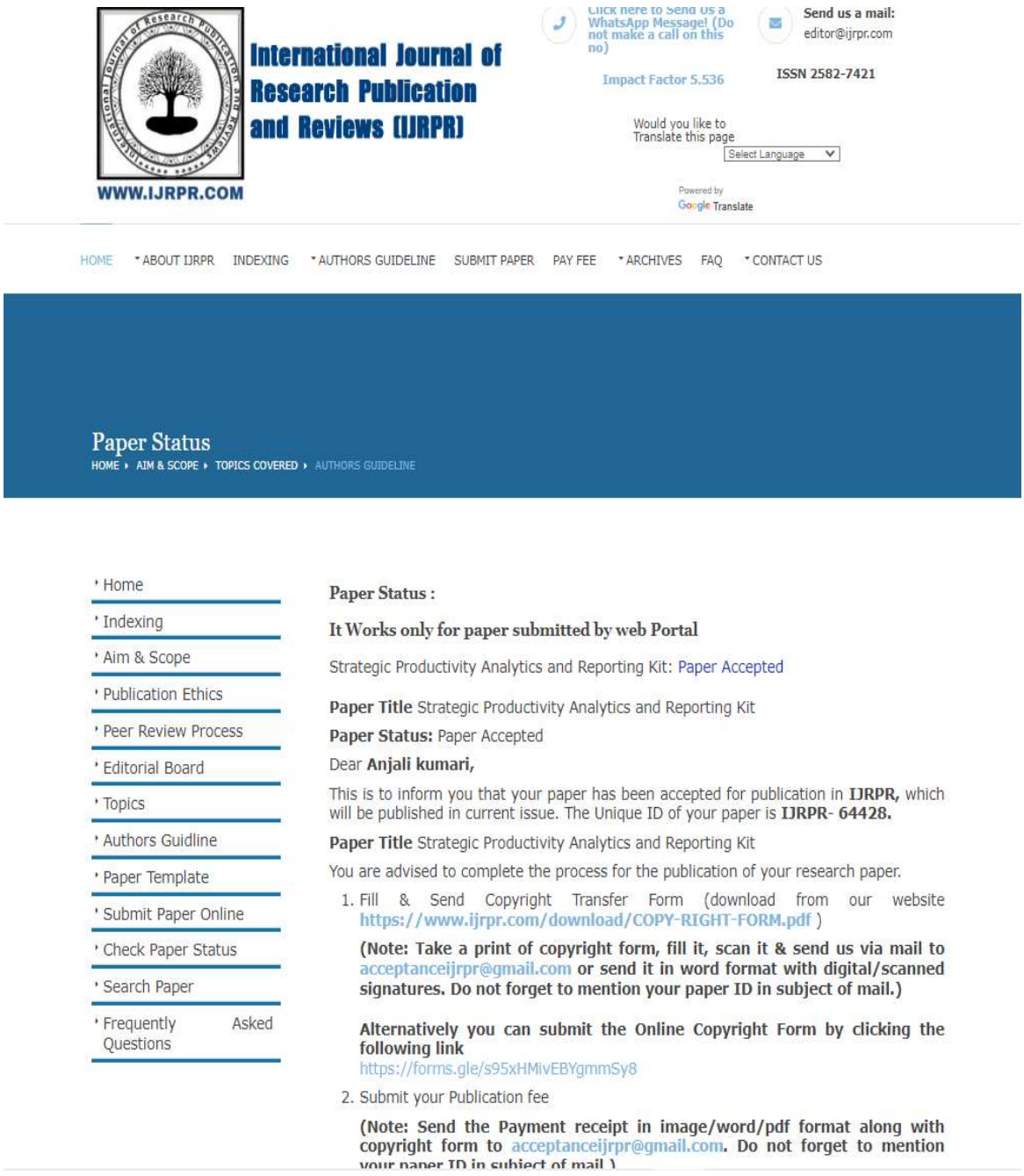


User task management page

APPENDIX-C

ENCLOSURES

Acceptance letter:-



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SDG 9: Industry,Innovation and Infrastructure:-

SDG 9, which focuses on building resilient infrastructure, promoting inclusive and sustainable industrialization, and fostering innovation, aligns with a project management system in the following ways:

Infrastructure Development: The project management system plays a crucial role in advancing digital infrastructure, fostering efficient collaboration, and enhancing communication among team members. This active contribution aids in the realization of resilient and sustainable infrastructure as outlined in SDG 9.

Inclusive Industrialization: The system serves as a facilitator for inclusive project development by providing a collaborative platform accessible to a diverse range of team members, stakeholders, and communities.

Innovation: The project management system itself represents a noteworthy innovation, revolutionizing project processes and enhancing overall efficiency. By streamlining workflows and introducing novel approaches, the system contributes to SDG 9's target of fostering innovation in the pursuit of sustainable development.