

Kony BestBuy Application

Project report submitted in partial fulfilment of the requirement for the degree

of

BACHELOR OF TECHNOLOGY IN COMPUTER SCIENCE AND ENGINEERING

By

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UNDER THE GUIDANCE OF

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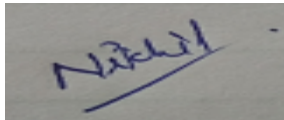
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DECLARATION BY THE SCHOLAR

I hereby declare that the work reported in the B-Tech thesis entitled “**Kony BestBuy Application**” submitted at **Jaypee University of Information Technology, Waknaghat, India**, is an authentic record of my work carried out under the supervision of **Ms. PRANAVI REDDY**. I have not submitted this work elsewhere for any other degree or diploma.

A rectangular box containing a handwritten signature in blue ink. The signature appears to be 'Nikhil' with a horizontal line underneath it.

Nikhil Sharma, 151283

Department of Computer Science and Engineering
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Dated: **24/05/19**



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CERTIFICATE

I hereby declare that the work presented in this report entitled "KONY BEST BUY APPLICATION" in partial fulfilment of the requirements for the award of the degree of Bachelor of Technology in Computer Science and Engineering submitted in the department of Computer Science & Engineering and Information Technology, Jaypee University of Information Technology, Wahnaghat, is an authentic record of my own work carried out over a period from February 2019 to May 2019 under the supervision of Ms. Pranavi Reddy, my reporting manager, Kony IT Services Private Ltd. The matter embodied in the report has not been submitted for the award of any other degree or diploma.

Nikhil Sharma, 151283

This is to certify that the above statement made by the candidate is true to the best of my knowledge.

Ms. Pranavi Reddy

Manager

Kony IT Services Private Ltd.

Hyderabad

Dated : 20/5/2019

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It is a pleasure to express my deep appreciation and gratitude to my reporting Manager and to guide MS. PRANAVI REDDY, Kony IT Services Private Ltd., Hyderabad. Her dedication and keen interest, and primarily, her overwhelming attitude to help her team had been solely and mainly responsible for the completion of my work. Timely advice, meticulous review, scholarly advice and a scientific approach have helped me a lot.

I owe a deep sense of gratitude to all my team, respectful and supportive, who helped me to participate in the very early stages of project development and I expect them to continue to guide me constantly. Their prompt inspirations, timely suggestions with kindness, enthusiasm and dynamism allowed me to complete my thesis.

Nikhil Sharma (151283)

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ABSTRACT

This report covers all the basic aspects regarding creation of an application in Kony platform. It consists of three basic components that are required to be addressed. First thing is the Kony Visualizer. It acts as the front end of the application. All the logic will be written here in this Kony Visualizer. It is where the UI of the application is made as well as logic related to the application is written. This application communicates with the server through the http requests. These http requests were given by the team. These http requests were responsible for fetching the required data from the service end. Also, there is Kony Fabric, which acts as middleware. It is where authentication of the users and security aspects are maintained. Creation of the services is also done here in the integration part which will be called in the Visualizer. Now let us say we need to combine two different services together. For that purpose also, we need to make use of Kony Fabric's Orchestration service.

CHAPTER - 1

INTRODUCTION

In today's world, we see people working with variety of devices each and every day. People are not only interested in working on their personal phone/phones, but they also like to work with their laptops and sometimes even with their tablets too. So, what customer or even an employee wants is that their experience of using the same application should be good.

It should not be terrible, if we look it from customer's point of view. Only if the experience will be good, then customer suggest it to others and hence value of business will increase for the company.

So, to make sure that customer's or we can say that employee's experience is good, a good approach is must. This is where the approach of Kony is different. Technology used in Kony is what makes it different from the rest of the company's in the same Business.

So, various organizations can easily overcome the problems which may be occurred in the coding or in development phase by not writing the redundant code. Experience of each and every is enhanced.

By making sure that one need not to write the same code time and over again, we must make sure that a single piece of code should work for all the devices or we can say that it should work for all the different channels.

By channels we mean that all the different devices like iphone, android, tablet or even our personal desktop. Our coding effort will significantly reduces if we need not to write the

code for devices again and again.

So, various organizations can easily overcome the problems which may be occurred in the coding or in development phase by not writing the redundant code. Experience of each and every is enhanced.

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So, here at Kony this is exactly what the strategy is which keeps them ahead. They allows this support which makes sure that by writing the same code, they can allow all other devices, whether it is android or iphone or even desktop, to work fluently. One will get their application in really quick time. No management problem or no issue of delaying the application will be there.

So, to make sure that customer's or we can say that employee's experience is good, a good approach is must. This is where the approach of Kony is different. Technology used in Kony is what makes it different from the rest of the company's in the same Business.

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By making sure that one need not to write the same code time and over again, we must make sure that a single piece of code should work for all the devices or we can say that it should work for all the different channels.

Kony is taking digitalization to a whole new level. The technology that Kony has made it possible that one can easily make their applications which are effective and can work for different channel.

Effective planning is must for making sure that whatever you plan should work in the end and this is where leadership qualities of kony is really great.

Kony helps their customers and even its employees to keep up the pace in this fast moving digital world. Kony helps its customers and employees staying ahead in this digital world. The main reason for companies to use their products is that their products have unique design and innovation in development too.

By developing the application, which does not include different code for different devices or we can say that channels, then adding additional functionality will be relatively easy as well. So, one can easily debug or even add the functionality without adding the redundant code again and again.

It will be very difficult to manage codes written for different devices and hence time consuming as well. More time will be taken which will lead to delay in delivering the application to the customer.

The main reason for companies to use their products is that their products have unique design and innovation in development too. One can easily publish their applications without any other extra burden and one need not to worry about what kind of configuration the device has and about other specifications.

The technology that Kony has made it possible that one can easily make their applications which are effective and can work for different channel. Effective planning is must for making sure that whatever you plan should work in the end and this is where leadership qualities of kony is really great.

It should not be terrible, if we look it from customer's point of view. Only if the experience will be good, then customer suggest it to others and hence value of business will increase for the company.

There are a lot of customers or we can say that there are a lot of companies which use Kony products. If we talk about Fortune five hundred companies, then there are seventy such companies that use Kony products. The main reason for companies to use their products is that their products have unique design and innovation in development too.

Kony is taking digitalization to a whole new level. The technology that Kony has made it possible that one can easily make their applications which are effective and can work for different channels. The main reason for companies to use their products is that their products have unique design and innovation in development too.

CHAPTER -2

LITERATURE SURVEY

For the development of the application, we need some basic understanding about some of the terms and concepts. Let us look at them in detail :

2.1 Kony Fabric

Kony Fabric acts as back-end as a service. It helps the developers to build both native and web applications for mobile. It helps us to integrate various back-end services with our existing application.

The application can be build using either iOS, or even JavaScript or even Android frameworks. Kony fabric acts as middleware. It helps developers to build different channel applications.

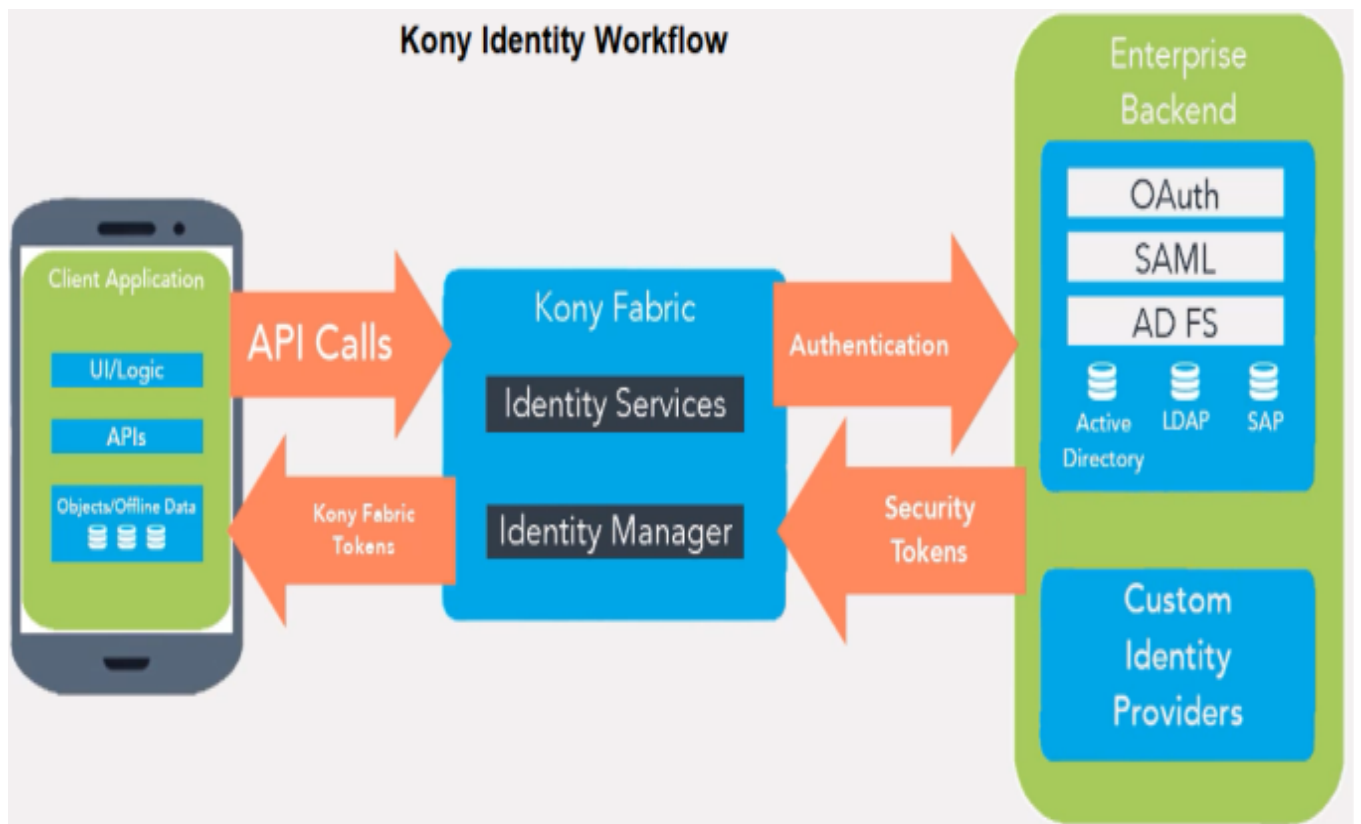
One can build the native mobile applications for android, iphone, and even Windows and Single Page Applications and also Responsive web applications for browsers.It defines the backend to build these applications easily and efficiently. Developers can obtain back-end services instantly and efficiently. Kony fabric involves various features. These features includes - Identity, Integration, Objects, Orchestration, and Engagement Services.

All of these five mentioned features can be seen at a single place that is, at Kony fabric console. Kony fabric acts as middleware. It helps developers to build different channel applications. One can build the native mobile applications for android, iphone, and even Windows and Single Page Applications and also Responsive web applications for browsers.It defines the backend to build these applications easily and efficiently.

2.1.1 Identity

It is basically used for authentication purpose. One can easily made their application secure by specifying the type of authentication he wants. Suppose you want that only particular set of users are allowed to access the existing application, then also we can customize that in this. So, basically it eliminates the need for writing the code at the back-end specially for authentication. All of the handling of security is maintained at the identity service at the Kony fabric.

Various stages of Identity service are as shown :



As we can see that, their is an client application. It consists of UI or we can say that it consists of logic written by the developer. All this kind of logic will be written in the Kony visualizer.

One can easily write the logic over there. One of the greatest advantage of Kony visualizer is that one need not to write the redundant code for various channels that is, for mobile or tablet or desktop separately.

Same code will work fine for all the channels. Also, all the UI related stuff will also be done in the visualizer. Now, API's in the visualizer will make the API call to the Kony fabric. Now, at the fabric side, will call the identity service.

Now, in turn, these calls will be send to back-end of the respective enterprise where these will be matched and hence security tokens are send back to the fabric which will send back these tokens back to the application of the client. It consists of UI or we can say that it consists of logic written by the developer.

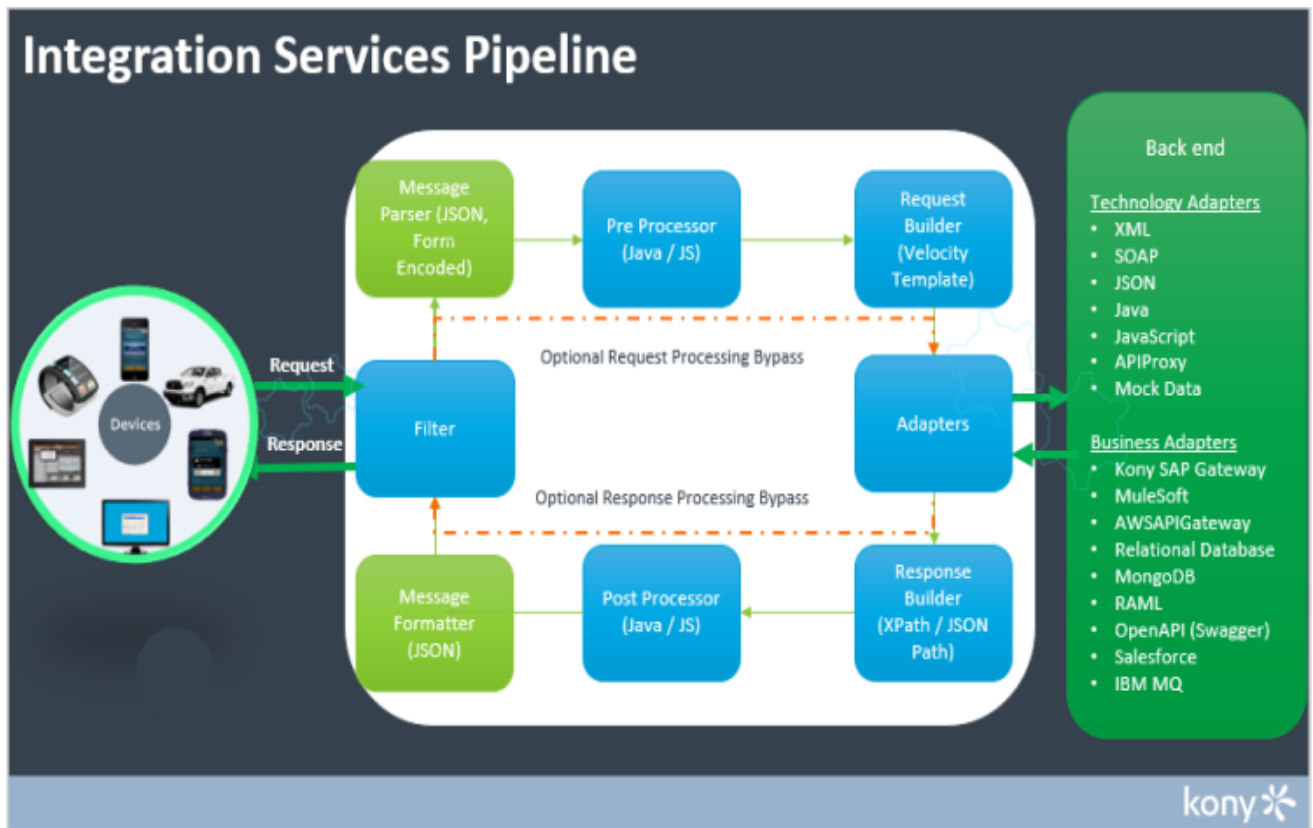
All this kind of logic will be written in the Kony visualizer. One can easily write the logic over there. One of the greatest advantage of Kony visualizer is that one need not to write the redundant code for various channels that is, for mobile or tablet or desktop separately.

2.1.2 Integration

It basically allows us to define different back-end services for our application. We can define various integration services which are already available like XML, JSON, etc.

For example- If i want to develop an application which has a lot of different categories. In such case, we need to use this integration service. This service will allow us to retrieve the data.

Various stages of Integration service are as shown :



The below Figure illustrates the Service Request Flow :

Service Request flow

a. **Request**

A client sends a **request** to Kony Fabric.

b. **Filter**

c. **Message Parser (JSON, Form Encoded)**

d. **Pre-Processor**

After Kony Fabric receives the call from the device, Kony Fabric executes custom Java/JS code based on the configured **Pre-Processor** before making any outbound calls.

The custom Java/JS code is typically used to decide on what service to call. The custom code can also perform data validation on the request input.

e. **Request Builder (Velocity Template)**

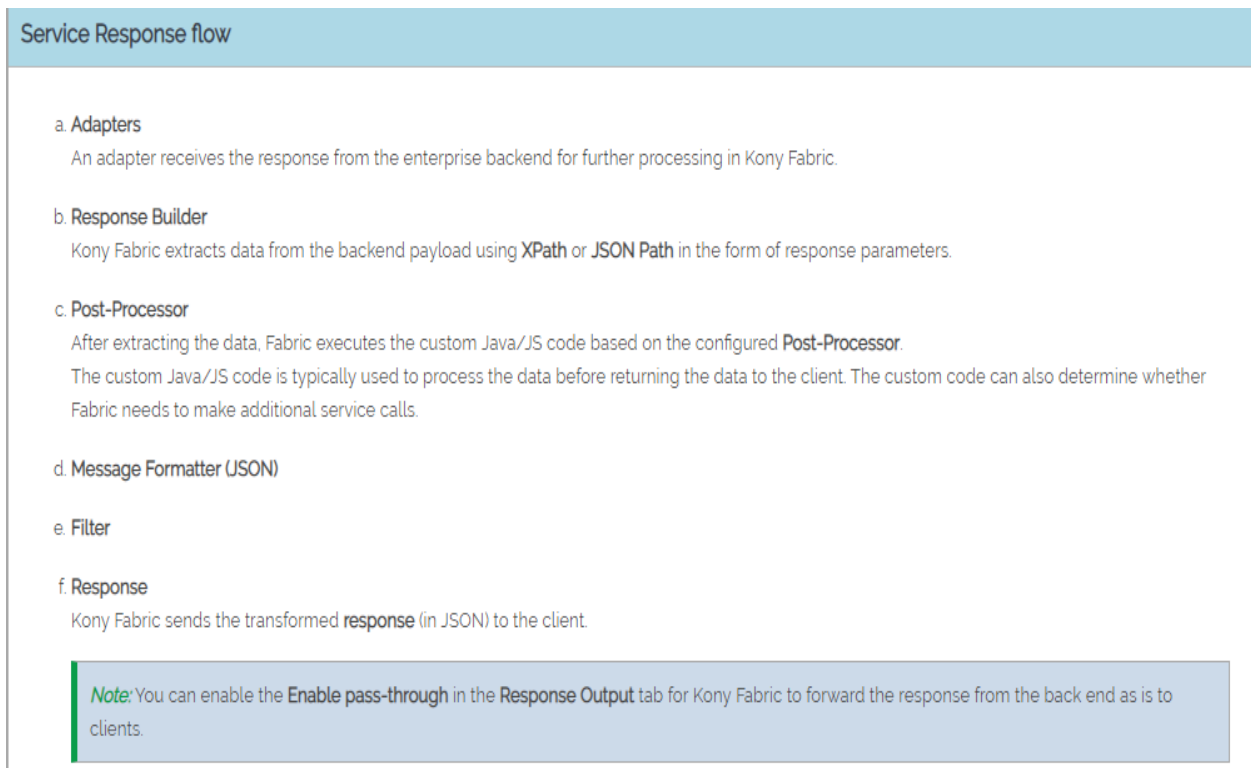
For adapters (such as XML, JSON), user can format the request sent to an enterprise backend by defining a [velocity template](#).

f. **Adapters**

An adapter is the component that communicates to the backend. it takes the formatted request from the request builder and sends it to the enterprise backend. In addition to the out of the box adapters, we can import adapters from [Kony Marketplace](#).

Note: You can enable the **Enable pass-through** in the **Request Input** tab for Kony Fabric to forward the headers and body of clients request to the back end as is.

The below Figure illustrates the Service Response Flow :



2.1.3 Orchestration

It basically combines various integration services so that we can use them all at once. So, we can see them as one service after combining them all. Two types of Orchestration services are there.

2.1.3.1 Composite Type :

Here, with the help of this, we can run two or more than two services either concurrently or sequentially.

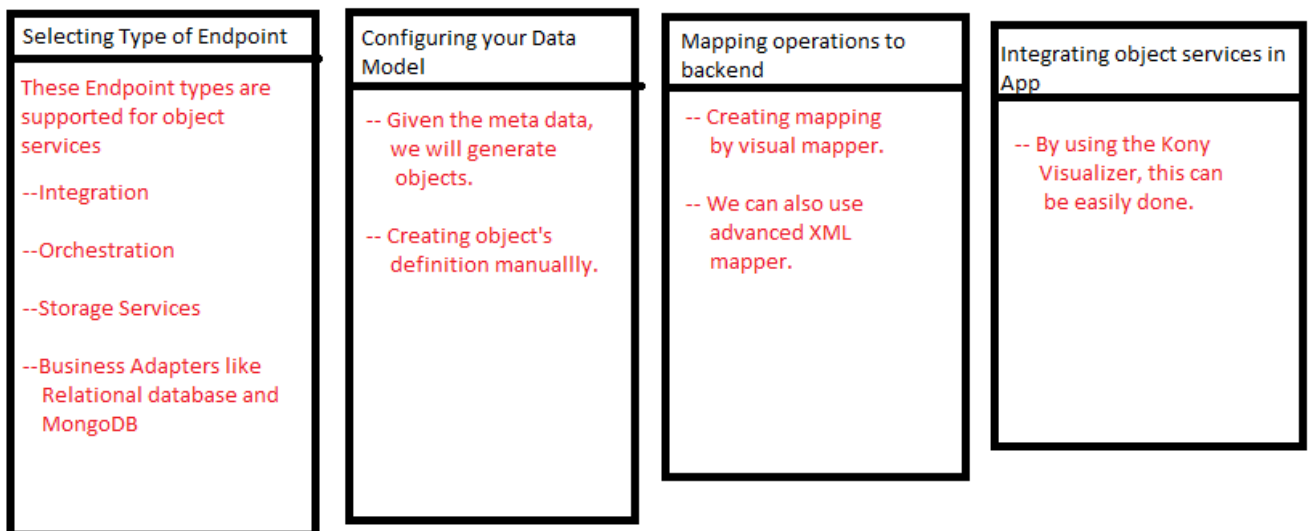
2.1.3.2 Loop Type :

Here, with the help of this, we can run only single service at a time in a loop. Once the loop is over or it is done, it is over.

2.1.4 Objects

Here, we can design the data model. With the help of that data model, we can now map that design of objects to the back-end. So, we can define how we want our application to interact with the back-end. We are not exposing back-end here so encapsulation property is maintained here.

The below Figure illustrates the stages of Object Service :



2.1.4.1 Why Object Services?

Now, the main question comes into our mind is that what is the need of these object services. As we know that there is a traditional approach also available to call the API's that is, Application Programming Interface. Let us look at the below comparison:

Object Services	Tradational Approach to API's
-- Focus on designing the data model and hence mapping it to the backend thereafter.	-- Focus on designing and invoking the API's.
--Independent development of front end and back end.	-- Tightly coupled interaction between the front and back end.
-- Focus on application Logic.	-- Energy spent on creating back end interactions.
--Ease of service creation.	-- More code required so more prone to errors.
--Reuse of same data model across different applications.	-- Doesn't encourage pattern driven development.
--Four times faster integration	--Requires massive amount of code.

CHAPTER -3

SYSTEM DEVELOPMENT

3.1 BestBuy

I developed an application which was called as BestBuyNik. It was similar to all the applications that we use daily for shopping and buying latest stuff. It was easier to use as the daily user can easily understand what to do next and how to operate the given application.

Rather than making it complex and hard to use, the application was made so that the user finds it friendly and hence easier to use. The application was made by keeping in mind that user does not gets bored by using it again and again and hence for that very purpose, the UI of the app was made by considering such things in mind.

Let us take an example to understand the following concept. For example while designing the icons of the application, then the font size of the icons was made in such a way that user finds it attractive and at the same time the size of the icons does not get very big so that they find it irritating.

Also, one thing to keep in mind was also that the size of the icons was neither too big and nor too small. Both the scenarios were something that every UI designer needs to take care of so that it does not affect their application in front of the customers. This was the major point in terms of designing the UI or we can say that this was major point while designing the front end of the application.

The application was made by keeping in mind that user does not gets bored by using it again and again and hence for that very purpose, the UI of the app was made by considering such things in mind.

This was the major point in terms of designing the UI or we can say that this was major point while designing the front end of the application.

Now, the other major thing is in terms of writing the code. So, in terms of developer's point of view, there are other scenarios that one needs to keep in mind. Let us take an example to understand the following concept.

For example while writing the logic for say button in the application, then one needs to write as simple logic as possible so that app does not gets too heavy and in turn responds late which is a very bad experience for the user. So, such possible cases are something which were taken care of so that the given application provides better experience to the user. So, rather than making it complex and hard to use, the application was made so that the user finds it friendly and hence easier to use.

3.2 Component

Component is something we need as a part of every page or we can say that that part of our project which is going to be used in almost all the pages. For such cases, we create a form or a page and we call such a page or form as one component.

These components are really helpful. Let us take an example to understand the following concept. Say, we have a page which we need in our application which is going to be displayed in almost all the application, wherever we go.

So, now one solution for such a problem is that we create that very page or form each and every time which is not at all a good idea as it will create two problems. One is that such solution will increase the unnecessary overhead of creating the same form time and over again. The other problem is that due to creation of the duplicate form or page again and again, the size of the application will increase which is something we would love to avoid.

So, a new concept of component is there in Kony. This concept is something which will definitely be beneficial for the developer as it will decrease their overhead of creating the page again and again. One can simply use the created component anywhere in the given page he wants to use. Let us talk about this very component in detail.

3.3 Back Button

In the left-most side, it consists of back button. The function of back button is that whenever user clicks on it, it should navigate to the previous page where he actually was at that time.

But important thing to look for here is that when user is on the home page, then this button should not be visible at all because when user is on the home page, then he has not navigated to any of the page and hence having back button is useless.

So, on the main page or we can say that one the home page, we should not display the back button which is a part of the component. On clicking of back button, new data should not be loaded from the service but the same data should be displayed which was earlier present over there when user visits the page earlier.

So, if new data is loaded then it will create inconsistency in the application which is not desirable and hence should be avoided. Only the earlier loaded data should be displayed not the new one which is fetched from the service call.

3.4 Logo

In the middle of the component, we have this logo of the application. The logo should be displayed in the middle and its size should be not too large neither too small so that user likes it and hence finds it attractive.

Even if the user clicks on it, nothing should happen to it. That is, user should be there on the same page as he currently working on. The important thing to note here is that the logo should look attractive and at the same time its font size should be reasonably good.

3.4 Search Button

Right-most side of the component is the search button available. The search button will allow the user to enter some text in it and hence will display the results according to the searched data.

Important thing to note here is that, on clicking of the search button page should move from top to bottom and hence a kind of animation is there which needed to take place. On clicking of the search button, a new button should be displayed which is a cancel button.

The importance of this cancel button is that, on clicking of this cancel button, the original search button should be displayed and cancel button should not be visible afterwards. One of the important thing for this search button is that, say if the searched item is not found, then a message should be displayed that the searched item is not found.

All the various checks like null check and use of restarted symbols should be avoided. Also, the cancel button is initially not shown to user. Only when the user clicks on the search button, then the cancel button should be displayed to the user. Also, on clicking of the cancel button, the screen should move from bottom to top so as look attractive and cancel button should get vanished. So, a kind of animation should be displayed which will move from bottom to top.

3.5 Home Page

Home page consists of various parts. Let us look at them in detail. First and the foremost thing this home page consists of is the component which is going to be displayed on the top the page or form when user enters. Component consists of three icons. Left most icon consists of back button.

The function of back button is that whenever user clicks on it, it should navigate to the previous page where he actually was at that time. But important thing to look for here is that when user is on the home page, then this button should not be visible at all because when user is on the home page, then he has not navigated to any of the page and hence having back button is useless.

In the middle of the component, we have this logo of the application. The logo should be displayed in the middle and its size should be not too large neither too small so that user likes it and hence finds it attractive.

Even if the user clicks on it, nothing should happen to it. Right-most side of the component is the search button available. The search button will allow the user to enter some text in it and hence will display the results according to the searched data.

If there is no data in the category, then without navigating to the page to show the prompt message, a simple message is shown to the user that there is no data in the category and hence no navigation to the page or form is required.

Important thing to note here is that, on clicking of the search button page should move from top to bottom and hence a kind of animation is there which needed to take place. This is all about the component. Below the component, there is a kind of label which is used for showing the user that which he had searched for and in which page he is on.

This is very useful for knowing or telling the user that which page the user is in and in which category the user was browsing. It is also useful for knowing or telling the user that, if he presses the back button then whether or not the user has navigated to the right page. The logo should be displayed in the middle and its size should be not too large neither too small so that user likes it and hence finds it attractive.

Even if the user clicks on it, nothing should happen to it. So, this label will show the user about his navigation from page to page or form to form. Below this label, we will show the various categories that user can browse or see.

But important thing to look for here is that when user is on the home page, then this button should not be visible at all because when user is on the home page, then he has not navigated to any of the page and hence having back button is useless.

Various categories will be shown to the user like Televisions, Birthday gifts and many more. All these categories will be loaded from the service call. So, each time user opens the application, then a different set of lists will be shown to the user which he can browse.

A user can clicks on any of the category which he wishes to see and hence, if the data is present in that category then user will be taken to that very page and if their is no data present in that category, then a simple message will be shown to the user saying that there is no data in the category.

If there is no data in the category, then without navigating to the page to show the prompt message, a simple message is shown to the user that there is no data in the category and hence no navigation to the page or form is required.

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So, this label will show the user about his navigation from page to page or form to form. Below this label, we will show the various categories that user can browse or see. Various categories will be shown to the user like Televisions, Birthday gifts and many more. All these categories will be loaded from the service call.

So, each time user opens the application, then a different set of lists will be shown to the user which he can browse. So, without moving to the next form, one has to simply alert the user that there are no sub-categories in the selected category and hence no need to move or navigate to the given next form or page.

A user can click on any of the category which he wishes to see and hence, if the data is present in that category then user will be taken to that very page and if there is no data present in that category, then a simple message will be shown to the user saying that there is no data in the category.

In the middle of the component, we have this logo of the application. The logo should be displayed in the middle and its size should be not too large neither too small so that user likes it and hence finds it attractive.

Even if the user clicks on it, nothing should happen to it. Right-most side of the component is the search button available. The search button will allow the user to enter some text in it and hence will display the results according to the searched data.

3.6 SUB CATEGORIES

After clicking on any of the category in the home page or main page, now three scenarios will arrive. Each of the scenario will have to be handled accordingly. Let us discuss each of the case one by one.

First case that can arrive is there are sub categories in the chosen category and hence all the sub categories will have to be shown to the user. Each and every sub category of the given selected category will be shown to the user.

Now comes the second case. Say if there are no sub categories in the given selected category, then there has to be something more which needs to be done. Now, if there are no sub categories in the given category, then a message should be displayed with an appropriate heading or appropriate message should be shown to the user saying that there are no subcategories in the given or in the searched category.

A message is also a type of alert message which is displayed to the user in the screen. A important thing to notice here is that if a category is clicked, then something should happen. That is, either a new screen with further subcategories is shown to the user or an alert message is shown to the user.

It should not happen that after clicking on any category, nothing is happening. It will be a very bad experience to the user. Also, even if the user clicks on search option, then same page should be displayed to the user otherwise, displaying any other page will bring in consistency to the user who is using the application.

So, inconsistency should be avoided to the maximum extent for better user experience. Search result should be same as the clicked value on the page. That is, same result for the sub category should match with the one which is searched in the search section.

Search bar should be displayed only after clicking the search icon present on the top menu of the application. Important thing to notice here is that an animation should take place after clicking the search icon from top to bottom.

Right-most side of the component is the search button available. The search button will allow the user to enter some text in it and hence will display the results according to the searched data.

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Important thing to note here is that, on clicking of the search button page should move from top to bottom and hence a kind of animation is there which needed to take place. On clicking of the search button, a new button should be displayed which is a cancel button.

The importance of this cancel button is that, on clicking of this cancel button, the original search button should be displayed and cancel button should not be visible afterwards. One of the important thing for this search button is that, say if the searched item is not found, then a message should be displayed that the searched item is not found.

Say if there are no sub categories in the given selected category, then there has to be something more which needs to be done. Now, if there are no sub categories in the given category, then a message should be displayed with an appropriate heading or appropriate message should be shown to the user saying that there are no subcategories in the given or in the searched category

All the various checks like null check and use of restarted symbols should be avoided. Also, the cancel button is initially not shown to user. Only when the user clicks on the search button, then the cancel button should be displayed to the user.

Also, on clicking of the cancel button, the screen should move from bottom to top so as look attractive and cancel button should get vanished. So, a kind of animation should be displayed which will move from bottom to top.

3.7 Products Under Category

Once the sub categories are over, now it's the time to show the actual products related to the clicked category or we can say that actual products related to the searched category. Now let us discuss in detail about what actually will be shown to the user and what kind of information will be shown to the customer or user.

So let us look at the details. It will contain an image, the name of the product, price of the product and average user rating of the product, if available. In the left most side, it will contain an image. The image will be fetched from the service end and hence will be loaded at the run time. So, an appropriate image will be loaded.

Important thing to look for here is the font size of the given image. The image size should be reasonable. That is, neither too big, nor too small. Otherwise, it will be a bad user experience which is really not desired at all.

Now, comes the text part on the right side of the image, where name of the product will be displayed. Its size should be medium as well. That is, neither too big nor too small. Keeping the size or we can say that font size, is the main part or task from UI designer's point of view.

Also, text should not overlap with each other which needs to be taken care of as well. The label or the text will show the product name in bold letters. Below all this name, now comes the price of the product. Here some customization needs to be done. There were two conditions that we need to follow here.

We were getting two prices from the service. One was normal price and the other one was sale price. Sale price is that price which will be shown to the user only if the product will be on sale.

Normal price is that price which will be shown to the user if the product is not on sale so normal price will be displayed to the user. Now for this text or we can say that for this label, we will display the normal size in case of no sale is there and sale price in case of sale of the product.

Another thing to look here is that sale price of the product will be displayed in different color and normal price in different color. So, this customization has to be done as well. Now comes the last item or the last text or label which will contain the average user rating of the product. Here, one important thing has to be noticed as well.

Say if the product is new and hence there will be no average user rating. For such kind of product, nothing has to be shown to the user. That is, instead of showing zero average user rating, one need not to show this label at all.

That is, in such cases where there is no average user rating, then we need not to show it otherwise it will be a bad user experience. So, such cases also needed to be handled well.

3.8 Product Description

After clicking on any of the chosen product, now the user will be redirected to the products details page. This page will consists of the details of the chosen product. Earlier page, the previous page consists of product description but not an detailed description of the product. Now, a more detailed description of the product will be there in this very page. Let us discuss what will be there in this page.

In the previous page, a small image of the product was displayed but here in this very page, an larger or bigger image will be shown to the user. This will make sure that the user can easily see the product before buying it or seeing any further details about the product. An enlarged image will be better for users who wants to see enlarged image.

After the image part now, on the right side of the image, where name of the product will be displayed. Its size should be medium as well. That is, neither too big nor too small. Keeping the size or we can say that font size, is the main part or task from UI designer's point of view.

Also, text should not overlap with each other which needs to taken care as well. The label or the text will show the product name in bold letters. Below all this name, now comes the price of the product. Here some customization needs to be done. There were two conditions that we need to follow here.

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If the product is new and hence there will be no average user rating. For such kind of product, nothing has to be shown to the user. That is, instead of showing zero average user rating, one need not to show this label at all.

Now, below this label comes the detailed description of the product. This label will contain the detailed description about the product and well explained product will be shown to the user. Say a television is shown to the user. So, now in this label each and every minute detail of the television will be written and hence shown to the user like what are the specifications of the product and what is the size of the television and whether it is a color television or not and many more specifications will be written in that very description.

Next label below this detailed description, is that of number of reviews of the product. This will show the user about total number of reviews that are given to the product. If there are no reviews of the particular product, then a simple message will be shown to the user saying that there are no reviews available for the given product.

Along with the reviews written for the product, their personal average user rating will also be shown. That is, each and every individual who has commented on the product or who has given reviews for the product, their rating will be also be shown to the user. This will be really helpful for the user to see what individual views are there and what each user who bought the given product thinks about it and how he rates the product.

This customization has to be done as well. Now comes the last item or the last text or label which will contain the average user rating of the product. Here, one important thing has to be noticed as well.

Take the following example to understand this in a better way. If the product is new and hence there will be no average user rating. For such kind of product, nothing has to be shown to the user. That is, instead of showing zero average user rating, one need not to show this label at all.

A blank lable will not be shown otherwise it will be a bad user experience for the user which is not at all desired. So, now in this label each and every minute detail of the television will be written and hence shown to the user like what are the specifications of the product and what is the size of the television and whether it is a color televison or not and many more specifications will be written in that very description.

Say if there are no sub categories in the given selected category, then there has to be something more which needs to be done. Now, if there are no sub categories in the given category, then a message should be displayed with an appropriate heading or appropriate message should be shown to the user saying that there are no subcategories in the given or in the searched category.

All the various checks like null check and use of restarted symbols should be avoided. Also, the cancel button is initially not shown to user. Only when the user clicks on the search button, then the cancel button should be displayed to the user.

Also, on clicking of the cancel button, the screen should move from bottom to top so as look attractive and cancel button should get vanished. So, a kind of animation should be displayed which will move from bottom to top.

CHAPTER -4

PERFORMANCE ANALYSIS

Let us now analyze the performance of the above system which was developed. It is important to know how your system or we can say that it is important to know how your application works. We had already defined our system in the above system development and it is the time we look how it actually works.

So, the application must be able to recognize if the user is a valid user or not. Our application must be able to or should be able to authenticate or we can say that our application should be able to verify that the logged in user is already the user of the existing application or not. There are many other scenarios that had to be looked to make sure that the user is properly validated.

One cannot make two accounts with the same email-id. Once the new user has signed up successfully, then he needs to wait for some time so that he is granted access by the admin in the backend.

4.1 Authentication

The first step that our application has to pass is to authenticate its user. Our application must be able to or should be able to authenticate or we can say that our application should be able to verify that the logged in user is already the user of the existing application or not. There are many other scenarios that had to be looked to make sure that the user is properly validated.

If the user who is trying to login is not a registered user, then application must display a proper message to the user saying that he is not a registered user and so he must register himself first and only then he will be allowed to login to the application.

So, once the user is found to be registered user, then he can directly login to the application. If the user is not found to be registered, then that will also reflect in the database and hence user will be denied access. So he will have to register himself first to be able to login into the application successfully

4.1.1 Access Request

Now, for granting access, user requires a valid username and password. This will be given to the user once the user has successfully registered to the BestBuy application. Only a user authorized with the application can sign in without having to face any kind of trouble. The username need not be unique.

Only thing that user need to make sure is that redundant email-id is not acceptable. One cannot make two accounts with the same email-id. Once the new user has signed up successfully, then he needs to wait for some time so that he is granted access by the admin in the backend.

4.1.2 Grant Request

On receiving the access request by any user, the database administrator has to do some work at the backend. Once the user is found to be valid by the admin, then he immediately adds that user to the database.

So, once the user is found to be registered user, then he can directly login to the application. If the user is not found to be registered, then that will also reflect in the database and hence user will be denied access. So he will have to register himself first to be able to login into the application successfully.

4.1.3 Request Handler (Fabric)

It is basically used for authentication purpose. One can easily made their application secure by specifying the type of authentication he wants.

Suppose you want that only particular set of users are allowed to access the existing application, then also we can customize that in this. So, basically it eliminates the need for writing the code at the back-end specially for authentication. All of the handling of security is maintained at the identity service at the Kony fabric

Now, API's in the visualizer will make the API call to the Kony fabric. Now, at the fabric side, will call the identity service.

Now, in turn, these calls will be send to back-end of the respective enterprise where these will be matched and hence security tokens are send back to the fabric which will send back these tokens back to the application of the client. It consists of UI or we can say that it consists of logic written by the developer.

4.2 Data Flow

Now, after the successful authentication of the user, now we will see how the data will flow. That is, how different pages will look like once the user had signed in to the application.

First case that can arrive is there are sub categories in the chosen category and hence all the sub categories will have to be shown to the user. Each and every sub category of the given selected category will be shown to the user.

Now comes the second case. Say if there are no sub categories in the given selected category, then there has to be something more which needs to be done. Now, if there are no sub categories in the given category, then a message should be displayed with an appropriate heading or appropriate message should be shown to the user saying that there are no subcategories in the given or in the searched category.

A message is also a type of alert message which is displayed to the user in the screen. A important thing to notice here is that if a category is clicked, then something should happen. That is, either a new screen with further subcategories is shown to the user or an alert message is shown to the user.

It should not happen that after clicking on any category, nothing is happening. It will be a very bad experience to the user. Also, even if the user clicks on search option, then same page should be displayed to the user otherwise, displaying any other page will bring in consistency to the user who is using the application.

After clicking on any of the chosen product, now the user will be redirected to the products details page.

This page will consist of the details of the chosen product. Earlier page, the previous page consists of product description but not a detailed description of the product. Now, a more detailed description of the product will be there in this very page. Let us discuss what will be there in this page.

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Along with the reviews written for the product, their personal average user rating will also be shown. That is, each and every individual who has commented on the product or who has given reviews for the product, their rating will be also be shown to the user. This will be really helpful for the user to see what individual views are there and what each user who bought the given product thinks about it and how he rates the product.

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CHAPTER -5

CONCLUSIONS

It consists of three basic components that are required to be addressed. First thing is the Kony Visualizer. It acts as the front end of the application. All the logic will be written here in this Kony Visualizer. It is where the UI of the application is made as well as logic related to the application is written.

This application communicates with the server through the http requests. These http requests were given by the team. These http requests were responsible for fetching the required data from the service end. Also, there is Kony Fabric, which acts as middleware. It is where authentication of the users and security aspects are maintained.

Creation of the services is also done here in the integration part which will be called in the Visualizer. Now let us say we need to combine two different services together. For that purpose also, we need to make use of Kony Fabric's Orchestration service.

One can easily write the logic over there. One of the greatest advantage of Kony visualizer is that one need not to write the redundant code for various channels that is, for mobile or tablet or desktop separately.

Same code will work fine for all the channels. Also, all the UI related stuff will also be done in the visualizer. Now, API's in the visualizer will make the API call to the Kony fabric. Now, at the fabric side, will call the identity service.

Now, in turn, these calls will be send to back-end of the respective enterprise where these will be matched and hence security tokens are send back to the fabric which will send back these tokens back to the application of the client. It consists of UI or we can say that it consists of logic written by the developer.

All this kind of logic will be written in the Kony visualizer. One can easily write the logic over there. One of the greatest advantage of Kony visualizer is that one need not to write the redundant code for various channels that is, for mobile or tablet or desktop separately.

REFERENCES

1. http://docs.kony.com/konylibrary/konyfabric/kony_fabric_user_guide/Default.htm#Services.htm#top
2. http://docs.kony.com/konylibrary/visualizer/visualizer_user_guide/Content/Inline_Debugger.htm