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ANDROID LIVE TV APPLICATION

B.Sc.THESIS

Onur OKTAY

Department Of Software Engineering

Thesis Advisor : Prof. Dr. Hasan Hüseyin BALIK

İSTANBUL AYDIN ÜNİVERSİTESİ
MÜHENDİSLİK FAKÜLTESİ

ANDROID CANLI TV UYGULAMASI

LİSANS TEZİ

Onur OKTAY

Yazılım Mühendisliği

Tez Danışmanı : Prof. Dr. Hasan Hüseyin BALIK

Onur OKTAY, a **B.Sc.** student of **IAU Faculty of Engineering** student ID **B1005.090028**, successfully defended the **thesis** entitled "**ANDROID LIVE TV APPLICATION**", which he prepared after fulfilling the requirements specified in the associated legislations , before the jury whose signatures are below.

Thesis Advisor : **Prof. Dr. Hasan Hüseyin BALIK**
Istanbul Aydın University

FOREWORD

This thesis is the result of the android application development. In my experiences most students have an idea about mobile application development. Although most students have an idea about mobile application but many students do not know how to develop mobile application about IOS or Android. So, I was wondering how to develop mobile application about android operating system and IOS operating system.

With the help and support of my advisor Prof. Dr. Hasan Hüseyin Balık , I decided to develop android application for android devices. After selecting my graduation project , I am very much appreciative and gratified.

Thanks to my graduation project , I enjoyed developing it. I hope , people who are using my live tv android application will enjoy with my application on their android devices.

June 2015

Onur OKTAY
(Student)

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ABBREVIATIONS

IT	: Information Technology
DB	: Database
SQL	: Structured Query Language
MYSQL	: My Structured Query Language
APK	: Application Package
PHP	: Hypertext Preprocessor
XAMPP	: Extended Apache/MySQL/PHP/Perl
OS	: Operating System
URL	: Uniform Resource Locator
AVD	: Android Virtual Devices
XML	: Extensible Markup Language
ASP	: Active Server Pages

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ANDROID LIVE TV APPLICATION

SUMMARY

Using smart phone is increasing last years through developing mobile technology. Therefore, we need more mobile applications for our devices. The need for android application developing also increased. But our company, students and developers are not ready for developing mobile applications.

The purpose of this project is developing android mobile application. Also ,we have to offer android mobile application to users. At the same time when developing application, I will gain the experience about android mobile application.

At the end of the project, android users will have live tv application on the store. Also, I will have more experience and knowledge about android operating system and android developing application.

ANDROID CANLI TV MOBİL UYGULAMASI

ÖZET

Akıllı telefon kullanımı teknolojinin gelişimi ile birlikte her geçen gün artmaktadır.Bu sebeple kullanıcılar daha fazla mobil uygulamaya ihtiyaç duymaktadır.Ayrıca android mobil uygulama geliştirmeye olan ihtiyaç artmaktadır.Fakat şirketlerimiz,öğrencilerimiz ve geliştiriciler henüz bu konuda tam olarak hazır değildir.

Bu projenin amacı,android mobil uygulama geliştirmek ve bu uygulamayı kullanıcılara sunmaktır.Ayrıca ben bu uygulamayı geliştirirken android işletim sistemi ve android mobil uygulama hakkında birçok tecrübe kazanmış olacağım.

Bu projenin sonunda kullanıcılar uygulama mağzalarında canlı tv izleme uygulamasına sahip olacaktır.Ayrıca projede çalışan öğrenci de android konusunda daha fazla bilgi ve tecrübe sahibi olacaktır.

1. INTRODUCTION

Using internet is increasing with developing technology. There are a lot of ways to connect internet such as computers, mobile devices, tablets etc. Most common way of using internet is mobile devices. A lot of mobile companies try to develop operating system and their devices.

The most important part of marketing technology is mobile device. There are two important operating system in mobile technology sector like android and ios. Android is more common and more useful than ios. Many phone brand prefer the android operating system. For example; samsung, sony, lg, htc etc. According to developers, android developing system is better than other operating system.

Live tv application in store is using a lot of people. This is the one of the preferred lead. Also, android operating system can personalize by the users. Android operating system has great location in the mobile devices.

1.1 Purpose Of Thesis

The purpose of this project is developing android mobile application. Also, we have to offer android mobile application to users. At the same time when developing application, I will gain the experience about android mobile application. Students can learn with this project, how to develop android application and basic events. This project is the best way of the learning and developing android project. As a result, this thesis will give information about android operating system and android mobile application methods.

1.2 Outline

1st Chapter contains information gives some information about the purpose of the project.

2nd Chapter is about android operating system.It gives information about what is android operating system and development process.

3rd Chapter is about ECLIPSE.It gives information about what is ECLIPSE and how to use ECLIPSE for developing android application.

4th Chapter is about MYSQL.It gives information what is MYSQL and how to use for android application on the server.

5th Chapter is about APK.It explains what is APK and how to create APK file for android devices.

6th Chapter is about screenshots.It shows how to see mobile application on the users mobile devices.

2. ANDROID OPERATING SYSTEM

2.1 Definition

ANDROID is the open source code mobile operating system. It developed by Google and OpenHandset Alliance. Supported application extension is .apk. ANDROID has extend the functionality of the devices developers community. There are one million applications for ANDROID operating system. Google Play Store is the official store of android application. It organizes by the Google. Open Handset Alliance has announced that it has established ANDROID 5 November 2007. ANDROID is a mobile operating system built on the linux kernel. This system developed with libraries and API C language. ANDROID uses JIK for running the compile Java codes. Therefore ANDROID has many developers for developing their technologies. ANDROID operating system have five steps. First step is about kernel. It's kernel is Linux. Second step is android run time. It is virtual machine. Third step is about libraries. It's content is database library, web browser library, graphical and interfaces libraries. Fourth step is application framework. This is part of providing a wide platform for the developers. Fifth step is application layer. It has java content and application which written by Java.



Figure 2.1 : ANDROID

2.2 Why Is Android Operating System

Many people know android is Google's operating system but a few people know many mobile devices companies support to develop android like lg,samsung,sony,Motorola,intel etc. Besides,they have software community for developing android operating system.Android has many advantages on the operating system technologies.One of them is,compability. Although Apple has the hardware and software compatibility, there is no down side remains that the Android operating system. Samsung and other mobile device manufacturers to contribute to Android's development, to be compatible with the Android operating system, it is absurd to remove or muscular problems.Second advantage of android operating system is mistakes in review. It is worth noting here that the performance of the Android operating system is better or Samsung, LG, HTC, Sony today's technology we should not judge the performance of mobile devices such as the giant. Poor performance you see in the era of mobile devices with lower specifications on the market and never show that the quality of the Android operating system. So looking at the comparison of quality companies should make the original phone.Third advantages of android is price and needs.When we are buying mobile devices,we should to think what we needs.Andorid mobile devices usullay cheaper than ios mobile devices.You can do everything with android mobile devices what you wii do with ios.Fourth advantage is more choice with android.Users can choose the mobile phone design and mobile phones brand.According to developers,most important part of android is open source code and it is available everywhere in the world.Developers can share their libraries or codes and other developers can use it.If we research why people use the android,the most common criterion performance and price.

2.3 Development Process

First step of the development process is setup. Developers have to set up their development environment. Also, developers can set up AVDs and devices for testing.

Second step is development. Developers have to decide and create their application. Because of android is open source code can help to developers. There are many library and source code on the internet for many basic application.

Third step is about debuggind and testing. Developers have to run application on debug mode before completing the application. They must test android application on debug mode. Also, developers have to test the application with using the android testing and framework. Testing is most important part of process. Because, if you can test your application, you can find a lot of errors in your code. Testing should help to developer for their application. There are many test procedures. If developers apply these procedures, application is better than other application. Usually when developers run the application, they do not have any erros on application. But, application can not properly on the mobile devices. Some logical error can be on the code. Developers have to issue which part of code is not working properly and they have to fix it. During the test process, you can change many codes or logical system.

Last step of the development process on android application is the publishing. We have to release our application in release mode. If developers have issue with the application, developers have to fix it before publishing. At the last years, many testing technology and testing tools for android operating system. Also, testing is different sector about developers. In the technology companies need test engineer about android application for testing. This case shows us that testing is most important part of development android process.

3.ECLIPSE

3.1 Definition

Eclipse is an open source and free integrated development environment. The main focus of eclipse is Java and Java related technology. It is also used on different platforms such as C and Python. Eclipse started in 2001 by IBM. Eclipse is the most popular IDE for Java developers because of its interfaces, stylish design and usable common features.

In 2005, the Eclipse Project management is left to the Eclipse Foundation. In the eclipse, developers set the compiler for testing their application. Eclipse environment with available plugins can be used in many areas of function. It can be downloaded below URL :

<https://eclipse.org/downloads/>



Figure 3.1 : ECLIPSE

3.2 Why is Eclipse ?

Developers who develop application for users have many options for developing application on different platform. Eclipse is most common platform of these options. Eclipse support Google Plugin. Google Plugin is very important for developers. Also, run and debug status is faster than other platform. In eclipse, developers can test android application. Eclipse's interfaces is more developed and more functional.

Other reason of using eclipse is open source code. Open source code is helping to developers for developing mobile application. With this feature, developers can share their library or source code another developers on the internet.

Most important reason of using eclipse is ram consumption stable. When developers developing the application, ram is stable. But, other platforms this situation is not like that. Other platforms for example netbeans, we can not say same situation about ram using.

Eclipse platform is fully independent. Also eclipse is ideal platform for rails, gwt and uml. Developers have many section about it. In other platform this is not mentioned. Many developers prefer the eclipse because of eclipse's advantages.

3.3 Android Studio

Android Studio has many different features about developing application for android operating system. Android studio is still beta version but this platform has business to facilitate features. Although Android Studio let's go for a little over a year, the number of users continues to grow rapidly and more stable operation. Google provides all have an Android development environment. Developers can easily reach their libraries.

Thanks to IDE Reflector, developers can do reflection transactions very comfortable. But there are some issue on Android studio. One of them is too slow debugging and running on android studio platform. Gradle part of Android studio sometimes work not properly. If R.java file can not found on the android studio, developers have to build project again and this is the leeway for developers.

According to developers, android studio should continue to develop features. Also, android studio must be more basic and android studio emulator is not working properly. But after maybe some special updates for android studio, it will be more common.

3.4 ECLIPSE SOURCE CODE

3.4.1 Android Manifest

AndroidManifest.xml folder is the most important part of android project. This folder can read by people or machine because of creating by xml. Also Android Development Environment - along with features provided by the ADT is clad in a structure that allows you to make changes to your applications easily with the visual interface. File located in the root folder of the android application and absolute file name to run the application "AndroidManifest.xml" should be shaped. The manifest file contains important information regarding the application basis. Communication between its constituent elements trying to Android program provides over this file. Applications may access resources on the device via the determined with AndroidManifest.xml. When developing an android program screens that users will see (User Interfaces) the same flash animation in separate layout.xml as the creation of a separate frame for each stage (not necessarily the name) files are created.

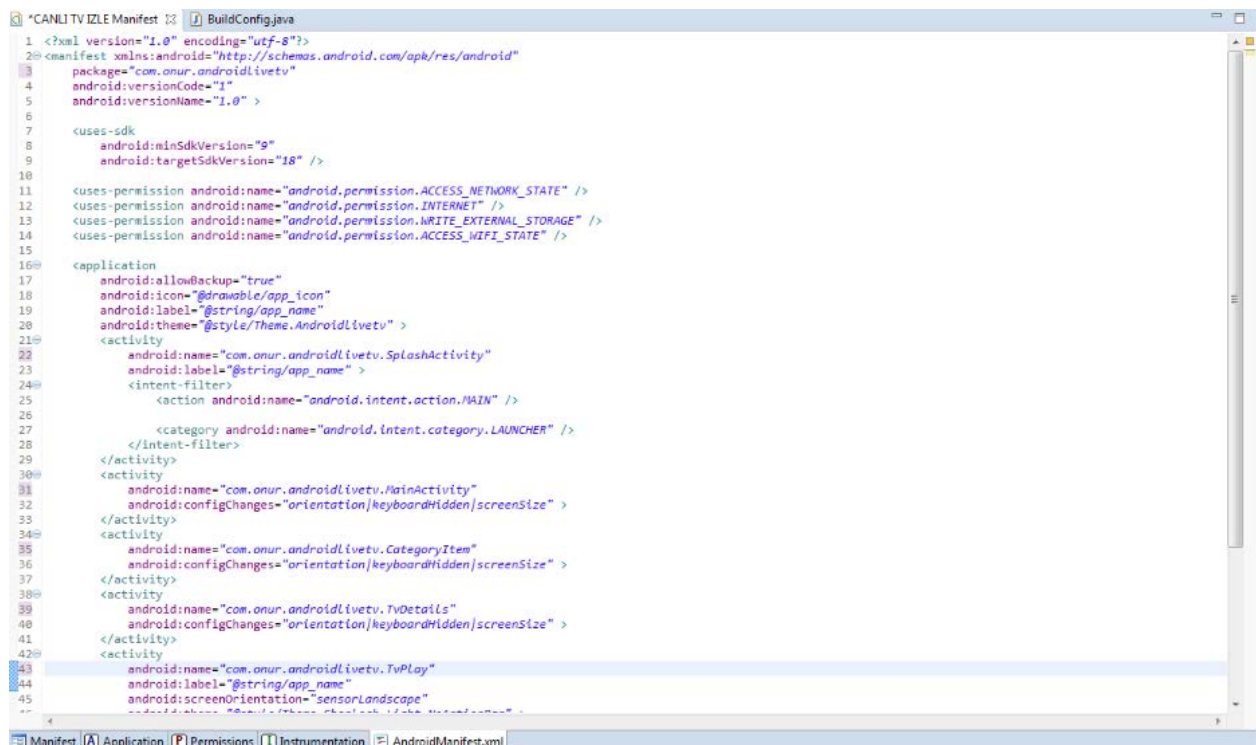


Figure 3.2 : AndroidManifest.xml

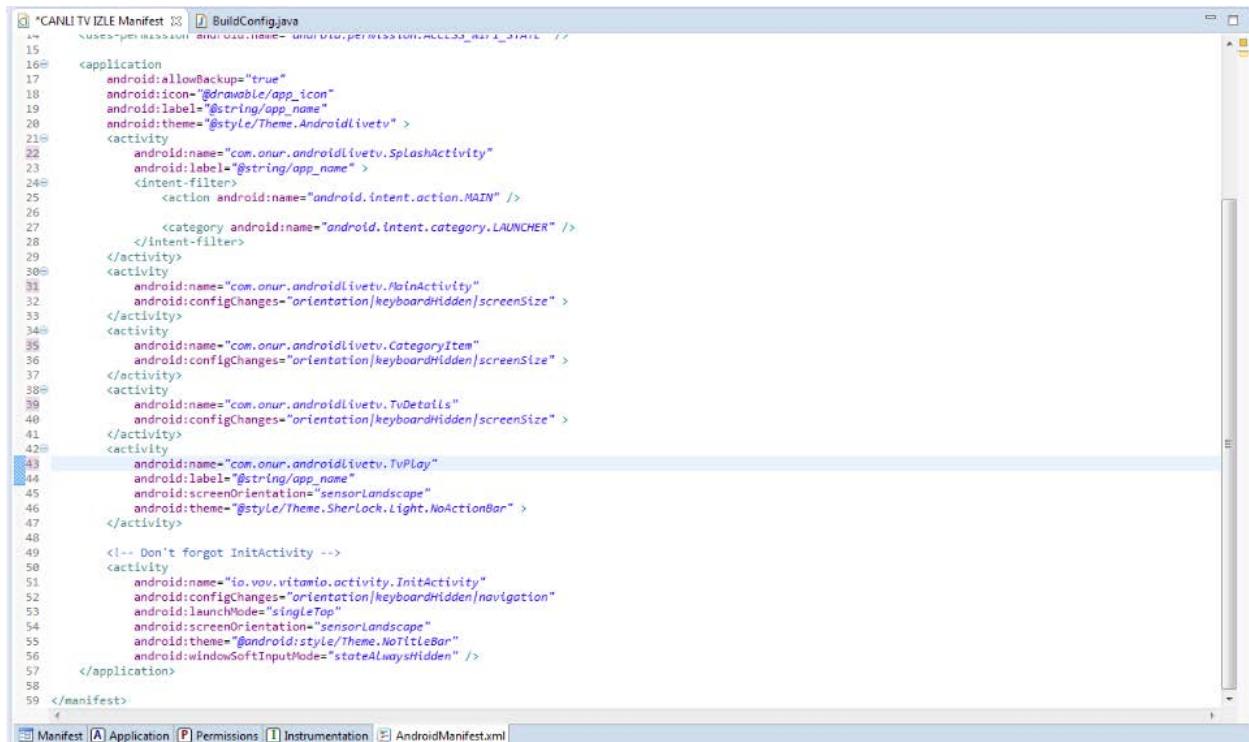


Figure 3.3 : AndroidManifest.xml

In Figure 3.2 and 3.3., With this xml file , developers have to create all activity what developers want on the application. Manifest file is the center of android mobile application system. This activity as AndroidManifest.xml layout.xml files are linked to each other. Essentially, the program generated Java code for layout.xml file, these files is connected to the AndroidManifest.xml file. We can say the backbone of android for this point of the manifest file. Before you start an application component Android system must check the presence of components of the application by reading the AndroidManifest.xml file. Find all components of an application must be in the application's main project directory notification should be made in this file. Also, manifest file have different tasks for applications. For example internet access or user information to determine user permissions such as read-only access information. Another features of manifest file is reporting what API level is necessary for android mobile application.

3.4.2 Xml Files

Developers have to need many activity xml of their application. Activity xml codes develop mobile application codes. In live tv mobile application we have a lot of xml files.



```
1 <RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
2
3     android:layout_width="fill_parent"
4     android:layout_height="fill_parent"
5     android:id="@+id/rootlayout"
6     android:padding="5dp"
7     android:background="#393737">
8
9     <ListView
10         android:id="@+id/lsv_cat_item"
11         android:layout_width="fill_parent"
12         android:layout_height="fill_parent"
13         android:cacheColorHint="#00000000"
14         android:divider="@color/divider"
15         android:dividerHeight="5dp"
16         android:listSelector="@drawable/list_selector"
17         android:padding="5dp" >
18
19     </ListView>
20
21 </RelativeLayout>
22
23
```

Figure 3.4: category_item_grid.xml

In Figure 3.4, there are properties of category item grid xml files. It shows properties and gaps about application buttons.



```
1 <RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
2     android:layout_width="fill_parent"
3     android:layout_height="fill_parent"
4     android:id="@+id/rootlayout"
5     android:padding="5dp"
6     android:background="#393737">
7
8     <ListView
9         android:id="@+id/lsv_fav"
10        android:layout_width="fill_parent"
11        android:layout_height="fill_parent"
12        android:cacheColorHint="#00000000"
13        android:divider="@color/divider"
14        android:dividerHeight="5dp"
15        android:padding="5dp"
16        android:listSelector="@drawable/list_selector">
17
18    </ListView>
19
20    <TextView
21        android:id="@+id/textView1"
22        android:layout_width="wrap_content"
23        android:layout_height="wrap_content"
24        android:layout_centerHorizontal="true"
25        android:layout_centerVertical="true"
26        android:text="@string/img_no"
27        android:visibility="gone"
28        android:textColor="@color/blue"
29        android:textAppearance="@android:attr/textAppearanceMedium" />
30
31 </RelativeLayout>
32
```

Figure 3.5: fragment_favorite.xml

In Figure 3.5, it is about favorite part of application for xml files. It is for designing properties.


```

1  <?xml version="1.0" encoding="utf-8"?>
2  <LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
3      android:layout_width="match_parent"
4      android:layout_height="wrap_content"
5      android:orientation="horizontal"
6      android:padding="5dp"
7      android:background="@drawable/rounded_corner">
8
9      <LinearLayout
10         android:layout_width="match_parent"
11         android:layout_height="wrap_content"
12         android:background="@drawable/list_selector">
13
14
15
16         <LinearLayout
17             android:layout_width="wrap_content"
18             android:layout_height="wrap_content"
19             android:background="@drawable/image_rounded_corner"
20             android:layout_margin="5dp"
21             >
22
23             <ImageView
24                 android:id="@+id/picture"
25                 android:layout_width="72dp"
26                 android:layout_height="72dp"
27                 android:padding="5dp"
28                 android:src="@drawable/ic_launcher"
29                 android:contentDescription="@string/desc"/>
30             </LinearLayout>
31
32
33             <LinearLayout
34                 android:layout_width="wrap_content"
35                 android:layout_height="wrap_content"
36                 android:orientation="vertical"
37                 android:layout_marginLeft="18dp"
38                 android:layout_margin="5dp">
39
40                 <TextView
41                     android:id="@+id/text"
42                     android:layout_width="wrap_content"
43                     android:layout_height="wrap_content"
44                     android:text=""
45                     android:textColor="@color/blue"
46                     android:textSize="14sp"

```

Figure 3.6: latest_lsv_item.xml

In Figure 3.6, it is about properties of latest button design. It shows how to look latest button for application users.

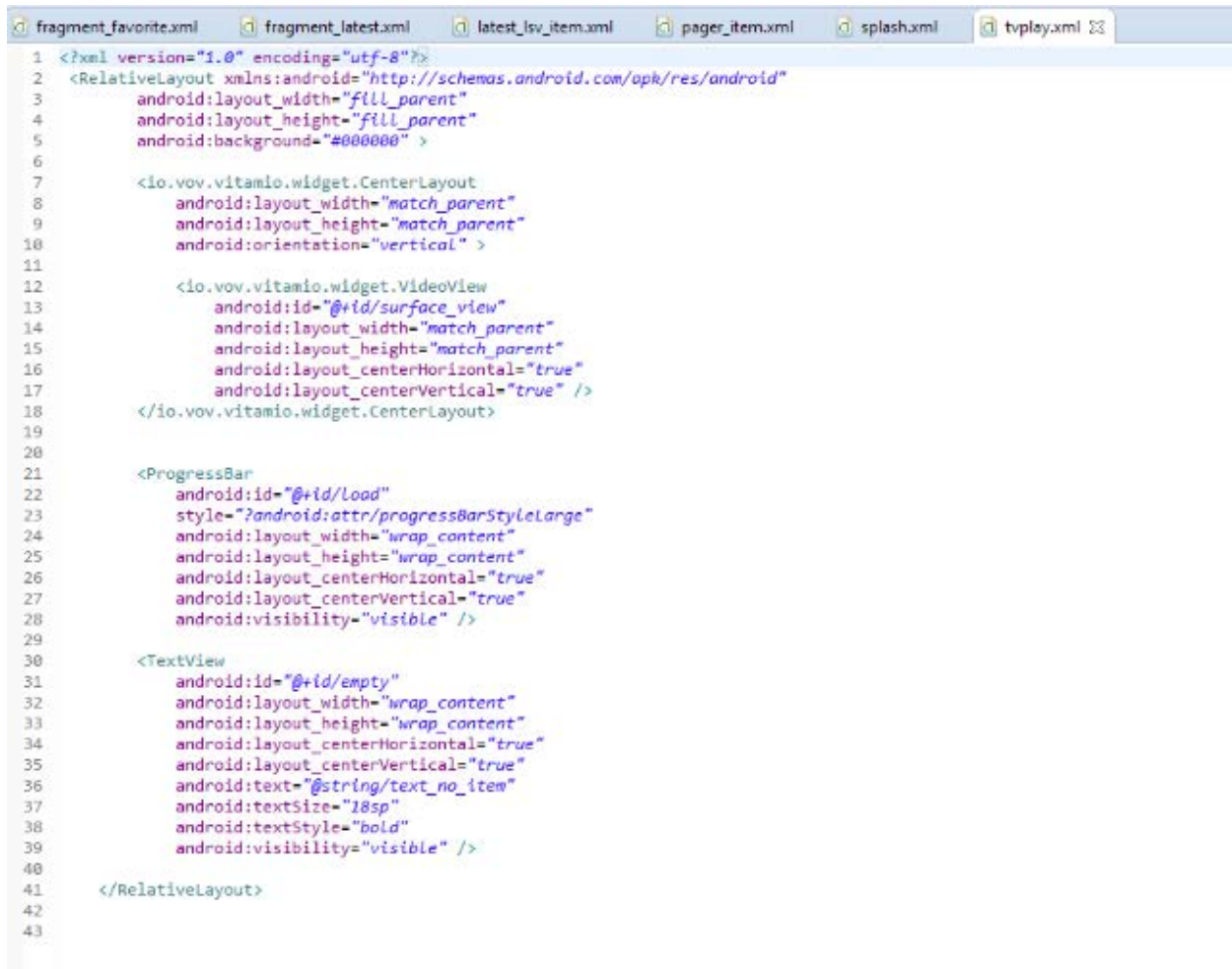
```

1  <?xml version="1.0" encoding="utf-8"?>
2  <ScrollView xmlns:android="http://schemas.android.com/apk/res/android"
3      android:layout_width="fill_parent"
4      android:layout_height="fill_parent"
5      android:layout_weight="1"
6      android:background="#393737">
7
8      <LinearLayout
9          android:layout_width="fill_parent"
10         android:layout_height="wrap_content"
11         android:orientation="vertical">
12
13         <RelativeLayout
14             android:layout_width="wrap_content"
15             android:layout_height="wrap_content">
16
17             <ImageView
18                 android:id="@+id/stationImage"
19                 android:layout_width="fill_parent"
20                 android:layout_height="wrap_content"
21                 android:adjustViewBounds="true"
22                 android:layout_marginTop="8dp"
23                 android:layout_marginBottom="4dp"
24                 android:layout_marginLeft="8dp"
25                 android:layout_marginRight="8dp"
26                 android:src="@drawable/station_default"
27                 android:contentDescription="@string/desc" />
28
29             <ImageView
30                 android:id="@+id/play"
31                 android:paddingTop="10dp"
32                 android:layout_width="100dp"
33                 android:layout_height="100dp"
34                 android:layout_centerHorizontal="true"
35                 android:layout_centerVertical="true"
36                 android:contentDescription="@string/desc"/>
37
38         </RelativeLayout>
39
40         <TextView
41             android:id="@+id/channelName"
42             android:layout_width="match_parent"
43             android:layout_height="wrap_content"
44             android:layout_marginTop="4dp"
45             android:gravity="left"
46             android:padding="5dp"

```

Figure 3.7: pager_item.xml

In Figure 3.7, it is for channel buttons. Developers can create the desing properties with xml files. It shows desing for channel description properties.



```

1  <?xml version="1.0" encoding="utf-8"?>
2  <RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
3      android:layout_width="fill_parent"
4      android:layout_height="fill_parent"
5      android:background="#000000" >
6
7      <io.vov.vitamio.widget.CenterLayout
8          android:layout_width="match_parent"
9          android:layout_height="match_parent"
10         android:orientation="vertical" >
11
12         <io.vov.vitamio.widget.VideoView
13             android:id="@+id/surface_view"
14             android:layout_width="match_parent"
15             android:layout_height="match_parent"
16             android:layout_centerHorizontal="true"
17             android:layout_centerVertical="true" />
18     </io.vov.vitamio.widget.CenterLayout>
19
20
21     <ProgressBar
22         android:id="@+id/load"
23         style="?android:attr/progressBarStyleLarge"
24         android:layout_width="wrap_content"
25         android:layout_height="wrap_content"
26         android:layout_centerHorizontal="true"
27         android:layout_centerVertical="true"
28         android:visibility="visible" />
29
30     <TextView
31         android:id="@+id/empty"
32         android:layout_width="wrap_content"
33         android:layout_height="wrap_content"
34         android:layout_centerHorizontal="true"
35         android:layout_centerVertical="true"
36         android:text="@string/text_no_item"
37         android:textSize="18sp"
38         android:textStyle="bold"
39         android:visibility="visible" />
40
41 </RelativeLayout>
42
43

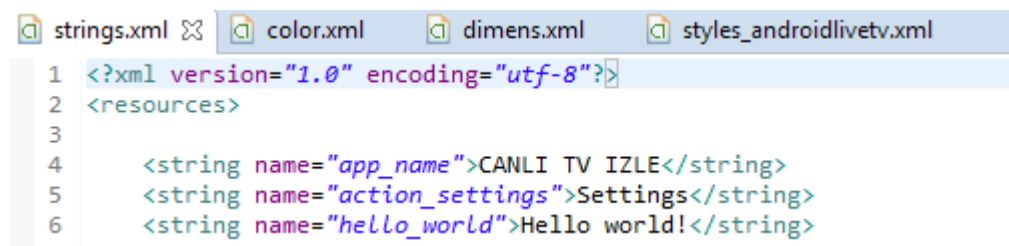
```

Figure 3.8: tv_play.xml

In Figure 3.8, it is for tv play screen. Developers can create the desing properties of tv play screen. It shows desing for channel description properties.

3.4.3 Eclipse Application Name

In the android project, we have to name for our android project name. In the project name, it is also the same name on the Google Play Store. If your project name is interesting, it will be better than normal name. Because, android users can wonder about it and they can download your application.



```
1 <?xml version="1.0" encoding="utf-8"?>
2 <resources>
3
4     <string name="app_name">CANLI TV İZLE</string>
5     <string name="action_settings">Settings</string>
6     <string name="hello_world">Hello world!</string>
```

Figure 3.9: Name Of Application

In Figure 3.9, it is the name of application. We can change application names everytime from this part of code.

If developers want to change application name, developers have to follow below steps :

*Application Folder>res>values>string.xml

*<string name="app_name">CANLI TV İZLE</string>

If the developers want to change project name, developers have to follow below steps :

*Right Click project name>Project from package explorer>Refactor>Rename>Enter Project Application name>Finish

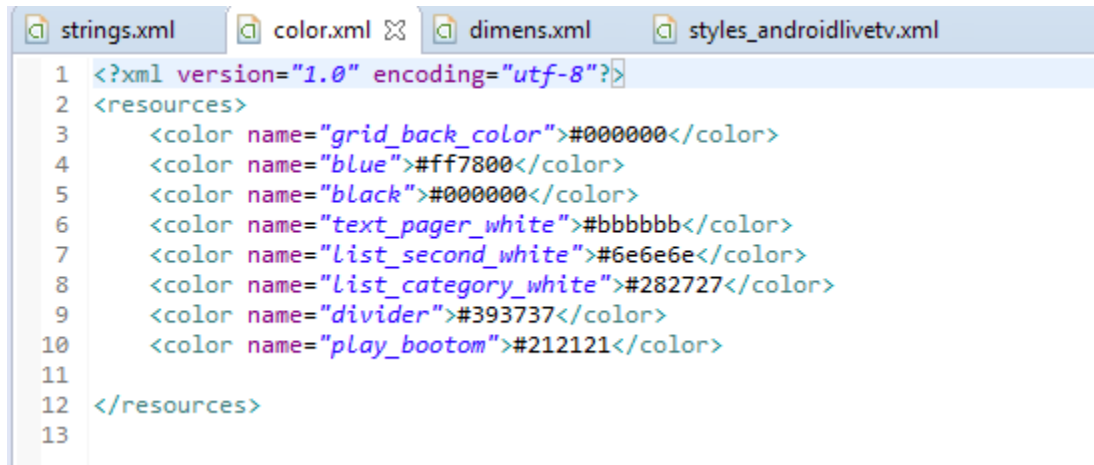


Figure 3.10: Color Information About Application

In Figure 3.10,it shows color information for android live application.It is about color desing of applciation.



Figure 3.11: Application Icon

In Figure 3.11,it is the icon of live tv android application.




Figure 3.12: Splash Screen Icon

In Figure 3.12,it is the starting screen of live tv android application.

3.4.4 Where is the put Server Url in Application

We have to find the server about our webservices. We have to keep all of services and streaming events in our server. So, I bought domain and hosting as a server. Because, if I do not have server, I can not develop my android live tv application.

The image is a screenshot of an IDE window titled "Constant.java". It contains Java code defining a class named "Constant" that implements the "Serializable" interface. The code includes several static final String variables representing server URLs and other constants. The code is as follows:

```
1 package com.example.util;
2
3 import java.io.Serializable;
4
5 public class Constant implements Serializable{
6
7     /**
8      *
9      */
10    private static final long serialVersionUID = 1L;
11
12    public static final String SERVER_IMAGE_UPFOLDER_THUMB="http://mycollegetvapp.com/images/thumbs/";
13
14    public static final String SERVER_IMAGE_UPFOLDER="http://mycollegetvapp.com/images/";
15
16    public static final String LATEST_URL = "http://mycollegetvapp.com/api.php?latest=15";
17
18    public static final String CATEGORY_URL = "http://mycollegetvapp.com/api.php";
19
20    public static final String CATEGORY_ITEM_URL = "http://mycollegetvapp.com/api.php?cat_id=";
21
22
23    public static final String LATEST_ARRAY_NAME="LIVETV";
24    public static final String CHANNEL_ID="id";
25    public static final String CHANNEL_CATID="cat_id";
26    public static final String CHANNEL_CAT_NAME="category_name";
27    public static final String LATEST_CHANNEL_URL="channel_url";
28    public static final String LATEST_CHANNEL_NAME="channel_title";
29    public static final String LATEST_CHANNEL_DESCRIPTION="channel_desc";
30    public static final String LATEST_CHANNEL_IMAGE="channel_thumbnail";
31
32
33    public static final String CATEGORY_ARRAY_NAME="LIVETV";
34    public static final String CATEGORY_NAME="category_name";
35    public static final String CATEGORY_CID="cid";
36    public static final String CATEGORY_IMAGE="category_image";
37
38
39
40
41
42
43
44
45
46
47
```

Figure 3.13 : Server URL

In Figure 3.13, it shows how to put your server url to your android application.

Developers have to apply below steps for put the server url to android application :

- *Select project>go to com.example.util package>Contant.java class
- *Open Contatn.java class
- *And put the your server url in your application

3.4.5 How to find channel live stream URL

In live tv android application, we have to find stream link url of live channel. Channel stream link is not the website live tv url. If you try to do with website url of channel, you can not reach the live broadcast. Because, stream is different from web sites of channel url. So, I have to find Turkish live tv channel url stream. I researched on the a lot of website on the internet. Finally I found the some Turkish live channel stream url.

There are some Turkish live tv channel stream links on the internet. I found my channels stream urls form below link :

<http://www.iptvlinks.com/2014/12/iptv-turkey-url-list.html>

3.4.6 How to check the channel stream urls are working

After the finding channel stream url process, you need to check it. Because, there are many channel stream url on the internet. But some of them are not working properly. If you not check stream url, your live channel on the application does not works properly.

For checking the stream url, you have to do some steps on the below.

First step is I have to download VLC Player. You can find the download link on the below.

<http://www.videolan.org/vlc/>

Second step is I downloaded it and I set up on my computer.

Third step is open player and select open network stream. And paste your stream link here.

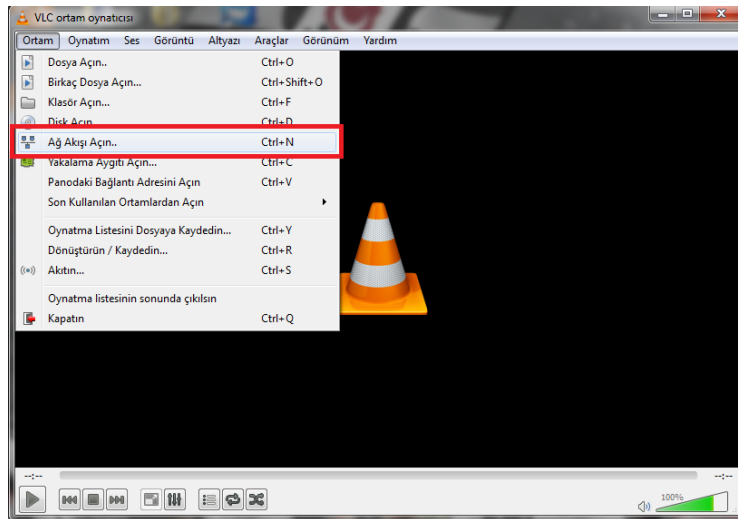


Figure 3.14: Checking Stream Url

In Figure 3.14, you have to select network line from VLC media player for streaming.

Fourth step is after coping the link,please select the play button.

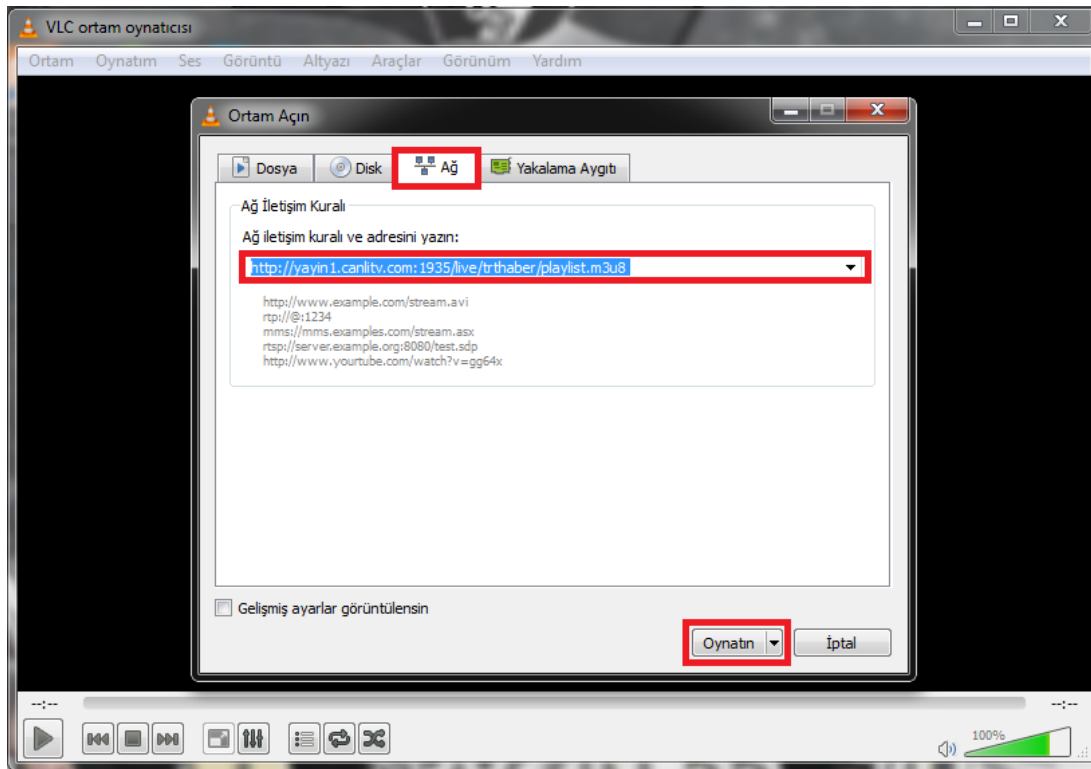


Figure 3.15: Checking Stream Url

In Figure 3.15,I pasted my channel stream links for checking the channel links.

If the channel stream link is working properly,I have to use the link for my live tv application.

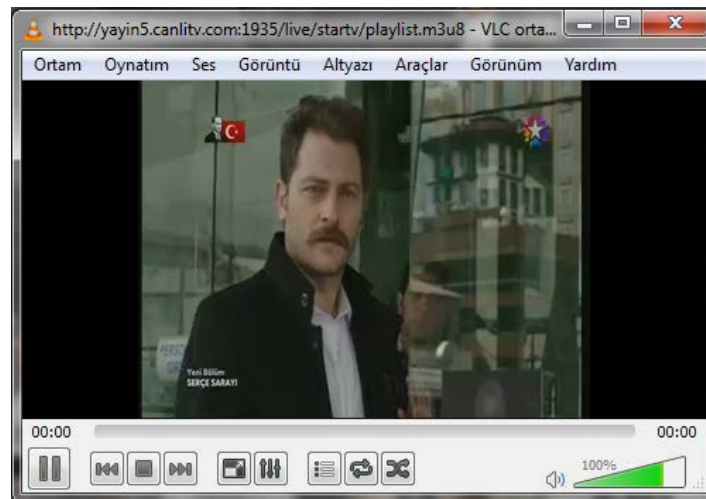


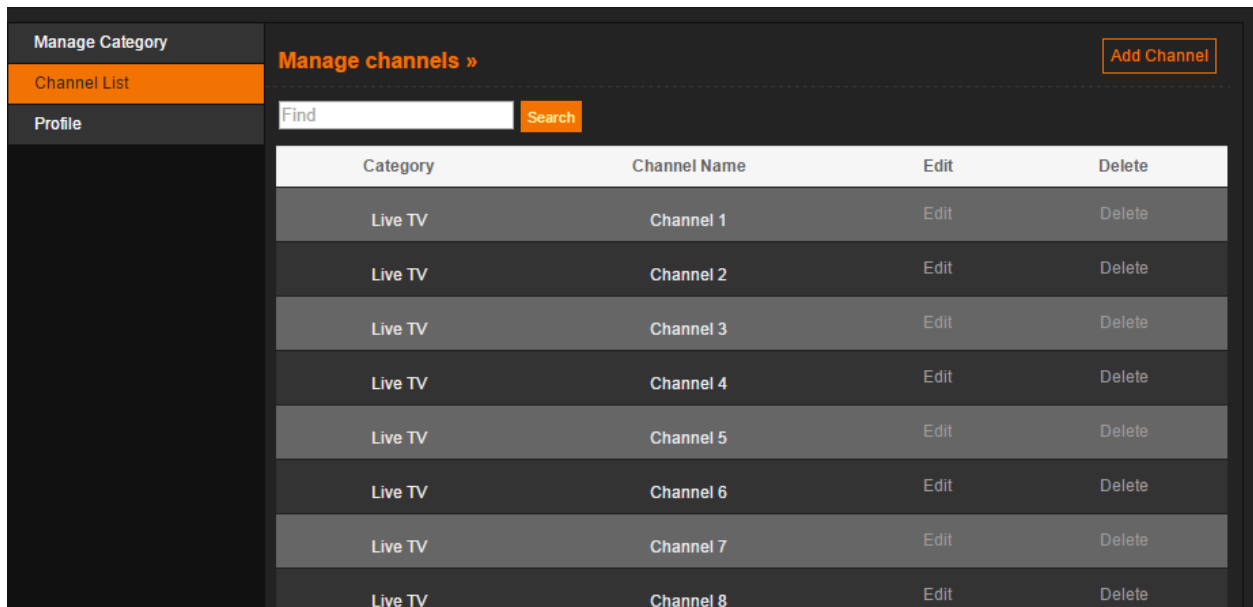
Figure 3.16: Checking Stream Url

In Figure 3.16,it shows channel stream link is working properly.

3.4.7 How to add channel on admin pages

To add channel , I have to enter my server admin panel and I can add or delete channel with this admin panel.I have to add my channel stream url,my channel name,channel picture and channel description.The most important part of this process is stream url.Because if stream link is does not work properly,other parts is not important.

I will explain about adding or deleting channels details with the screenshots on your server.

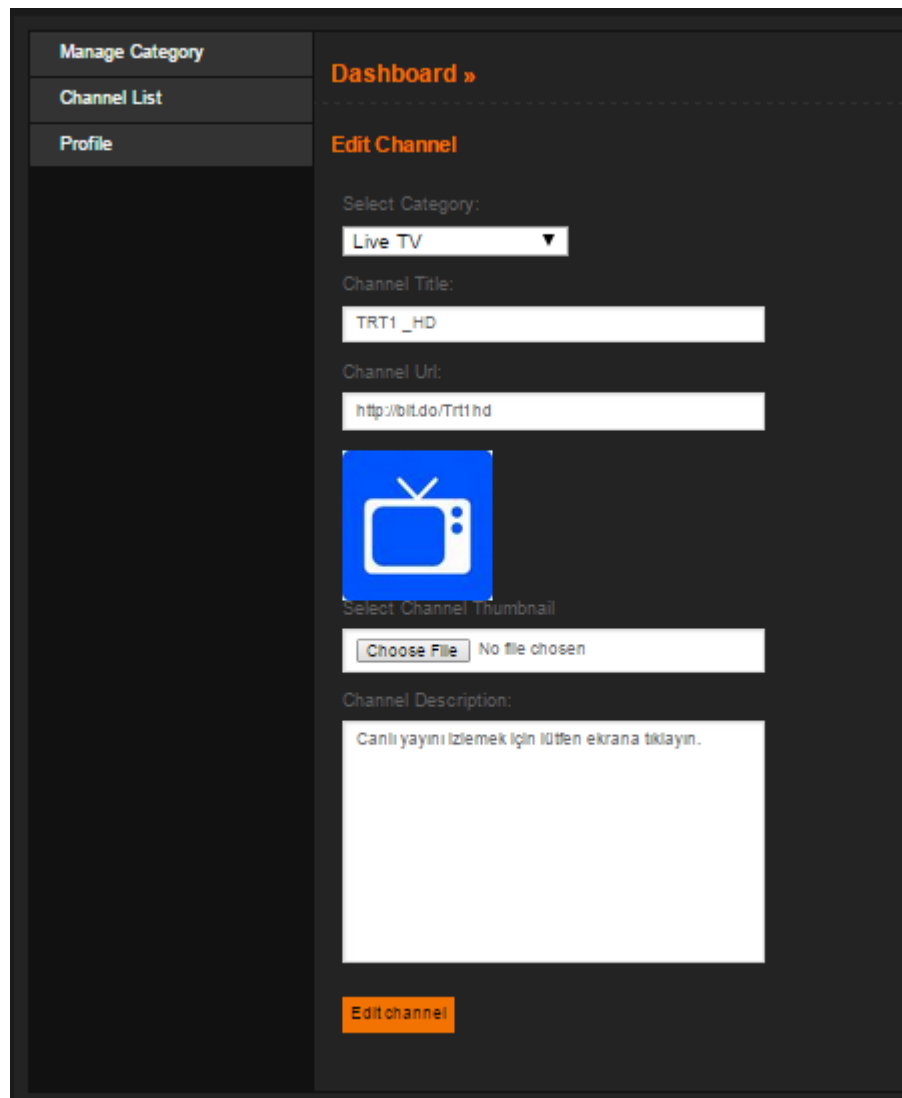


Manage Category	Manage channels »			Add Channel
Channel List	Find <input type="text"/>			Search
Profile	Category	Channel Name	Edit	Delete
	Live TV	Channel 1	Edit	Delete
	Live TV	Channel 2	Edit	Delete
	Live TV	Channel 3	Edit	Delete
	Live TV	Channel 4	Edit	Delete
	Live TV	Channel 5	Edit	Delete
	Live TV	Channel 6	Edit	Delete
	Live TV	Channel 7	Edit	Delete
	Live TV	Channel 8	Edit	Delete

Figure 3.17 : How to add channel on admin pages

In the Figure 3.17,I have 3 options as Manage Category,Channel List and Profile.Manage category helps us for managing category.Profile part is about my server and my admin panel prfoil.In the part of channel list,I can add or delete my stream channel url,channel title,channel descripton or channel thumbnail.

Some information about my added channel name,stream url and description :



The screenshot shows an admin interface with a dark theme. On the left is a sidebar with three menu items: 'Manage Category', 'Channel List', and 'Profile'. The main content area is titled 'Dashboard »' and 'Edit Channel'. It contains several form fields: 'Select Category:' with a dropdown menu showing 'Live TV'; 'Channel Title:' with a text input containing 'TRT1_HD'; 'Channel Url:' with a text input containing 'http://bit.do/Trt1hd'; a thumbnail image of a television; 'Select Channel Thumbnail:' with a 'Choose File' button and the text 'No file chosen'; and 'Channel Description:' with a text area containing 'Canlı yayını izlemek için lütfen ekrana tıklayın.'. At the bottom right is an orange 'Edit channel' button.

Figure 3.18 : How to add channel on admin pages

In Figure 3.18,you will see the some information about TRT1 HD channel.If I want to change on my channel information , I have to connect to my server and I can change what I want.

Manage Category

Channel List

Profile

Dashboard »

Edit Channel

Select Category:


Live TV ▼

Channel Title:

TV8

Channel Url:

http://yayin1.canlitv.com:1935/live/tv8/playlist.m3u8



Select Channel Thumbnail

Choose File

No file chosen

Channel Description:

Canlı yayını izlemek için lütfen ekrana tıklayın.

Figure 3.19 : How to add channel on admin pages

In Figure 3.19,you will see the some information about TV8 channel.It is about channel category,channel title,channel url and channel description.

Manage Category

Channel List

Profile


Dashboard »

Edit Channel

Select Category:
Live TV ▼

Channel Title:
TRT HABER

Channel Url:
http://yayin1.canlitv.com:1935/live/trthaber/playlist.m3u



Select Channel Thumbnail
Choose File No file chosen

Channel Description:
Canlı yayını izlemek için lütfen ekrana tıklayın.

Figure 3.20: How to add channel on admin pages

In Figure 3.20,you will see the some information about TV8 channel.It is about channel category,channel title,channel url and channel description.

All of the channel stream urls links on the below :

<http://yayin1.canlitv.com:1935/live/haberturk/playlist.m3u8>

<http://yayin1.canlitv.com:1935/live/ntv/playlist.m3u8>

<http://yayin1.canlitv.com:1935/live/ntvspor/playlist.m3u8>

<http://yayin5.canlitv.com:1935/live/atv/playlist.m3u8>

<http://yayin5.canlitv.com:1935/live/startv/playlist.m3u8>

<http://yayin1.canlitv.com:1935/live/trthaber/playlist.m3u8>

<http://yayin1.canlitv.com:1935/live/tv8/playlist.m3u8>

<http://bit.do/Trt1hd>

These links are not same link on channel web site url.Because,stream links are different from websites link.

3.4.8 Adding channels to favorites part on the application

I decided to create favorite part in my application for android users. There are many channels on my application. If users do not watch these channels, users can add their favorite channels to favorite part of application. With this feature, users can watch just what they watch on live channel application. Purpose of this feature is to customize to application for android users.

3.4.9 Exit part of application

In this part of application, when users want to exit from application, this message shows by mobile application.

The warning message is like this “Çıkış yapmak istediğinize emin misiniz?”

```
alert.setTitle(string.app_name);
alert.setIcon(R.drawable.app_icon);
alert.setMessage("Çıkış yapmak istediğinize emin misiniz ?");

alert.setPositiveButton("evet",
    new DialogInterface.OnClickListener() {
        public void onClick(DialogInterface dialog,
            int whichButton) {
            finish();
        }
    });

alert.setNegativeButton("hayır",
    new DialogInterface.OnClickListener() {

        public void onClick(DialogInterface dialog, int which) {
            // TODO Auto-generated method stub

        }
    });
alert.show();
return true;
}
```

Figure 3.21: Exit part of application

In Figure 3.21, it shows when users want to exit from application, this message will show by application to android application users.

4.MySQL

4.1 Definition

MySQL is the more than six million systems installed on multi-threaded (multi-threaded), multi-user (multi-user), a fast and robust (robust) is a database management system. There is free version for UNIX, OS/2 and Windows. Also there is paid version for who want to use commercial license. It has more faster performance on LINUX. MySQL is open source platform. Developers say, their databases consisting of 10,000 table contains more than 500 records 7 million (about 100 gigabytes of data) they keep on MySQL.

MySQL is most used platform of web server. It can use by ASP and PHP web programming language. MySQL access rights involved in a multi-user system with holding the table to solve the problem successfully. Along with the MySQL 4.0 release of "transaction" support has been added to the sub-query support with version 4.1.

MySQL supports the following database objects are in some of these objects came with version 5.1:

- *Tables

- *Views

- *Procedures

- *Triggers

- *Cursors



Figure 4.1: MySQL

4.2 Apache Definition

Apache is a free and open source web server software. Being developed by the Apache Software Foundation. Apache is working on Unix, GNU, FreeBSD, Linux, Mac OS X, Windows, OS/2 and Novell Netware. Generally apache has new updates on every month. Apache was very important for developing and being common of world wide web. Apache has been the most widely used web server in the internet from 1996. Last years using apache server is decrease. According to developers this situation about the increasing of using Microsoft server.



Figure 4.2 : Apache HTTP Server

4.3 Xampp Control Panel Definition

Xampp developed for running our php content web sites on personal computer. It has many different programs like that apache web server, PHP, MySQL and PhpMyAdmin. Thanks to xampp panel developers can create Joomla, Word press or Vbulletin projects on developers personal computer.

You can download xampp panel on the below link:

<https://www.apachefriends.org/index.html>

At the below programs can setup on your computer with xampp.

*Apache 2.2.12 (IPv6 enabled) + OpenSSL 0.9.8k

*MySQL 5.1.37 + PBXT engine

*PHP 5.3.0

*phpMyAdmin 3.2.0.1

*Webalizer 2.21-02 + GeoIP lite

*FileZilla FTP Server 0.9.32

*msmtp 1.4.17

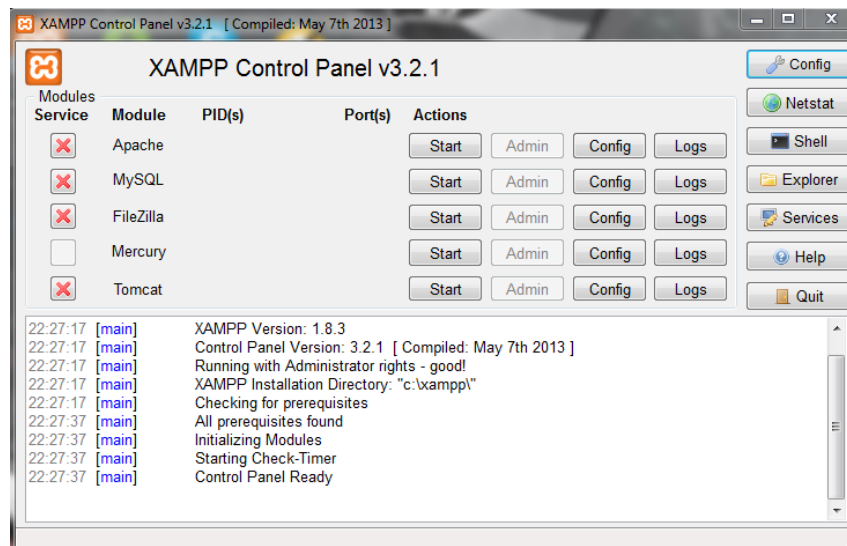


Figure 4.3: Xampp Control Panel

In Figure 4.3, It is xampp control panel. We can start Apache and MySQL servers for the application.

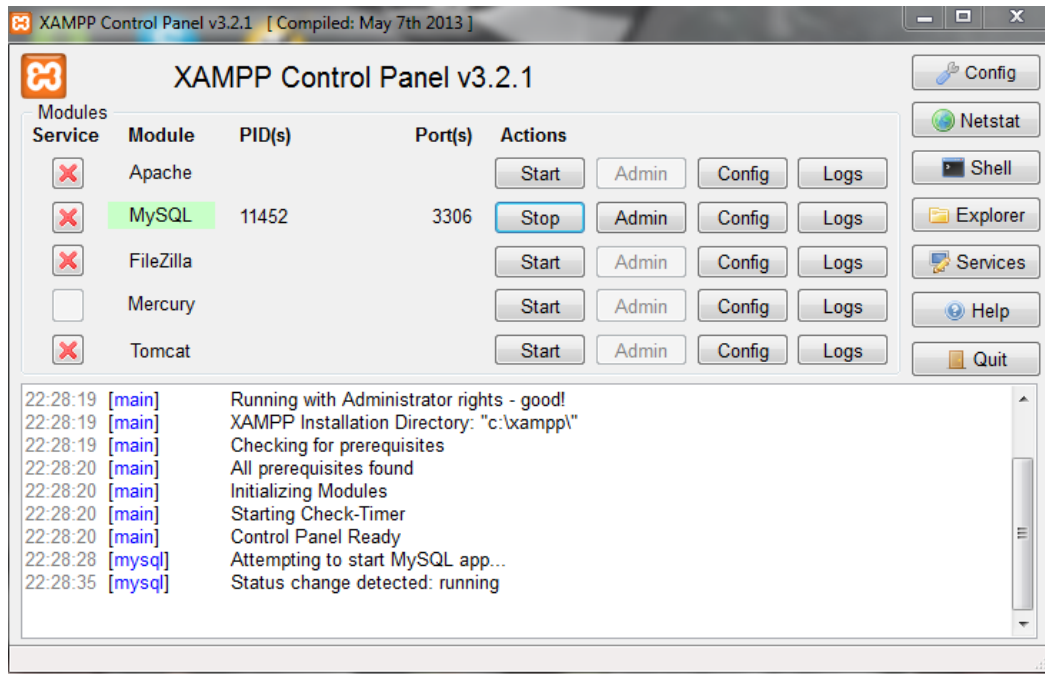


Figure 4.4: Xampp Control Panel

In Figure 4.4, It is xampp control panel. I started the MySQL connection.

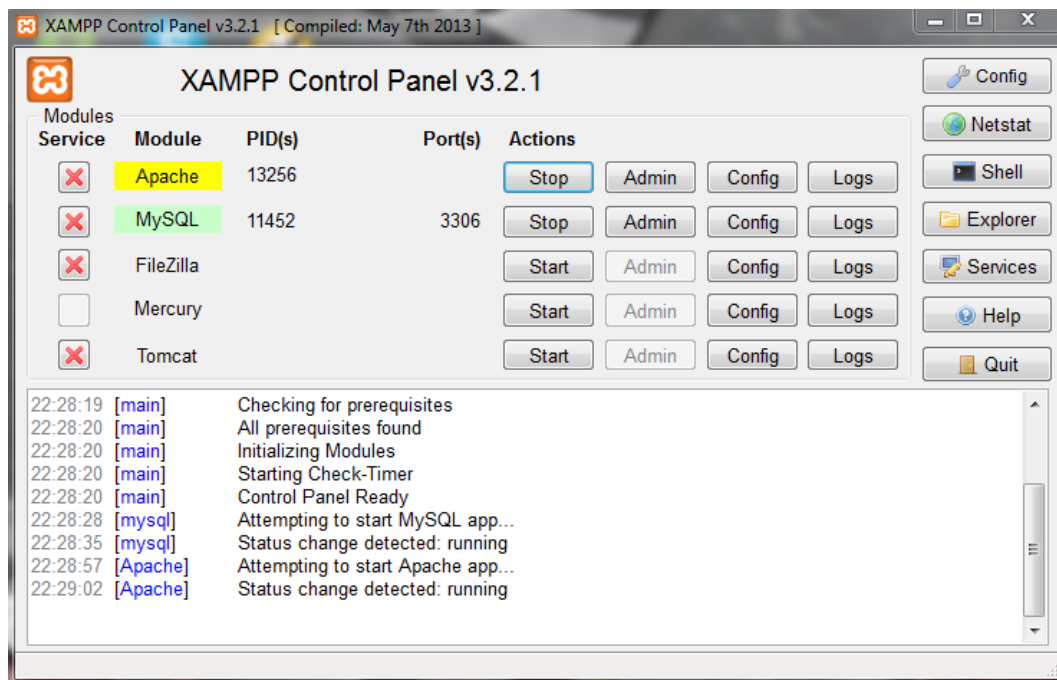


Figure 4.5: Xampp Control Panel

In Figure 4.5, It is xampp control panel. I started the Apache connection.

After running process on the xampp control panel, we can connect our databases.

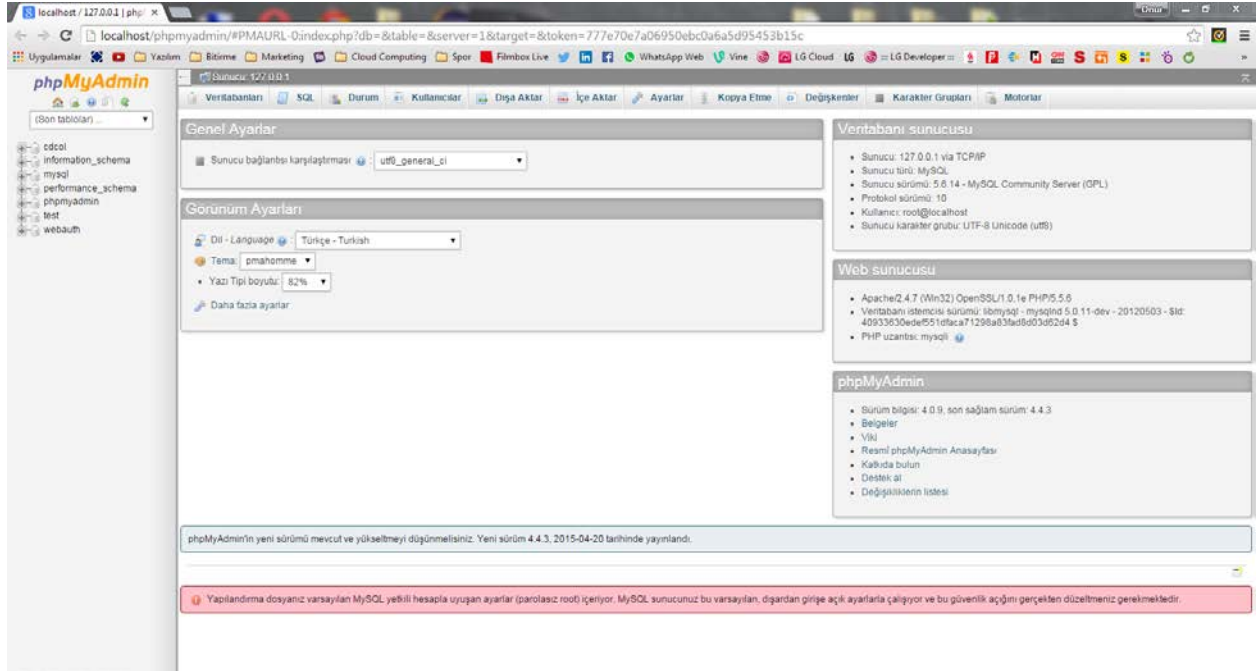


Figure 4.6: Xampp Control Panel

In Figure 4.6, it shows databases of android live tv application. You can create databases or you can manage your database with this page. If you can add new table or delete table, you have to connect database with this page.

4.4 Hosting And Server Information

I had to buy hosting for developing android live tv application. I used domain and hosting as a server. There is information about my server and hosting on the below screenshots.

cPanel Details :

<http://mycollegetvapp.com/cpanel>

The image shows the cPanel login interface. At the top is the large orange 'cPanel' logo. Below it, the text 'cPanel Oturum Aç' is displayed. To the right of this text is a dropdown menu labeled 'Dil Seç' with a downward arrow. Below the text are two input fields: the first is labeled 'Kullanıcı adı' and contains the placeholder text 'Kullanıcı adınızı girin.'; the second is labeled 'Şifre' and contains the placeholder text 'Hesap şifrenizi girin.'. At the bottom of the form is a green button with the white text 'Giriş Yap'.

Figure 4.7: cPanel Screen

In Figure 4.7, It is for application server's manage system. We can connect to our server and we can change something for android live tv application.

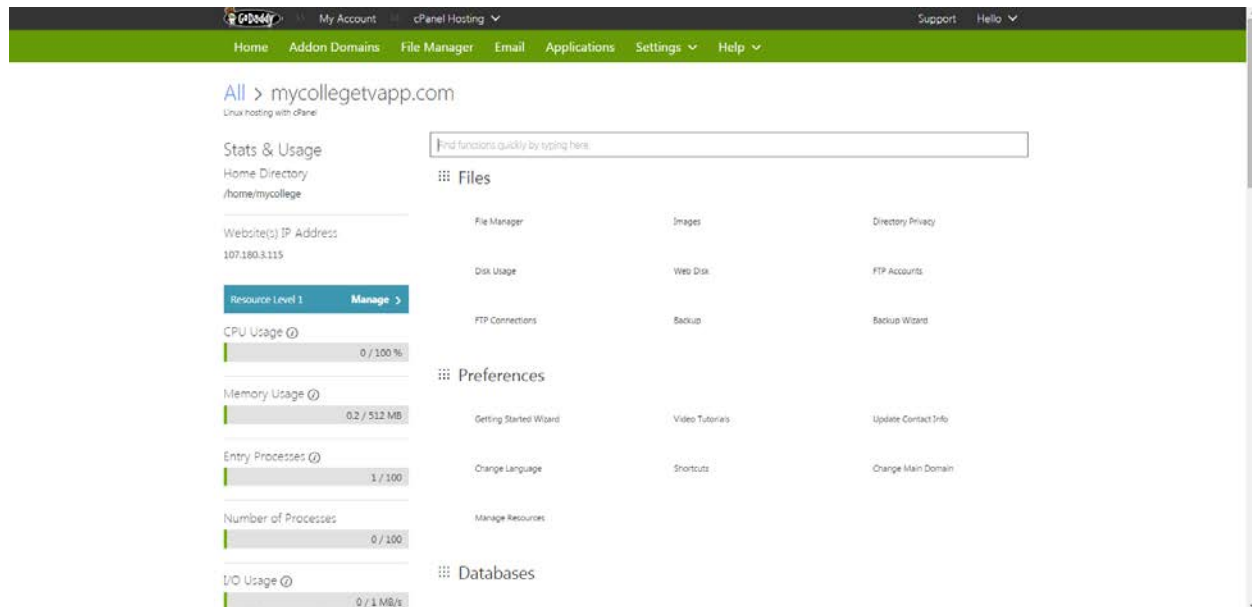


Figure 4.8: cPanel Information

In Figure 4.8, it shows c panel details and information for my server.

4.5 How to configure webservice with application

We need to configure our server and webservice. If it is not available, application can not work properly.

I will explain how to configured webservices and server on the below steps.

*First, copy the web services and paste it to htdocs file in xampp control panel file.

*Then create a database and import the database from database folder on your server.

*After these steps, if you can connect to your localhost/phpmyadmin page, it will work properly.

4.6 Admin Panel

The admin panel helps to developers for adding or deleting channel, category and screenshots. When I want to add or delete channel, I have to connect with my admin panel and I have to add channel stream link, picture, channel description and channel name.

Admin Panel Detail :

<http://mycollegetvapp.com>

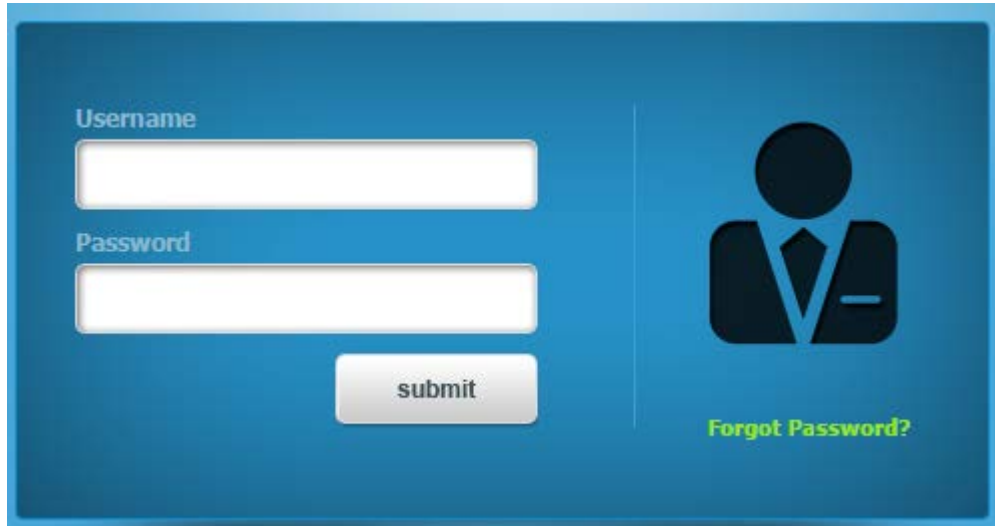


Figure 4.9: Admin Panel Screen

In Figure 4.9,it is for admin panel screen.Developers can add or delete or manage channels,category and all about the application with this panel screen.

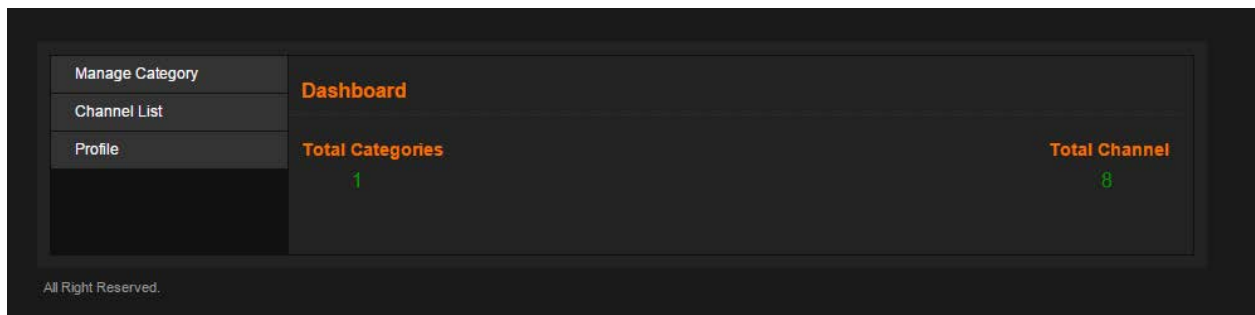


Figure 4.10: Home Screen On Admin Panel

In figure 4.10,it is home page of admin panel.

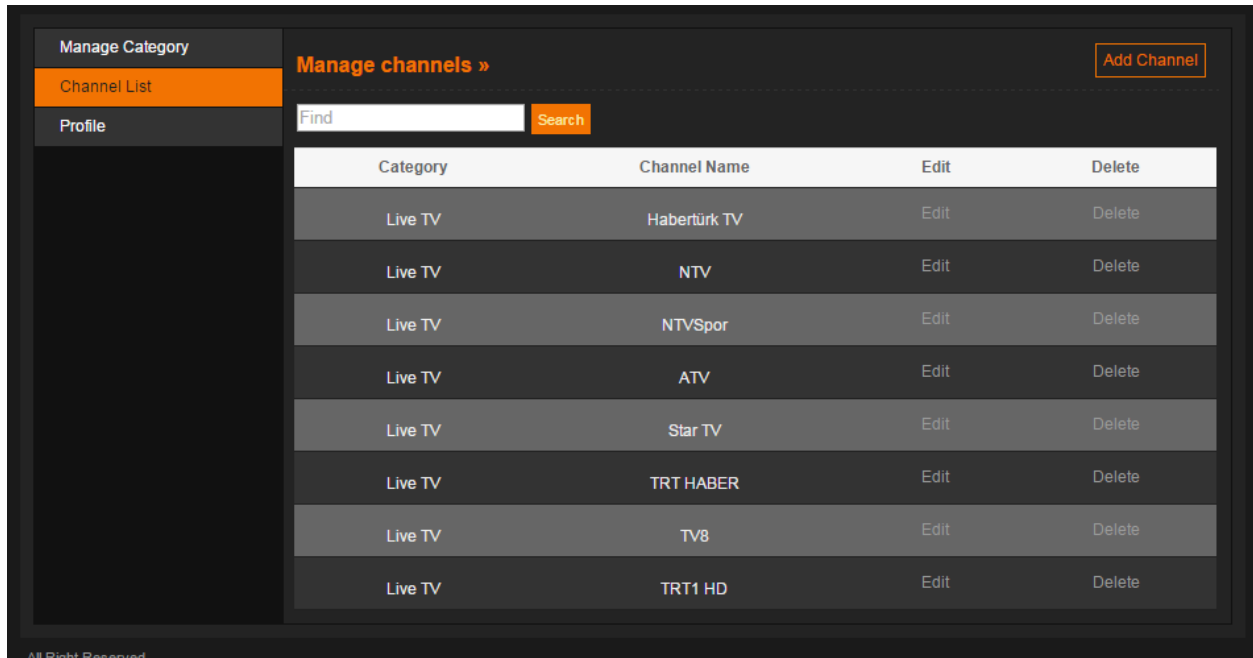


Figure 4.11: Channel Edit Screen On Admin Panel

In Figure 4.11, you can change your tv channel name, channel image or channel description. Also, you can edit your category or you can add or delete channel from this screen.

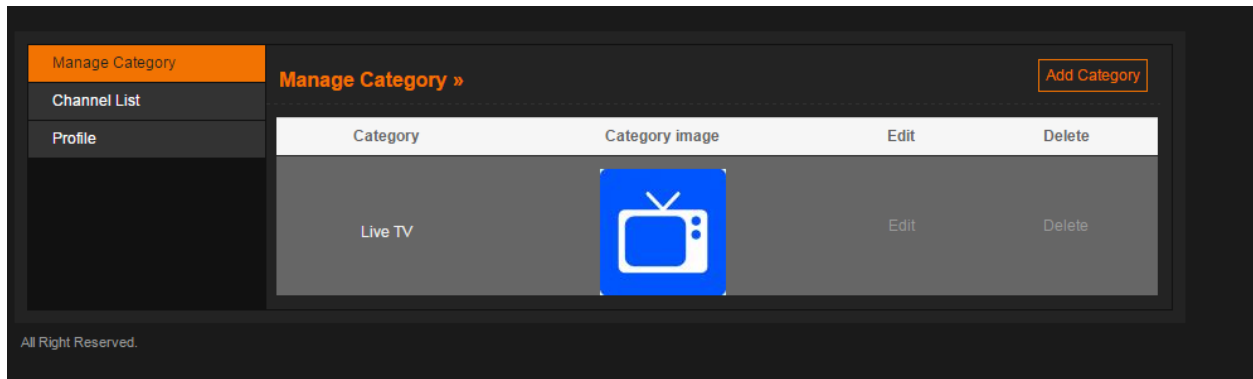


Figure 4.12: Manage Category Screen On Admin Panel

If I want to change on my android live tv application,I can connect my admin panel and I can add channel or category.I can change my channel list or name.Also,I can configure my channel description or my picture information.This panel is center of the android live tv application.

5. SCREENSHOTS ON ANDROID MOBILE DEVICES

At the end of project,I took some photos how to seen it by users.

5.1 Splash Screen



Figure 5.1: Splash Screen

In Figure5.1,it is about starting project screen.Users will see the screen when application is starting.

5.2 Latest Screen

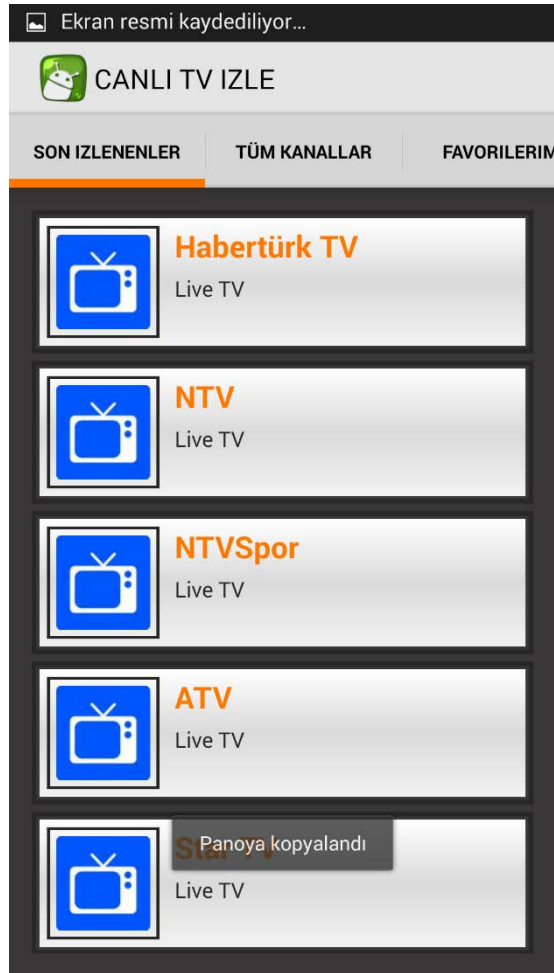


Figure 5.2: Latest Screen

In Figure5.2,it is about first screen on mobile application.Users can select what they watch last time on the application from this screen.

5.3 All Channel Screen

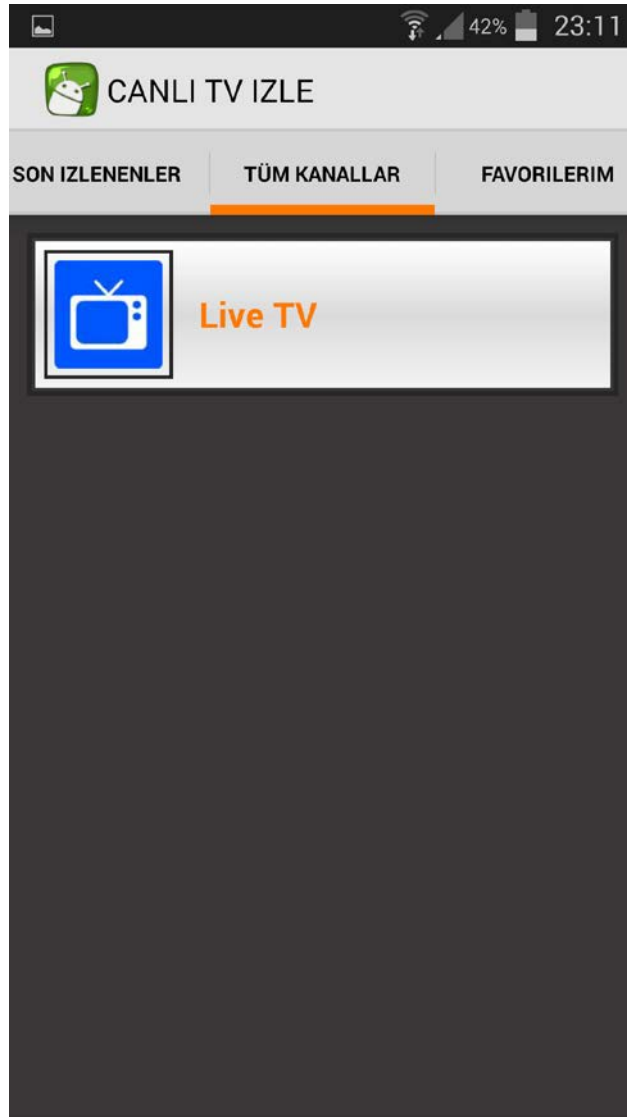


Figure 5.3: All Channel Screen

In Figure5.3,it is about all channel screen on mobile application.Users can reach all channels on the application.

5.4 Favorite Screen

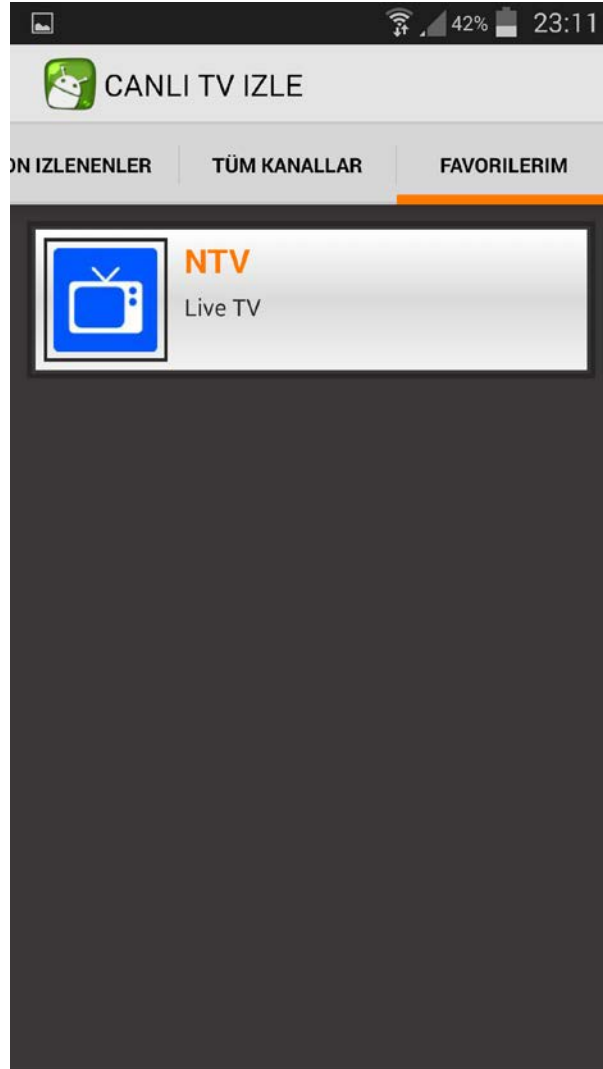


Figure 5.4: Favorite Screen

In Figure5.4,it is about favorite channels screen on mobile application.Users can add favorite channel to the this part of application.

5.5 Channels Screen

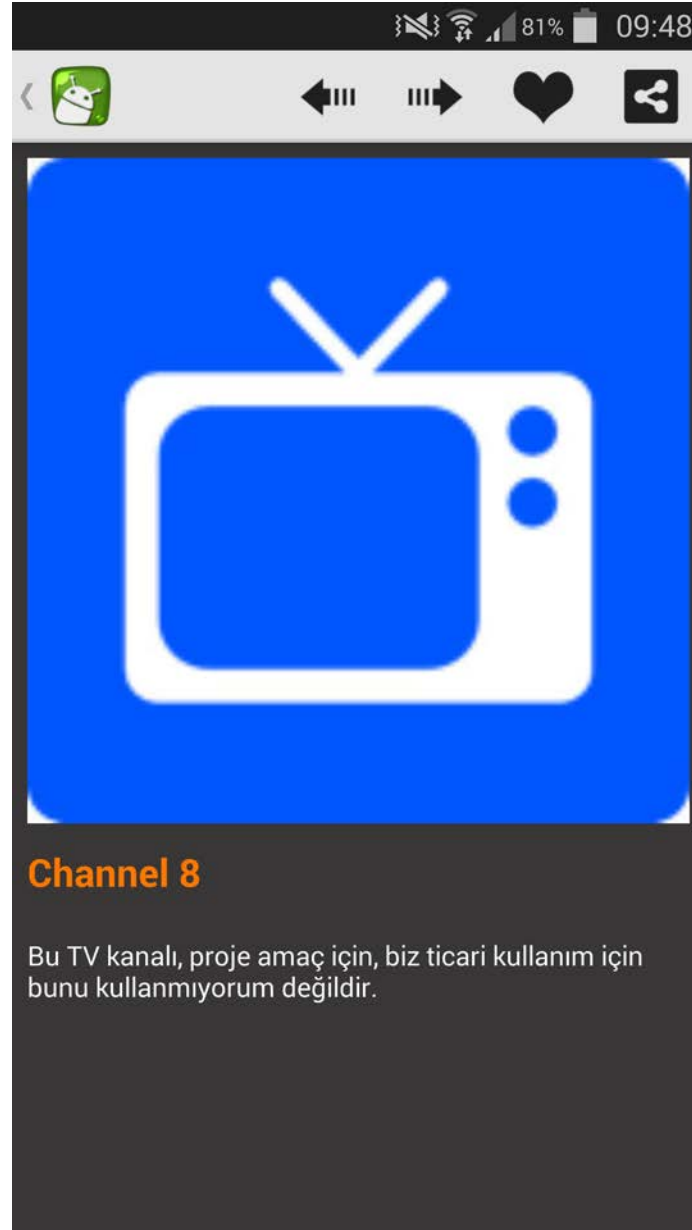


Figure 5.5: Channel Screen

In Figure5.5,it is about live channels screen on mobile application.Users can touch the screen for watching live channel.

5.6 Broadcasting Screen



Figure 5.6: Broadcasting Screen

In Figure5.6,it is broadcasting live screen.

5.7 Existing Screen



Figure 5.7:Existing Screen

In Figure5.7,it is for existing application.When users want to exit the application,they will see this screen.

CONCLUSION

As a result of this project,I learned some developing styles.Also,I gained experience about how to develop anroid mobile project and how developers create their applications.

I definitely believe that my work on this project help me in my future jobs that I am going to have after we graduate.

I will put my work in this project proudly to our resumes.And I hope,android developers and android mobile phone user will benefit from my graduation project.

REFERENCES

1. <https://eclipse.org/>
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4. <https://www.apachefriends.org/tr/index.html>
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7. <http://android-developers.blogspot.com.tr/>
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9. <https://www.youtube.com/user/androiddevelopers>
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11. http://www.w3schools.com/php/php_mysql_intro.asp
12. <http://www.oracle.com/us/products/mysql/overview/index.html>
13. <https://www.eclipseuser.com/>
14. <http://eclipse.org/ide/>
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16. <http://www.androidcentral.com/>
17. <http://php.net/manual/en/configure.about.php>
18. <http://php.net/>
19. <http://developer.android.com/sdk/installing/adding-packages.html>
20. <http://developer.android.com/tools/support-library/index.html>

CURRICULUM VITAE I

PERSONAL INFORMATION

Name Surname: Onur OKTAY
Date of Birth: 08.12.1992
Place of Birth: Osmangazi/Bursa
Nationality: Turkish Republic
Driver's Licence: Yes (B Class-A2 Class)
Marital Status: Single
Cep Telefonu: 0531 925 84 75
Mail: onuroktay16@gmail.com



EDUCATION

Istanbul Aydın University, Engineering Faculty, Software Engineering (Engineering), 2010 - ..., GPA: 2.1 (Current GPA)

High School: İznik Anatolian High School/Bursa 2006– 2010

WORK EXPERIENCES AND INTERNSHIPS:

Intern, LG Electornics, Technical Support Engineer, September 2014 - ..

LANGUAGE SKILLS

English: Proficient in Reading, Writing, Speaking - TOEFL Score: 53
English Preparatory School – İstanbul Aydın University (2010-2011)