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Ask Genie- An Affordable Solution for Prompt, Code and Image

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Abstract: *In the current digital age, fostering creative exploration and efficient workflows is paramount. AI tools address this need by creating a user-centric web app that seamlessly integrates prompting, code generation, and image generation. This innovative combination empowers users to overcome creative hurdles and streamline their workflow. Imagine a writer struggling with writer's block; the app's prompting tool can spark new ideas. A programmer facing a complex coding task can utilize the code generation feature to expedite development. An artist can use the image generation function to visualize their concepts. This project recognizes the potential of AI to democratize creative processes and enhance productivity across various fields. This project outlines the development of a web app that tackles the challenges of integrating diverse AI tools into a cohesive user experience. The project highlights the importance of API selection and optimization to deliver a robust and valuable AI-driven platform.*

Keywords: AI-driven platform

I. INTRODUCTION

In the era of smart cities and sustainable living, the integration of Internet of Things (IoT) technology into waste management has given rise to innovative solutions like smart dustbins. These advanced waste containers are designed to enhance the efficiency of waste collection and promote responsible waste disposal. Smart dustbins are equipped with sensors that monitor waste levels, detect types of waste, and even assess odor levels. This data is transmitted in real-time to a centralized system, allowing municipal authorities to optimize collection schedules, reduce operational costs, and minimize the environmental impact of waste management. Additionally, smart dustbins can be integrated with mobile applications to inform users about proper waste segregation and promote recycling initiatives. By providing real-time feedback, they encourage communities to participate actively in maintaining cleanliness and sustainability. Overall, smart dustbins represent a significant step towards smarter urban infrastructure, leveraging technology to create cleaner, more efficient, and environmentally friendly cities. Artificial intelligence (AI) is revolutionizing numerous fields, streamlining tasks and sparking innovation across industries. AI refers to the development of computer systems that exhibit behaviors we associate with human intelligence, such as learning, problem-solving, and adapting to new situations.

1.1 Problem Statement

- Inefficient Waste Collection
- Overflow and Littering
- Lack of Data-Driven Insights

1.2. Objective

- Traditional waste collection methods often rely on fixed schedules, leading to either premature pickups or overflowing bins. This inefficiency results in wasted resources and increased operational costs.
- When bins are full, waste often overflows, leading to littering in public spaces. This not only creates an unsightly environment but can also attract pests and contribute to pollution.
- Municipalities typically lack real-time data on waste generation and disposal patterns. Without this information, it's challenging to plan for future waste management needs or assess the effectiveness of recycling initiatives.

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II. PROPOSED SYSTEM

The system architecture of the AI SaaS Application Platform is designed to achieve the aforementioned goals. The architecture is based on a three-tier model, separating the presentation layer, application layer, and data layer.

- Presentation Layer: Developed using Next.js and React for a dynamic and responsive user interface. Tailwind CSS for styling, ensuring a visually appealing and consistent design. o Implements client-side rendering (CSR) for enhanced interactivity.
- Application Layer: Utilizes a serverless architecture with Next.js for server-side rendering (SSR) when needed. Implements microservices for individual AI tools, promoting modularity. o Handles user authentication and authorization. o Integrates with external APIs, including Stripe for payment processing.
- Data Layer: Employs Prisma as the data access layer for database interactions. Stores user data, AI tool configurations, and payment information o Ensures data security and privacy through encryption and access controls.

III. RESEARCH METHODOLOGY

Research methodology for a virtual dressing room typically involves a combination of qualitative and quantitative approaches to understand user preferences, behaviour, and satisfaction. Here's a basic outline of the steps involved:

3.1 Literature Review

K.K. Hati[2] an efficient Background Subtraction Method for accurate Object Detection is proposed. Local Illumination based Background Subtraction (LIBS) method is used. Background modeling is done by defining an intensity range for each pixel, shadows are eliminated, which is an added advantage of this method.

Bhumika Gupta[3] Computer vision and the image processing for certain class in digital images and videos improving accuracy of object are presented.

Raghunandan,Apoorva,HV Ravish Aradhya[4] Object detection algorithm for video surelliance application,it uses range of image processing application for extracting the object desired portion.

Object Management Group: MDA GuideV1.0.1, http://www.omg.org/mda/. 12th June 2003

Bell, Michael (2008). "Introduction to Service-Oriented Modeling". Service-Oriented Modeling: Service Analysis, Design, and Architecture. Wiley & Sons. pp. 3. ISBN 978- 0-470-14111-3. 6. Bell_, Michael (2010). SOA Modeling Patterns for Service-Oriented Discovery and Analysis. Wiley & Sons. pp. 390. ISBN 978- 0470481974..

3.2 Keywords and search parameters

Purpose The purpose of this Software Requirement Specification (SRS) document is to define the requirements for the Smart Dustbin system that leverages Internet of Things (IoT) technology to enhance waste management processes. This document aims to ensure a shared understanding among stakeholders about the functionalities, performance, and constraints of the system.

Scope The Smart Dustbin system is designed to: Monitor the fill levels of waste bins in real-time. Sort and identify recyclables using built-in sensors. Communicate data to waste management services for optimized collection routes. Engage the community through notifications and feedback mechanisms. This system targets municipalities, waste management agencies, and citizens, aiming to reduce operational costs, prevent overflow, and promote sustainability

Intended Audience

This document is intended for:

- Project Managers: For planning and resource allocation. Developers: To guide the software design and implementation.
- Quality Assurance Teams: To establish criteria for testing and validation. End Users (Municipalities and Waste Collectors): To understand the system's capabilities and features.
- Community Stakeholders: To engage with and utilize the system effectively

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[4] A comprehensive resource on deep learning, covering various architectures that could be applicable in developing the Ask Gemini AI model.
[5] Jurafsky, D., & Martin, J. H. (2023). Speech and Language Processing (3rd ed.). Pearson.
[6] This book provides an in-depth look into natural language processing (NLP), crucial for understanding text-based AI applications.