

Printing Solution: Online Printing with the Help of Android Mobile Application

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Abstract – This paper presents the “printing solution” android mobile application for printing, which helps customers to print their printing stuff online without going to a different printing press. Now a day’s printing has become the part of everyone’s life, whether it is businessman, commercial dealer, wholesale dealer, shopkeeper, teacher, student, etc all are connected to printing. Today customers are visiting printing press to print their printing stuff, but with the help of printing solution mobile application customer are no longer need to go to the printing press, by sitting at their home they can print number of things at any time. The “printing solution” mobile application consists of printing options such as visiting cards, wedding cards, bill books, letterheads, banners, pamphlets, etc. All these options are available to a customer for printing. The android studio software is used to make this application, xml language is used for designing the front end and java language is used for backend connectivity and firebase is used as a database.

Keywords– Printing Solution, Mobile Application.

I. INTRODUCTION

In today's world, all people are directly or indirectly connected to printing. Now printing becomes the need for the number of people. For printing any printing stuff people used to go to the printing press, to avoid all this and to save the customer time and bring the printing industry online “PRINTING SOLUTION” mobile application is introduced. It is an android mobile application or we can call it as the online printing press that helps people to print their printing works online, they can order their printing works at any time and from anywhere and within the given amount of time the printing stuff will be delivered to the customer.

After much research and study of different papers and websites, it is found out that, there is still no such mobile application for printing are available. Many websites are there which provides printing options for printing, but the websites are providing less number of printing options. There are many websites which are only providing printing options for bill book and visiting cards. Some websites are there which only provide options for letter pads and wedding cards.

None of the websites are not providing all the options for printing which are offering by the “PRINTING SOLUTION” mobile application. So in future Printing Solution may become the game-changer in the printing industry. The printing solution is loaded with a variety of Options for printing which includes visiting cards, wedding cards, Bill books, Banners, and Letterheads.

If a customer wants to print any printing works they just have to install the “PRINTING SOLUTION” application, select the category, what they want to print then fill

details and then book their orders, by booking their order customer will get their order soon. After placing the order the information will directly come to the database of printing solution, Once the printing preview is generated then it will be sent to the customer for further corrections and mistakes, after the confirmation of customer, the order will go for printing and customer will get their printing order soon. It is also consist of delivery options so that the customer will get their printing work at their home.

II. PROBLEM STATEMENT

Till now for any printing works customer goes to the printing press, where they tell their printing requirements to the printer and they visit again for checking samples and again to take their printing order. For such small printing works people are visiting multiple times to press and sometimes all the printing options are not available at particular press so peoples need to roam to a different printing press. The printing industry is one of the fastest-growing industries in today's world but still, it is not online just like clothing and food industries. Though there are many websites for printing they are not providing many printing options. So to avoid all these and make the printing industry online and to save people’s time “PRINTING SOLUTION” is introduced.

III. PROJECT METHODOLOGY

The “PRINTING SOLUTION” android application is developed on the “Android Studio”. The android studio is the integrated development environment (IDE) for Google’s Android operating system, built on “JetBrains

IntelliJ IDEA software and designed specifically for android development". In the android studio, XML language is used for designing the front end UI, and JAVA and KOTLIN language are used for backend. For developing the Printing solution application XML and JAVA languages are used.

Following are the Important Components which are used in Android Studio for developing the printing solution application:-

- Activity.
- Layouts.
- Image View.
- Text View.
- Card View.
- Recycler View.
- Jsons Files.
- Scroll View.
- Horizontal Scroll View.
- Libraries And Dependencies.

1. Activity:-

An "Activity" is simply a single screen with a user interface just like a window or frame of java. With the help of the activity, we can place our components or widgets on a screen. There are different types of activity are available in the android studio. But only 3 types of activity are used in this application [1].

Empty activity- For designing the modules.

Navigation DrawerActivity- For designing Dashboard.

Login Activity- For designing the login page.

2. Layouts

The layouts are the basic building block for the user's interface; with the help of the layouts we can place our components or elements on the screen. All elements in the layout are built using a hierarchy of view and view group objects. A view usually draws something the user can see and interact with, whereas a view group is an invisible container that defines the layout structure for view and others via group objects [2].

In this application, two layouts are used.

Linear Layout- is a layout that organizes its children into a single horizontal or vertical row. The dashboard and login page is designed on the linear layout [2].

Relative Layout- specifies the location of child objects relative to each other or the parent. All the modules of printing solutions such as bill book module, wedding card module, etc. are developed on the relative layout [2].

3. Image View

The Image_View is one of the android widget or element which is used to display "images" on the screen. It is defined in XML layout and "src" is a keyword is used to call images from drawable. Height, width, scale type, padding, margin, etc. are attributes of the "image view"

With the help of image_view widget all the images are displaying on the screen of printing solution [1].

4. Text View

The text_view is also an android widget or element which is specially used to display "text" on the screen. It is defined in the XML layout. Height, width, text_size, text_color, text_allingment, padding, gravity, margin, etc. are the attributes of the text_view. All the text is displaying with the help of text_view in the application [1].

5. Card View

The Card View is one of the frame layouts with features such as background, round corner, and shadow. Cardview_card,

Backgroundcolour, Cardview_cardcornerRadius, CardView_card, MaxElevation, etc. are the attributes of the Card_View. All the design or templates which are shown in the application are displaying with the help of the Card_View. Inside Card_View Image_view and Text_view are taken along with layout and templates are displayed [1].

6. Recycler View

The Recycler view is one of the most advanced concepts of android studio, All the E-commerce application are using recycler view while developing their application. The Recycler view is a widget of the android studio which is an advanced and flexible version of a list view. The designs of bill books, wedding cards and visiting cards, etc. are displaying with the help of recycler view. First, all the images along with text are taken inside the card view and then the list of card view is displayed with the help of recycler view [1].

7. Jjson Files

The JSON file stands for JavaScript Object Notation. The main purpose of the JSON file is to interchange data from the server to the desired place. Apart from this, JSON is a light weighted data exchange format that is used to parse data. In this application, JSON files are used to connect the server to the application [1].

8. Scroll View

A scroll view is a view group that allows the view hierarchy placed within it to be scrolled. It allows only scrolled in a vertical direction. The lists of designs of cards are shown with the help of scroll view [1].

9. Horizontal Scroll View

Horizontal Scroll view is used to scroll the contents in horizontal form. Cards in horizontal view can be scrolled in linear horizontal representation.[1]

10. Libraries And Dependencies

While making any android application one of the most essential things is the libraries and dependencies. The

libraries and dependencies consist of many built-in functions that help while developing applications. There are many libraries and dependencies are present in android studio, which helps developers to perform many complex functions easily.

Following are the list of libraries that are used in Printing solution application:-

- Androidx.Appcompat: Appcompat:1.1.0.
- Androidx.Constraintlayout:Constraintlayout:1.1.3
- Com.Google.Firebase:Firebase-
- Auth:19.2.0androidx.Test:Runner:1.2.0
- Androidx.Test.Espresso:Espresso-Core:3.2.0
- Androidx.Cardview:Cardview:1.0.0
- Pl.Droidsonroids.Gif:Android-Gif-Drawable:1.2.17
- Com.Android.Support:Design:28.0.0
- Com.Google.Firebase:Firebase-Analytics:17.2.1
- De.Hdodenhof:Circleimageview:3.0.1
- Com.Google.Firebase:Firebase-Database:19.2.0

IV. MODULES AND DESCRIPTION

The "PRINTING SOLUTION" consists of eight modules which are listed below:-

1. Login Page
2. Registration page
3. Dashboard
4. Visiting Cards
5. Wedding cards
6. Bill Books
7. Letter pads
8. Pamphlets

1. Login Page

This is the first page of the application in which the user will log in with its credentials. It consists of a username and password user that have to enter its credentials to access the dashboard.

2. Registration Page

This page consists of a form in which customer has to enter their details, such as name, address, contact number, user id, password, etc.

3. Dashboard

After login and registration customers will directly enter the dashboard. The dashboard consists of printing options for visiting card, wedding cards, letter pads, pamphlet, bill books, etc.

4. Visiting Cards

The PRINTING SOLUTION consists of visiting card options for printing. It consists of a variety of visiting card. The PRINTING SOLUTION provides two options of visiting cards that is 1) 250 GSM, 2) 350 GSM, this is the thickness of the visiting card. For printing the visiting card user should click on the visiting card template, then

another page will open which asks the thickness of the visiting card if the user clicks 250 GSM then the page will open which consists of the number of options for 250 GSM visiting cards. Then the user will choose options, which are select size (the user wants to print single side or front/backside) and the quantity (the quantities are 500, 1000, 2000) then it will place an order, this is all about 250 GSM visiting cards. Now for 350GSM card, it consists of two options which are MATT LAMINATION visiting card and VELVET LAMINATION visiting card now after if the user wants to print MATT CARD it will click on Matt card template it will select sides (single/front/back) and quantity. And similarly for velvet card also then it will place their order, this is all about the process of visiting cards.

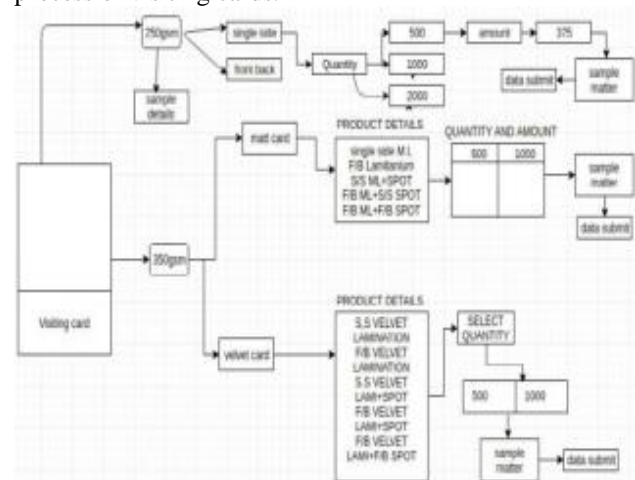


Fig.1. DFD for placing order of Visiting Cards.

5. Wedding Cards

The "PRINTING SOLUTIONS" also provides printing options for wedding cards it has a variety of wedding cards there is the number of printing options of wedding cards such as Rota printing, screen printing, offset printing. Printing solutions also provide the number of design options for a wedding card, it has several designer wedding cards, simple wedding cards, laminated wedding cards, three folder wedding cards, four folder wedding cards, two folder wedding cards, gloss wedding card, etc. For printing, any wedding card user just has to click on Wedding card template than choose the desired wedding card, after that customer has to fill details such as the quantity of wedding card description of wedding cards, etc. after that customer has to click on the place order button then the printing order will be placed.

6. Bill Books

The "PRINTING SOLUTION" also consists of options to print bill books. There are several options for bill books, such as transport books, commercial bill books, hospital letter pad, etc. are available. There are also different sizes available for bill books. If the customer wants to print bill book, the customer must click on the bill book template

then several options will occur, the user should select all the options and click on the place order button then the order gets placed.



Fig.2. DFD for placing order of Bill Books.

7. Letter pads

The "PRINTING SOLUTION" will also consist of printing options for letter pads. It will provide the number of design options for letter pads. It will also consist of different sizes, different paper colors, different ink colors, etc. The "PRINTING SOLUTION" will provide three categories for letter pads, those are 1) Single color letter pads .2) Double color letter pads .3) Multicolor letter pads. So if a user wants to print letter pads it will just have to click on the letter pads template and select design and then enter the required details and place an order.

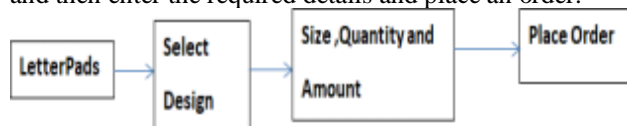


Fig 3. DFD for placing order of Letter Pads.

8. Pamphlets

The "PRINTING SOLUTION" also consist of printing options for pamphlet, there are number of design options for pamphlet are available ,there are two printing options to print pamphlet that is Rota printing and offset printing, to print pamphlets the user must click on pamphlet template as soon as user clicks on pamphlet button the new page will open which consist of number of options such as sizes(1/6,1/5,1/8,A4,LEGAL)Quantity(500,1000,2000,5000)paper color and ink color, etc. After selecting all the options user will click on the place order button then order get placed.

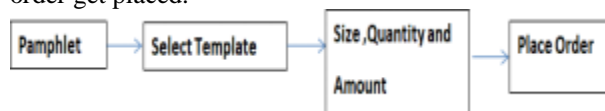


Fig.4. DFD for placing order of Pamphlets.

V. ADVANTAGES

1. Online ordering of printing stuff.
2. Saves time and money.
3. Number of templates is available for printing.
4. Easy to handle and use.
5. No barging and waiting in queue.

VI. CONCLUSION

This application is design to reduce time and save money from the customer. It has provided several options so that the customers do not need to roam in the different printing press. Through this application, employment for various small-scale printing presses has been generated.

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