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ADWALL- PROMOTION OF OFFLINE MARKET THROUGH ONLINE MEANS

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Abstract: Nowadays newspapers are getting obsolete and the newer generation is getting more dependent on smartphones and similar digital media. Advertising in newspapers is expensive and does not catch the eyes of younger generation. The proposed system is a platform where the user can view the daily offers, flash deals and other advertisement of nearby shops. This application works according to the location where the deals and offers happening in that location will be shown to the user and these deals and offers will be added by the sellers themselves through this application itself. Thus, a new approach to offline and online marketing is introduced here.

Keywords: Digital Marketing, Machine Learning, Promotion

I. INTRODUCTION

The invention of internet provides infinite opportunities for promotions and digital marketing. People tend to use internet more to discover latest deals and opportunities more than conventional means also people often miss out on deals and offers happening around them, that's where Adwall comes in. Adwall is a platform where users can view or publish advertisements and it consists of two modules, one for the customer to view advertisements and another for seller to publish advertisements. As the Internet expands, e-commerce gains increasing momentum, but small brick-and-mortar stores stick by their old ways of operation, and some of them never went into the e-commerce business in the past two decades. With the advent of the mobile Internet age, it gains popularity and its applets are launched.

Adwall collects, organizes, and publishes ads from local markets. Small stores refer to brick-and-mortar retail stores or garment stores. The features of these stores are as follows: they have a small business scale, small capital scale, and most of their customers distribute not far away from the stores. Most small stores rely on the traditional brick-and-mortar business models and have not gone into e-commerce business. Many apps also feature interactive ads that advertisers can choose to display at certain key points during the in-app experience, ensuring a smooth transition for current users of the app. beyond that, when advertisers market within apps, they have a very specific view of their audience. Mobile apps provide better user experiences, load content faster, and are easier to use. Besides, unlike websites, apps have push notifications. Sharing updates, special features, and reminders within an app increases customer loyalty and retention.

Introduction of Adwall will fill in the market gap between online and offline markets. As even the local sellers will now be able to participate in online E-commerce. The sellers can post the advertisements and products they have in store and everyone in the surrounding area will be to view these items. This will also help out users for example people moving into a new area will be able to use Adwall to see nearby store and what they are offering. Like this, there will be lot more scenarios where Adwall will be useful to both customer and seller.

II. Related works

Here are some papers from which the proposed system takes references from.

In this paper [1], the authors propose a location-based mobile advertisement publishing system, a framework for vendor editing, and location-based service. The system is able to provide vendors not only the ability to edit advertisements, but also the means to publish advertisements to consumers. This work presents a location-based mobile advertisement publishing system. The proposed system is able to provide vendors a convenient way for editing and a low cost and effective way to implement digital advertisement publishing mechanisms. In addition, advertisement data desired by the consumers can be viewed when a QR code is scanned, thus providing information for the consumer to access. After interviewing with the vendors, most vendors have positive responses and they would consider the adaption of mobile advertisement if the cost is lower than that of their current advertising methods.

The paper [2] proposes Mobile Yellow Pages with User interest and Location Sensing Ensemble (MyPULSE) system, an easy to use, platform-independent mobile application which enables a user to see image and video-based advertisements, get directions and obtain other important information about products and services offered by local businesses, such as restaurants, hotels, shops, taxicabs, etc. near the current location of the user, whether she is stationary or mobile. The paper proposes simple client-server architecture as a potential solution to designing such a system and discussed how the client-server modules interact with each other. Different future improvements that can be made to upgrade this system into a more interactive and user-friendly system are also mentioned. The privacy and security issues in designing such a system are very important in commercializing such systems. We are currently in the process of designing a security mechanism as well as imposing privacy on the system.

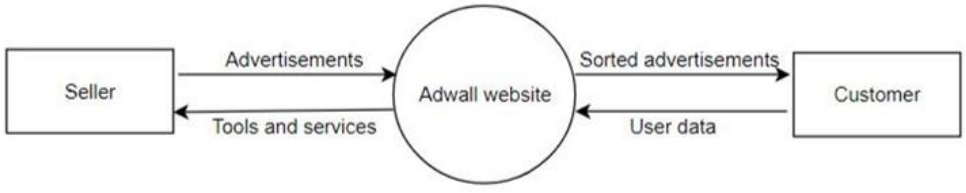
The paper [3] proposes a system for creating and monitoring a competitive and cost-effective pay-per-click advertisement campaign through the web search channel is a resource demanding task in terms of human expertise and effort. The paper presents a prototype and a functional web application for semi- and fully- automated creation, monitoring, and management of cost-efficient pay-per-click campaigns with budget constraints. The preparation of large-scale online advertising campaigns for products, services, brands, or web pages can be a very complex task especially if it is designed for websites with online catalogues or catalogue aggregators. The shops or listings are classified according to the products that they are selling, so each landing page contains important information and relevant description for each category or product that needs to be considered. The number of the various urls inside these domains makes the effort even more complicated regarding the manual insertion of keywords and ad-texts per landing page as well as monitoring and optimizing the performance of each campaign. The proposed system aims at the automation of the mentioned tasks in order to aid the advertisers. The demonstration will present to the audience: a) keyword generation, suitable for AdWords Campaigns, from a given landing page and proposed ad creatives using text summarization, b) an automated method for budget optimization during campaign running time, based on a MCKP (multiple-choice knapsack problem) modelling and capitalizing on genetic algorithms to maximize profit or traffic, the two usual objectives for website advertising, c) a fully implemented and functional prototype system, developed for the Google AdWords platform, which currently occupies a vast share of web-search advertising volume, d) an experimental evaluation on real world data.

The paper [4] introduces the Ad-me (Advertising for the mobile e-commerce user) system, a context sensitive advertising service for the mobile user. This system falls within the broad category of context sensitive service delivery, which may be defined as services that are offered to the user which are primarily determined by location. The ad-me system sits on top of a mobile tourist guide where the motivation and added value service offered to the user is that of context sensitive tourist services accommodated upon a Personal Digital Assistant (PDA) or cellular phone. The tourist content thus provides a carrier mechanism for the true objective of the system that of targeted advertising. Ad-me aims for intelligent and selective advert delivery to the users, i.e., only if they need them when they need them where they need and in a form sensitive to their technological context. The Context-Sensitive Advertising Agent utilises push technology supplying advertisements relative to the user location and perceived need. The latter is adjudged by interrogation of the profile database. The Ad-me system thus provides more than mere content delivery but supports electronic commerce emerging as a result of the content delivery.

The paper [5] presents ShopAssist, a multi-store location-aware application that adapts to the store currently being visited. ShopAssist relies on Bluetooth Low Power to identify the store being visited and perform indoor localization. ShopAssist makes use of a Content Management System (CMS), used by the store owner to upload information, and is capable of interacting with Digital Signage in order to display targeted advertisements in the store. The work proposes a unified, interactive, location-aware system for Shopping. The key idea is to take advantage of the fact that almost every person carries a mobile phone, providing customers a context-aware application for their devices, while at the same time providing business owners a way to engage customers and increase revenue. the work presented in this paper is to develop a system to identify customers and help them locate products in stores, enriching users' shopping experience and bringing added value to the business owners. To achieve this, Bluetooth was the chosen underlying indoor location technology. Additionally, the Estimate platform was chosen to provide indoor localization services. The system presents an interface for business owners – the CMS – that abstracts business owners away from the complexity of deploying a beacon infrastructure to provide indoor localization services. Additionally, the prototype was also designed in tandem with the Digital Signage and Mobile platforms. The former provides users a context-aware shopping experience, with targeted content being shown in the Digital Signage. The latter adds an interactive layer over traditional shopping, allowing users to locate themselves within the store and browse for products in the mobile application.

III. METHODOLOGY

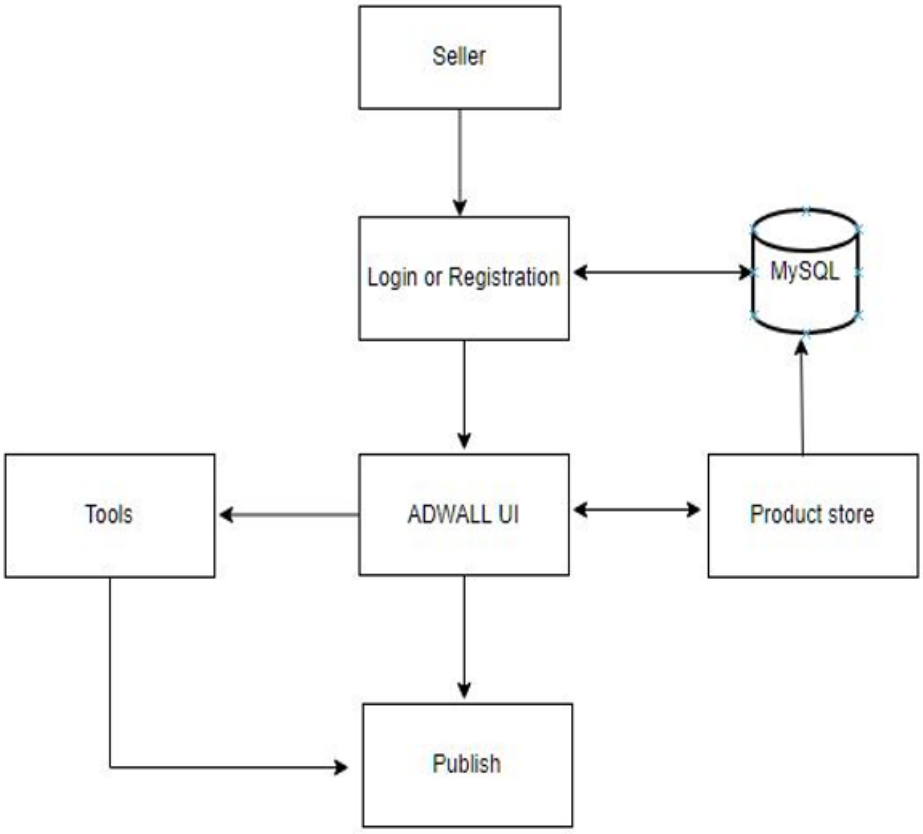
Basically, there are mainly two modules present in Adwall, there is the seller module which is used to post advertisements and update and maintain a product list and there is the customer module where the user will be able to view the published advertisements and browse through the product list. The basic data flow diagram shows what kind of data is exchanged between the platform and the types of users.



Data Flow Diagram

3.1 Seller Module

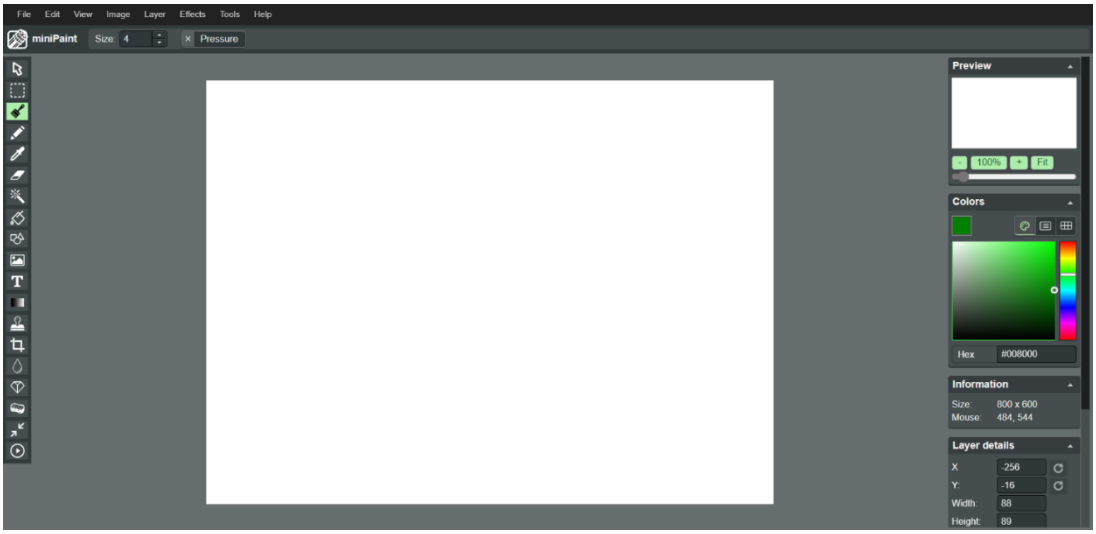
Seller interacts with seller module to publish the advertisements. Seller will need to go through the registration and login which will also verify seller's identity. Once the seller is inside the application, they can either choose to upload their own advertisement or they can make the advertisement using the inbuilt tools provided by the system. Seller can then publish this advertisement to Adwall platform. Since there won't be deals and offers all the time, seller can also maintain an online catalogue which will show the details of the products available at their store.



This is the block diagram of the seller module. Here first of all seller will be greeted with the login and registration page where the seller can register themselves with Adwall if they are visiting Adwall for the first time or they can sign up. For registering as a seller, they will be required to provide an ID proof for verification. After sign in, Sellers can either choose to upload advertisement or update the product list. If they choose to upload the advertisement, they can use the inbuilt tools to make a new advertisement from scratch within Adwall itself or they can choose to upload their own advertisement. After this, the advertisement will be uploaded to the database which is maintained using MSQl. If they choose to update the product list, they can update the details of the existing product they have already added or they can add a new product to the list. This is also achieved using MYSQL. Sellers will also be able to view the updated advertisements after their process of uploading is complete.

3.2 Inbuilt Tools

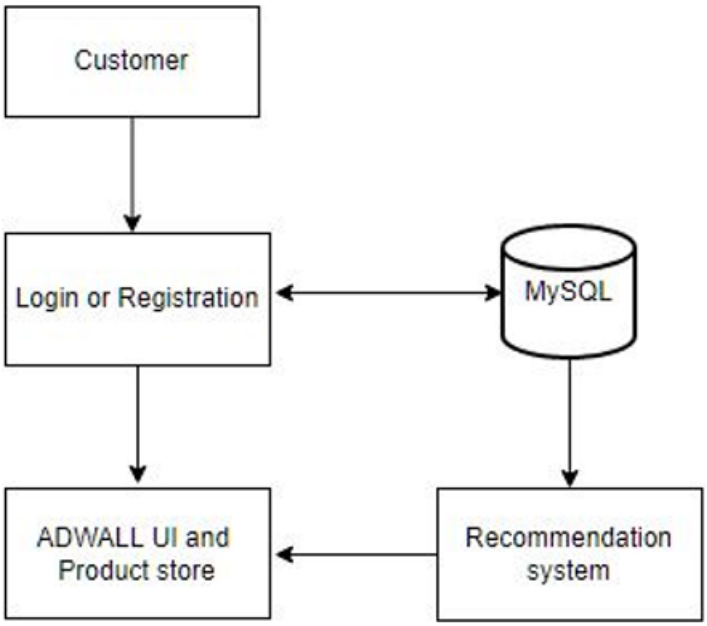
Adwall website offers a set of tools that the sellers can use to create advertisements. This is achieved using minipaint which is implemented using HTML. Minipaint offers multiple tools which the seller can use to craft advertisements according to their liking. Minipaint even offers a library of photos which the customer can use in their advertisements. This is the layout of the minpaint tools. From here the seller can use multiple tools to create their own advertisement and the seller will be able to do all of this for free from Adwall. A smaller version of the editing tools will also be available in mobile but creating advertisements using a computer will be much easier.



Inbuilt Tools UI

3.3 Customer Module

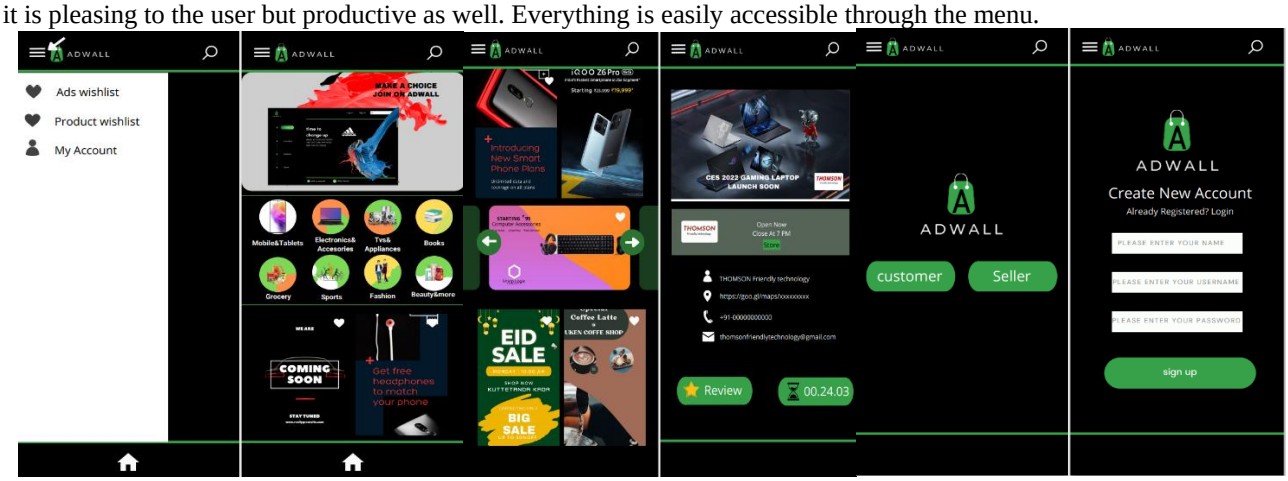
Customer interacts with customer module to view this advertisement published by the sellers. Initially customer will need to go through registration and login and then customer's preferences are collected. Once they are inside the application, they will see the advertisements posted by sellers near their locality. Customers can also interact with the product catalogue made by the seller to know about the product details, stock availability etc… Advertisements are organized according to their categories and if needed customer can search through the catalogue maintained by the sellers. Customers can view the shop's details such as location, contact number, services provided etc… Customers can also give rating and post their reviews about sellers using customer module.



This is the working block diagram of customer module. Similar to the seller module, the customer will be greeted with login and registration page where they can register if they are a first-time user or they can login to their account. From here, Customer will be able to view the advertisements around them which is fetched using GPS, if the GPS is not functional the customer can provide location themselves. The customers can view the advertisements around them or browse through the catalogue provided by the shop owners. They will be able to contact the seller directly or chat with them. Or they can view the direction to the shops with the help of application such as google maps. Advertisements will be sorted according to the recommendation which shows products or shops which have higher rating.

3.4 Adwall UI

The UI is carefully designed so that user can easily interact with Adwall and can easily pick the product or advertisements they want. The products are divided into categories which users can browse through, some of the categories are electronics, grocery, fashion, sports etc. Here is a example of the ui offered by the mobile application. Both the adwall website and mobile application have similar user interface but the desktop site has more functionality and is more interactive. Adwall UI is designed in such a way that it is pleasing to the user but productive as well. Everything is easily accessible through the menu.



Adwall Mobile UI

3.5 Recommender System

The proposed system uses a combination of content based and collaborative based recommender algorithm. This combined with location of the user, Adwall provides user with the advertisement that suits their interests. Combining collaborative and content-based filtering together may help in overcoming the shortcomings that are present due to them working separately and also can be more effective in some cases. The yelp dataset consists of reviews and other data required to train the recommendation system using machine learning. The algorithm used for recommendation is cosine algorithm. The system used cosine similarity to quantify the similarities between movies. Cosine similarity ranges from -1 to 1 and is calculated as the dot product between two vectors divided by their magnitudes. Hybrid filtering can be known as a combination of collaborative filtering and content-based filtering. It is the most common and popular technique today. It avoids the weakness of every single recommender technique. The system must be trained on the available dataset and input from the user to show advertisement according to users.

IV. CONCLUSION

The proposed system provides an innovative method for digital marketing which helps local markets and introduces a mechanism for local sellers to connect with customers near them. The method provides a more cost-efficient platform so that even the small businesses can promote their advertisements. The proposed system brings offers and deals which are available near you to your smartphone which you would otherwise miss out on. The system is designed in such a way that both type of users will benefit from using this application.

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