

Comprehensive Digital Advertising Platform For Diverse Products

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Abstract- *The main aim of this project is to provide advertisement details like advertisement cost in various TV Channels, Newspapers, Online Websites. Advertisements are very necessary in order to market or promote the product of the particular product. Advertisements can be done through the online mode through the radio, television, social networking sites so that it will gain nice promotion. Online advertisement management system is an application that deals with maintaining the advertisements given by the customers to the company. There will be many customers with different advertisements for a particular company. Maintenance of all the data using pen paper work is a tedious job. So to reduce the manual effort, the online advertisement management application will be of great help. This application will be very useful to the advertising agencies and the managers to manage advertisements and to view reports.*

I. INTRODUCTION

Advertising agency is an online creative platform that helps to run your business smoothly. It's a single platform by which you can implement your creativity, make analysis, put your ideas without using pen and paper and get the reports just by one click. It's a project integrated with content management system to give an excellent look for your business. It's the software by which you can make advertising of any products which you want to sell or launch to the market or for any business purpose. With new advertising agency system, having GUI modern editor which will fulfil all your needs without any effort and helps to gain excellent traffics over this internet. An advertising agency or ad agency is a "service business" dedicated to creating, planning and handling Advertising (and sometimes other forms of promotion for its clients. An ad agency is independent from the client and provides an outside point of view to the effort of selling the client's products or services. An agency can also handle overall marketing and branding strategies and Sales Promotion for its clients. In order to avoid the above problem this project is to provide advertisement details like advertisement cost in various channels. Depending upon the budget the various channels, newspapers and websites can allot different advertisements.

The process of making the advertisement is little because we are going to provide the execution environment for the end users to select the available templates in which the users can easily create their advertisement based on the Media Types (News Paper, Websites, Television, etc). With traditional advertising, an advertiser can place ads on TV shows, radio programs, and magazines, but with web ads, there is no limit to how finely an advertiser can target the audience. Due to the rise in popularity of social media, Facebook and MySpace have become hot spots for advertising. An advertiser can target these platforms using almost any criteria (e.g., age, gender, location, education, place of employment, favorite music, and marital status). Advertising companies, such as Google, which targets ads based on users' search history, have been taking into account users' information needs related to their interests for targeted advertising. An effective interpretation of users' information needs is necessary for targeted advertising. However, problems with the accumulated data that describe users' information needs are huge volume, high dimensionality, and continuous change. Web ads can be presented in various formats, such as text, graphics, sound, video, or their combinations. These formats may attract users' attention much easier due to their sensory effects. So web ads, such as animation plus sound, may increase the opportunity for consumers to process the ads. For example, when users are reading news on the Internet, an animated banner with flashing text may easily attract their attention. However, in the web medium, consumers are highly active and selective. Whether a type of advertising is acceptable or not depends on the consumer's perception of whether the ad could fulfil his or her goals. The different formats of traditional advertising are: billboards, television commercials, radio ads, and posters. On the other hand, various online advertising formats are: banner ads, pop-up and pop-under ads, floating ads, streaming sidebar ads, pull down banner ads, and text ads. The final benefit of online advertising over traditional advertising is the fact that tracking ads has become very easy with Internet advertising compared to traditional advertising. With online advertising, each and every advertising campaign is tracked by the ad server, saving a lot of time and money.

Ad servers monitor all of the visitors who come to an advertiser's website through the advertising campaigns and track any actions they take or orders they make. Ad servers also keep track of the budget, clicks impressions, the conversion rate, and other statistics. This further helps with budget optimization, business decisions, and managing advertising campaigns. With traditional mediums of advertising, an advertiser cannot say for sure whether the customer who is watching or reading the advertisement is actually going to buy the product. Through pay per click (PPC) advertising, the advertiser is actually paying only when the potential customer visits his or her website or looks through the product that is being sold. Online publishing takes a minimum amount of time to include advertising on websites. A publisher can earn advertising revenue from each page of his or her site. Ads relevant to the site's content are delivered to the site as text or images. In the case of Google AdSense, a publisher can implement Google Search on his or her website that then delivers related ads based upon search criteria. Developing banner ads or any other types of site advertisements can be time consuming. Online publishing provides a solution for sites, both big and small, to place ads and search options easily on a site with minimal effort.

II. OBJECTIVE

The Creative Online Advertisement Portal for Multifarious Businesses aims to be a comprehensive digital platform designed to cater to diverse industries and organizations, enabling them to create, manage, and distribute advertisements effectively. By leveraging innovative technologies, the platform fosters engagement between businesses and their target audiences while providing tools to enhance ad creation, performance, and analytics. one-stop portal for businesses from various sectors to showcase their products and services. . So to reduce the manual effort, the online advertisement management application will be of great help. This application will be very useful to the advertising agencies and the managers to manage advertisements and to view report.

III. PROPOSED SYSTEM

This new advertising agency application will help to reach maximum number of persons through its online engagement features. To make them more under stable and stay connected, it's the advertising agency which has used the integration of prime time TV ads, website ads and newspapers features. With the cost effective technology solutions developed in modules, it's easier to handle and manage. This system is self-explanatory from every portions because of its excellent user interface. It's the system by which consumers

will be more under stable and not to be cheated by others. It's the new system which has been developed keeping in view and title of project. In order to avoid the above problem this project is to provide advertisement details like advertisement cost in various channels, various websites, various newspapers and cost also depends on the timing of the ads, content of the ads and ads placement in the newspaper based on the user requirements and depending upon the users budget the cost estimation is given by the admin for user's different advertisements plans.

IV. LITERATURE SURVEY

[1] The Application of Virtual Reality Technology in Advertising Communication. 2020

[Nida Rasheed , Shoab Ahmed Khan, Ali Hassan]

This is proposed a Supervised Random Walks, a new learning algorithm for link prediction and link recommendation. By utilizing node and edge attribute data our method guides the random walks towards the desired target nodes. Experiments on Facebook and co – authorship networks demonstrated good generalization and overall performance of Supervised Random Walks. The resulting predictions show large improvements over Random Walks with Restarts and compare favorably to supervised machine learning techniques that require tedious feature extraction and generation.

Limited Access to Creative Tools: Small to medium-sized businesses often lack access to professional advertising tools or designers to create engaging and effective ads. Inefficient Ad Campaign Management: Managing ad campaigns across multiple platforms (web, social media, etc.) is cumbersome without a unified system. Inadequate Targeting and Performance Analytics: Businesses struggle to target the right audience and assess the effectiveness of their campaigns, leading to wasted marketing efforts and budget. Inconsistent Ad Formats and Formats Management: Advertisements come in many different formats (text, video, banners), and managing these formats across various channels without a standardized system is complex and prone to error.

[2] A Survey on Digital Advertising Technologies.

[Reon Sato , Hiroshi Saito, Yoichi Tomioka, And Yukihide Kohira]

This paper provides a broad overview of digital advertising technologies, highlighting the latest advancements in algorithms, targeting strategies, and ad personalization. It addresses the challenges of ad fraud, privacy concerns, and

evolving user expectations. The study also investigates how artificial intelligence (AI) is transforming the digital advertising space by enabling more precise targeting and real-time optimization of ads. The research highlights the future potential of these technologies to enhance the effectiveness of digital marketing campaigns.

The paper addresses the technological advancements in digital advertising, focusing on how machine learning, artificial intelligence, and big data analytics have enabled more precise targeting and optimization of ad campaigns. Machine learning algorithms analyze vast amounts of data to help advertisers predict consumer behavior, personalize ad delivery, and improve the timing of ad placement. AI tools such as natural language processing and computer vision have further enhanced ad personalization.

V. SOFTWARE DESCRIPTION

A platform is the hardware or software environment in which program runs. We've already mentioned some of the most popular platforms like Windows 2000, Linux, Solaris, and MacOS. Most platforms can be described as a combination of the operating system and hardware. The Java platform differs from most other platforms in that it's a software-only platform that runs on top of other hardware-based platforms.

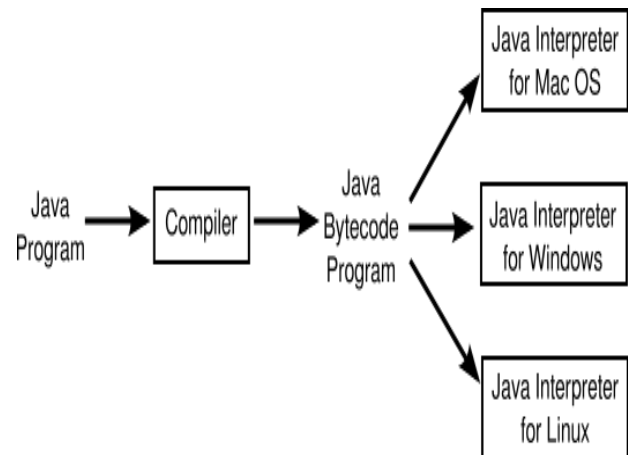
The Java platform has two components

The Java Virtual Machine (Java VM)

The Java Application Programming Interface (Java API)

You've already been introduced to the Java VM. It's the base for the Java platform and is ported onto various hardware-based platforms.

The Java API is a large collection of ready-made software components that provide many useful capabilities, such as graphical user interface (GUI) widgets. The Java API is grouped into libraries of related classes and interfaces; these libraries are known as packages. The next section, What Can Java Technology Do? Highlights what functionality some of the packages in the Java API provide. The following figure depicts a program that's running on the Java platform. As the figure shows, the Java API and the virtual machine insulate the program from the hardware.



Working of java interpreter

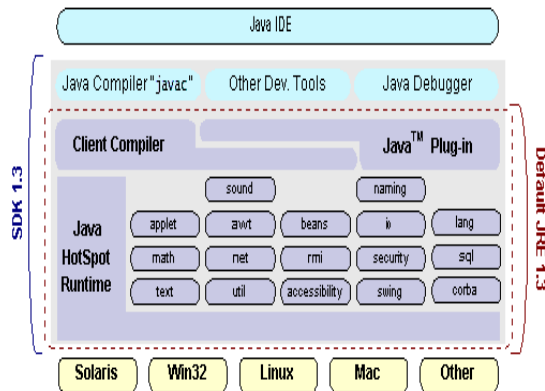
VI. SYSTEM WORKING

An application is a standalone program that runs directly on the Java platform. A special kind of application known as a server serves and supports clients on a network. Examples of servers are Web servers, proxy servers, mail servers, and print servers. Another specialized program is a servlet. A servlet can almost be thought of as an applet that runs on the server side. Java Servlets are a popular choice for building interactive web applications, replacing the use of CGI scripts.

Servlets are similar to applets in that they are runtime extensions of applications. Instead of working in browsers, though, servlets run within Java Web servers, configuring or tailoring the server. How does the API support all these kinds of programs? It does so with packages of software components that provides a wide range of functionality. Every full implementation of the Java platform gives you the following features.

- **The essentials:** Objects, strings, threads, numbers, input and output, data structures, system properties, date and time, and so on
- **Applets:** The set of conventions used by applets
- **Networking:** URLs, TCP (Transmission Control Protocol), UDP (User Datagram Protocol) sockets, and IP (Internet Protocol) addresses

The Java platform also has APIs for 2D and 3D graphics, accessibility, servers collaboration, telephony, speech, animation, and more. The following figure depicts what is included in the Java 2 SDK.



VII. RESULTS AND CONCLUSION

This project has given us great satisfaction in having designed an application which can be implemented to any nearby shops or branded shops selling various kinds of products by simple modifications. There is a scope for further development in our project to a great extent. A number of features can be added to this system in future like providing maintain their own products. Another feature we wished to implement was providing classes for customers so that different offers can be given to each class.

System may keep track of history of purchases of each customer and provide suggestions based on their history. These features could have implemented unless the time did not limited us.

Data preprocessing is a critical step in building a comprehensive digital advertising platform for diverse products, ensuring that the raw data collected from various sources is clean, consistent, and ready for analysis. The first step, data cleaning, involves handling missing values, removing duplicates, and fixing inconsistencies in the data.

This ensures that the dataset is accurate and reliable. Data transformation follows, where raw data is converted into a format suitable for analysis, such as normalizing numerical features to a common scale, encoding categorical variables, and creating new features through feature engineering.

Next, data integration combines datasets from multiple sources like user behaviour, product details, and campaign performance, ensuring consistency in format and merging common data points. Data reduction techniques such as dimensionality reduction and sampling help streamline large datasets, making the analysis more efficient without losing essential information. Outliers, which can distort results, are identified and handled through statistical methods like Z-scores or IQR to either remove, cap, or transform them. Once the data is cleaned and transformed, it is split into

training and testing sets to build and evaluate machine learning models. Cross-validation is often used for a more robust model performance estimate.

Finally, data validation ensures the data meets predefined quality standards and is ready for use in advertising campaigns, confirming that it is consistent and falls within expected ranges. By following these preprocessing steps, the platform can ensure accurate targeting, better campaign performance, and a more personalized advertising experience.

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