

Paperwala: Android Application

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Abstract

Android, the pioneering mobile platform, boasts the distinction of being the first complete, open, and free system. Supported by Google and backed by the Open Handset Alliance, comprising over 30 technology and mobile companies, it has revolutionized the handheld industry. With its widespread adoption in 190+ countries, Android powers countless smartphones, tablets, and other mobile devices, offering a versatile platform for mobile app development. Aligned with this objective, we have created an Android app named PAPERWALA. Paperwala is a revolutionary application that aims to solve the problem of pamphlet distribution faced by businesses. With its focus on pamphlet distribution, Paperwala is the perfect solution for businesses looking to increase their reach and revenue. Not only does it benefit businesses, but it also helps newspaper distributors increase their earnings. Moreover, Paperwala promotes the recycling and reuse of paper, making it an environmentally sustainable option for businesses. Offering a user-friendly interface and an effective distribution system, Paperwala emerges as the optimal solution for pamphlet distribution requirements.

Keywords: Android application, newspaper, pamphlet, business, mobile, Paperwala

INTRODUCTION

In today's fast-paced and competitive world, not only small businesses some large businesses too heavily depend on the power of pamphlets to fuel their growth and expand their reach. These compact marketing tools play a crucial role in conveying important information about products and services to potential customers. However, the process of distributing these pamphlets can often prove to be a challenging and time-consuming task for business owners. Traditionally, pamphlets are distributed through newspapers, which act as a reliable medium to reach a wide audience. However, contacting the newspaper distributor in each specific area can be a tedious and demanding process. Business owners need to invest considerable time and effort in reaching out to each distributor individually, ensuring a professional and effective distribution strategy [1].

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The importance of engaging with newspaper distributors in a professional manner cannot be emphasized enough. It is essential for business owners to establish a strong and professional relationship with these distributors to ensure that their pamphlets are distributed effectively and efficiently. This involves crafting well-crafted emails or making phone calls to introduce their business, explain their requirements, and negotiate terms of distribution [2]. By adopting a professional approach, business owners can not only save valuable time but also enhance the chances of their pamphlets being distributed to the right target audience. Ensuring politeness and respectfulness in all interactions with newspaper distributors.

This kind of process is time-consuming and can also be costly. The charges for distributing pamphlets vary among different distributors, making it difficult for small businesses to manage their budget effectively. Furthermore, there is no guarantee that the pamphlets will be distributed to every household in the target area by the newspaper distributor. As a result, small business owners often find themselves wasting money on ineffective distribution methods, hindering their ability to attract customers and grow their business [3].

“PAPARWALA”, an innovative android application specifically developed to tackle the various challenges faced by businesses and newspaper distributors [4].

This state-of-the-art platform provides a smooth and efficient solution for pamphlet distribution, streamlining the entire process. By simply uploading your meticulously designed pamphlet and choosing your desired location, you can effortlessly reach your target audience [5]. Moreover, PAPARWALA provides a convenient way for business owners to book advertisements from any corner of the city, eliminating the need for physical visits or time-consuming processes. With PAPARWALA, one can experience a new level of convenience and efficiency in your advertising endeavors.

Using the PAPERWALA application, business owners can effortlessly expand their reach to a broader audience. They simply need to upload their pamphlet design, select the desired newspaper and area for advertisement, and make the payment. PAPERWALA takes care of everything, from printing to distribution. Business owners receive confirmation of pamphlet distribution [6].

LITERATURE REVIEW

Feature promotions or advertised deals are integral components of retailer marketing endeavors. Marketing managers of retail stores are particularly concerned about the efficacy of store flyers as part of their marketing strategy. The study by Dobrinic aims to explore this issue further by examining the impact of brand presence in flyers on consumer preferences for both national brands and store brands. To achieve this objective, a Multinomial Logit Model (MNL) is employed to assess parameters specific to brands featured in store flyers. Using these specific parameters, a "competitive flyer effect" ratio is calculated to determine which brand benefits, most from being featured in the same flyer. The findings offer valuable insights for both retailers and manufacturers on enhancing the effectiveness of store flyers [7].

The paper on MarkWide Research investigates how the content of a retailer's weekly store flyer influences store performance. It examines and validates hypotheses regarding the impact of the flyer's size, average discount size, and allocation of space to different categories and brands on store traffic and sales. Additionally, it explores and empirically verifies the moderating influence of location variables such as the sociodemographic profile of the trading area residents, store characteristics, and competition. The findings offer valuable insights for retailers regarding the financial consequences of store flyer competition [8].

Store flyers are significant media platforms showcasing retail and brand promotions. Despite their importance, there is a gap in understanding how customers react to them. To address this, Nappi conducted a field experiment involving 5000 retail customers to assess flyer effectiveness. Through Intention-To-Treat analysis and Subgroup Analysis as post-hoc analyses, he aimed to uncover any unexpected treatment effects. Empirical evidence challenges the effectiveness of untargeted flyer distribution. Subgroup Analysis offers additional insights at the customer segment level [9].

METHOD

The application discussed in this study is called Paperwala, which is a Pamphlet Distribution Application. Paperwala was developed using Android Studio as the platform and Kotlin and XML as the programming languages.

Mongo dB is used at the backend side.

The initial step involves downloading the latest version of Android Studio along with its Android SDK and Android Virtual Device. Once Android Studio is installed and its environment is configured, the API level is set. To set the API level, navigate to File > New > New Project to create a new project. In the Create New Project window, input the values provided below [10]:

Application name: "Distribution App"

All of this information will be utilized to generate the package name. This encompasses all the data pertinent to the development of the Android application, which is referred to as an Android package file, essential for uploading to the Google Play Store. Finally, specify the location to save the application file.

If a developer intends to initiate a new application with different requirements, they should opt for the Empty Activity project template. Proceed by clicking on Next and accept the default activity name (Main Activity). Click Finish. All of these are Android package files that need to be submitted to the Google Play Store.

In the final field, you will specify the directory where you wish to save the file. If you prefer to customize your application, you should select the blank activity from the activity module. With this activity, you can add additional components to your application as desired. When you open the application in Android Studio, you will notice two files: 'activity_main.xml' and 'content_main.xml'. Both serve a similar purpose, but 'activity_main.xml' includes the primary layout when you choose Basic Activity. In 'content_main.xml', you can edit the content.

In Android, there is a set of options referred to as 'Widgets', where you can drag and drop various elements. In Android Studio, instead of displaying XML code, it provides a rendering of how the layout will appear on the screen. If you wish to define the behavior of your application, you need to open the Main Application Kotlin file. You can find these tabs under Application > Kotlin. Once you have set up your code or layout design, you need to test your application. To begin testing, you can run it on an Android Virtual Device called Emulator. Once testing is successful, you will want to run your application on a real device. To do this, first connect your device to your development machine using a Universal Serial Bus (USB) cable. Then, enable the USB debugging option in the Developer options on your device. After that, in Android Studio, you can select the application module in the project window and click on 'Run' in the toolbar. In the Select Deployment Target window, you will choose your device and then click OK button. Android Studio installs the application on your connected device and launches it. Now you will see the application running which you have created on your device, as shown in Figures 1–3.

- *Create*: Called when activity is first created.
- *Start*: Called when activity is becoming visible to the user.
- *Resume*: Called when activity will start interacting with the user.
- *Pause*: Called when activity is not visible to the user.
- *Stop*: Called when activity is no longer visible to the user.
- *Restart*: Called after your activity is stopped, prior to start.
- *Destroy*: Called before the activity is destroyed.

PROPOSED WORK

Initially, users are required to download and install the application on their mobile devices. Once installed, the application stays on the device permanently until deleted or uninstalled by the user. When the user clicks on the application icon, the first thing that appears on screen is the splash screen with the application logo. Then, for the first time, the user has to register in the application. Once registered, the user will receive a username and password. For registration he has to fill the given fields which are username, date of birth, address, email, mobile, Once the user has entered and confirmed their password, they can proceed to register themselves by clicking the "register" button.

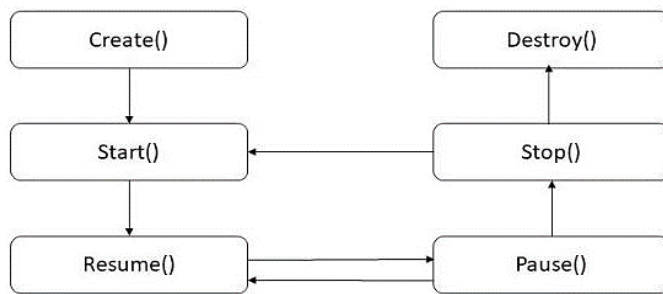


Figure 1. Activity lifecycle.

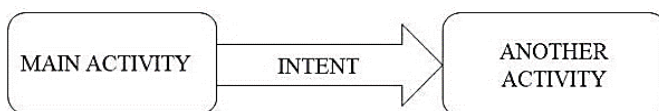


Figure 2. Android Intent to navigate from one activity to another.

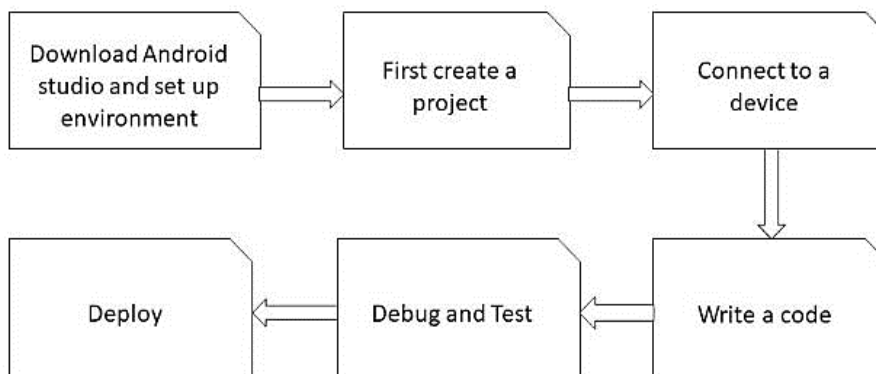


Figure 3. Process to build an Android app.

At that time, all information is stored in a database on the given server by user. Upon successful registration by the user, the application will display a notification message stating "registration successful" in the center of the screen. Various authentication checks are also checked, when registering a user. If both passwords do not match, then the user will be notified "passwords didn't match" and if email is not valid then user cannot register and "email is not valid" statements will be displayed. Following successful registration, the user must utilize the registered username and password to log into the application each time it is used. When signing in, the user needs to provide the registered username and password. Otherwise, if an unregistered username or password is entered, the user will receive a notification message indicating "sign-in failed, please check your connection or seek assistance". After entering the menu screen, it will be displayed with options Business owner, Distributor, Publisher or Printing, Consumer. When a user clicks on any of the given options, he chooses his role and has to behave according to the role.

Business Owner

If user selects Business owner role, then that option creates a leaflet for distribution, design your own type of option, another option is save and print for pamphlet There is another option to choose the place where the business owner wants to distribute the leaflets through the newspaper as per their option and the business owner can check whether the brochure has actually been distributed or not.

Distributor

Click on the distributor tab and distribute the leaflet according to the order of distributor who distributes the leaflet received by the business owner; distributor gets the order and where to distribute, that is actual area chosen by the business owner.

Printing

The pamphlets should be printed where the actual leaflet is printed in the Print option. And that printed leaflet is collected by the distributor.

Consumer

This is the actual customer of the business owner where the business owner wants to distribute pamphlets. The distributor should distribute the pamphlet through the newspaper.

For every role in this application separate dashboard is provided which is very user friendly to that user; and this application is Multilanguage supportive which helps to get understanding regional language.

The actual work cycle is as when the business owner like shopping mall, coaching institute, or any product launching etc. required to distribute the pamphlets in particular area, so, the traditional way for them is to print the pamphlets manually and then go to distributor and give them money and ask them for distribution. This process is too time consuming and there is no any surety that the pamphlets are really distributed or not and another one is in this process paper wastage is now more important issue. So, to solve this problem “PAPERWALA” is the application which solves all these problems in effective way; and using this application, business owners do not have to go anywhere for searching the distributor, as well as for printing the pamphlets in budget and getting the best printing outlet. The actual process is when the user or business owner wants to make advertisement through pamphlets in particular city or any particular area in city then the user puts his own advertisement design and then selects the printing outlet where he/she gets the best deal in price and then the user selects the targeted city or area according to his/her choice or according to their requirement and then there is an option to select which newspaper, along with a pamphlet, is distributed. This option indicates which newspaper sells the most in that particular city or area which is helpful for business to reach out to more customers’ houses. After completing this process, the role of newspaper distributor starts where newspaper distributor is communicating with printing outlet and collects all the pamphlets and then all the pamphlets should be inserted along with newspaper and then distributed to homes of customers. This process gives a good side income for distributors along with newspaper distribution and not for single day but most probably everyday which helps them to boost their daily as well as monthly income.

Now, the important issue is waste of paper in this process; the costumers read the distributed pamphlets and then they throw in dustbin. Using this application, the costumer also gets the benefit if they collect all the pamphlets every month, where we proposed one way to recollect all the pamphlets form them and give them a discount in their monthly newspaper bill. Using this way, the customer and distributor both get benefits.

If there is any query then having the good customer support with the help of Chabot and technical team handle all issues; and this application is having good payment support like PhonePe, Google Pay etc.; also, the most important way which is tracking the order, helps the business owner that what is his/her order status, according to which they can communicate with the distributor.

HARDWARE/SOFTWARE REQUIREMENTS

Software Requirements

1. Operating System: Android.
2. Programming Language: Kotlin.
3. IDE: VS code.

Hardware Requirements

1. i3 Processor or AMD.
2. RAM: 8 GB.

Advantages Businesses

PAPERWALA offers an innovative platform for businesses to distribute pamphlets efficiently. With this platform, businesses can save both time and money while reaching a wider audience faster than ever before. Whether you are a small business owner or a large corporation, Paperwala is the perfect solution for all your pamphlet distribution needs.

Distributors

With PAPERWALA, distributors can now easily connect with businesses and reach a wider audience, maximizing their potential income. This innovative platform not only enhances their earning potential but also elevates their lifestyle, offering them a chance to improve their financial well-being. Say goodbye to traditional methods of pamphlet distribution and embrace the convenience and profitability of Paperwala.

Printing Presses

PAPERWALA is a revolutionary platform that connects pamphlet printing presses with potential customers, allowing them to increase their orders and boost their earnings. With Paperwala, printing presses can showcase their services and reach a wider audience, attracting more clients and generating more business. This user-friendly platform provides a seamless experience for both printing presses and customers, making it easier than ever to find and order high-quality pamphlets. Whether you are a printing press looking to expand your customer base or a business in need of professionally printed pamphlets, Paperwala is the perfect solution to meet your needs.

Consumers

Paperwala is a unique platform that allows consumers to return pamphlets and receive rewards in return. This initiative not only contributes to environmental cleanliness but also motivates individuals to engage actively in the endeavor, creating a mutually beneficial outcome for both consumers and the environment.

USER SIDE SCREEN

User side includes splash screen, home screen with menu bar, registration screen, and payment gateways as shown in Figure 4.



Figure 4. User side screen.

CONCLUSION

In conclusion, PAPERWALA is a game-changer in the world of pamphlet distribution. With its focus on speed, efficiency, and sustainability, it offers distributors a powerful tool to maximize their earning potential while minimizing their environmental impact. Whether you are a small business owner or a large corporation, PAPERWALA is the perfect solution to take your pamphlet distribution to the next level. Its ability to streamline the process, increase earning potential, and promote sustainability through paper recycling and reuse make it an invaluable tool for distributors. With PAPERWALA, distributors can embrace the digital age and make their pamphlet distribution efforts more effective and environmentally friendly.

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