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Technology and Agriculture based android application

Pavanesh Kumar[1], Dr. Mamta Tiwari

[1]MCA, Computer Application Dept., UIET, Chhatrapati Shahu Ji Maharaj University Kanpur, Uttar Pradesh, India
[2]Asst. Prof., Computer Application Dept., UIET, Chhatrapati Shahu Ji Maharaj University Kanpur, Uttar Pradesh, India

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Abstract – *Technology in husbandry affects numerous areas of husbandry, similar to diseases, fungicides, seed technology, etc. Biotechnology and inheritable engineering have redounded in pest resistance and increased crop yields. robotization has led to effective tending, harvesting, and a reduction in homemade labor. Irrigation styles and transportation systems have bettered, the recycling ministry has reduced destruction, etc., and the effect is visible in all areas.*

New-age technologies concentrate on robotics, perfection husbandry, artificial intelligence, blockchain technology, and more. The purpose of the paper is to probe different android operations and grounded on that exploration makes an accessible mobile operation for Farmers and everyone interested in gardening and husbandry. And we created an operation name The Khet-Khalihan that provides several tools that are useful for druggies. We've used the Hindi language to make this app so every Hindi speaker can understand it and use this app accessibly.

Key Words: Agri-Ecosystem, Harvesting, agrarian apps, Internet of things (IoT), blockchain technology, Agriculture, Artificial intelligence (AI), Android, etc.

1.INTRODUCTION

Agriculture, whenever we read this term images of tractors, bullock wagons, and people working hard on the fields come across our minds. still, the time has changed and now technology has strained into the agrarian sector. Starting from high-tech ways to find out stylish quality seeds to stylish husbandry processes, there's a lot that can be done using the power of technology. At the same time, indeed the profit of the growers is anticipated to increase with the use of technology. Now, when it comes to technology, advanced ministry, and world-class tools indeed some software is being used by contemporary growers to enhance the quality of their husbandry. still, one of the stylish, and utmost useful integration of technology is the arrival of mobility. Indian agrarian sector contributes nearly 18 of the GDP (gross domestic product) and 40 percent of the complete pastoral NDP (Net Domestic Product). Despite the husbandry sector's donation to profitable growth, the Indian husbandry sector still faces a range of challenges—these range from issues like low productivity to lack of access to finance and global climate change. With the adding technological use in India, moment's technology can address so numerous challenges that growers face for illustration soil issues, irrigation, climate change, force chain gaps, etc. It can help them a more accurate vaticination of rainfall patterns, reduce destruction, and borrow further sustainable irrigation practices, in turn, enjoy better yields and better inflows. The use of ultramodern digital technology like detectors, robotics, GPS, and satellites is changing the face of Indian husbandry and making the husbandry sector smarter. Original work on this design started with a planter's crop-related problem and resulted in ultramodern technology. We started a review paper and published husbandry-grounded mobile operations. There we bandied technological aspects & ideas of an operation that are used in husbandry- grounded mobile operations.

Our design title is KHET- KHALIHAN APP. This app is developed for growers and everyone differently to know their crop-related problems and its result. When a stoner wants to know commodity about crop-related issues they can fluently perform open the operation and get a piece of knowledge about it, if it finds an issue critical, in that case fluently call on the Kisan helpline number and can find the result to the problems. Presently, we're making progress with our former review paper with another exploration, and also as a part of this final time design, we're working on mobile operation development with the use of XML (for layout design) and JAVA rendering (for connectivity with the layout).

The operation performed in our systems is knowledge of different crops, Kisan helpline, Crop product styles, Crop complaint and treatment, and Horticulture styles. This operation will be useful for growers and is a husbandry-grounded app.

We've used Android Studio software for developing this application.

1.1 Android

Android is an open-supply platform and it's miles a Linux-based running machine. It become first introduced on November 2007 and changed into in the beginning evolved via AndroidInc. and thereafter bought by using Google company. Android provides a wealthy operation frame that permits us to make modern apps and video games for cellular bias in a Java language teach. it's presently utilized in colourful bias analogous to mobiles, capsules, TVs, etc.

1.2 Android Application

Android packages are commonly developed in the Java programming language using the Android SDK (software program improvement package).Android operations can be packaged fluently and vended out both thru a store just like Amazon Appstore, Opera mobile keep, SlideME, and the Google Play keep. Android powers loads of millions of cellular biases in similarly than one hundred ninety countries round the world. It's the largest set up base of any mobile platform and developing presto. each day more than 1 million new Android biases are actuated international. This educational has been written to educate you on a way to develop and bundle an Android operation.

We're going to start with terrain setup for Android operation programming and also drill down to look into colourful components of android programs. Android working machine is the most important hooked up base amongst colorful cellular platforms across the globe masses of tens of millions of cell biases are powered via Android in further than one hundred ninety nations of the arena. It conquered around 71 of the global request shares through the quit of 2021, and this fashion is developing larger every different day.The employer named Open Handset Alliance advanced Android for the primary time which is grounded on the modified interpretation of the Linux kernel and other open-source software program. Google patronized the design in its unique tiers and the time 2005, it received the complete agency. An Android app is a software operation jogging at the Android platform. because the Android platform is erected for cellular bias, an ordinary Android app is designed for a phone or a tablet laptop walking at the Android zilch's. despite the fact that an Android app may be made to be had by means of inventors through their web sites, utmost Android apps are uploaded and posted on the Android market, an internet store committed to those operations.

Android apps are written within the Java programming language and use center libraries of java. they are first gathered to Dalvik executables to run on the Dalvik virtual gadget, that is a virtual system specifically designed for mobile bias. inventors can also download the Android software improvement tackle (SDK) from the Android internet site. The SDK includes gear, pattern law, and relevant files for developing Android apps. In September 2008, the first Android-powered tool turned into released inside the request. Android dominates the cellular zilch's assiduity because of the long listing of features it provides. It's stoner-friendly, has massive community support, provides a lesser extent of customization, and a big number of companies make Android-well suited smartphones. As a result, the request observes a sharp increase in the call for for growing Android cell operations, and with that groups need clever inventors with the right talent set. Android turns into an absolute set of software for all biases like drugs, wearables, set-top packing containers, clever TVs, scrapbooks, and so on.

Used phrases/Tech In application improvement

XML: Android layouts are written in XML, it's also called eXtensible Markup Language. important like HTML (or HyperText Markup Language), XML is also a excessive stage language. It changed into created as a trendy manner to render records in net-predicated operations. nonetheless, XML is case-sensitive, calls for each marker to be unrestricted properly, and preserves whitespace. We will produce XML layouts in Android, and finally, modify them the usage of Java sense. Android XML layouts also are part of a larger pergola of Android traces and elements known as assets. sources are the fresh strains and static content material an operation desires, analogous to robustness, color schemes, layouts, and menu layouts.

Deconstruction of Android XML Layouts:

Each layout teach need to contain one (and best one!) root detail. Relative Layouts, Linear Layouts, and frame Layouts may also all be root rudiments. other layouts might not be. All different XML rudiments will live within this root object. A View is virtually an item from Android erected in View elegance. It represents a thickish place of the display and is responsible for showing data or content material, and event handling. textual content, images, and buttons are all views on Android.

A ViewGroup is a class of View, and is basically an' inconspicuous vessel' that holds a couple of views or ViewGroups together, and defines their layout parcels.

Root views

Those three layout kinds are the root element in an Android XML format

• A Relative format shows its child's content material in positions relative to the parent. (ie lining an detail up to the centering it inside a figure, and pinnacle fringe of a determine, etc.)

•A Linear format aligns its contents right into a unmarried course, whether or not vertical or perpendicular.

•A frame layout is a placeholder on a screen it could display most effective a one view. (for this reason, frame Layouts to be used sparingly; usually, as a placeholder for fragments, which we will cover sooner or later.)

Layout Attributes

Every type of layout has attributes that define the manner its rudiments appear. There are both commonplace attributes that every one layouts partake, in and attributes precise to some of the format types indexed over. Those are attributes that observe to all layouts.

•android a completely unique identity that corresponds to the view.

•androidlayout_width The range of the format. (demanded every view).

•androidlayout_height the height of the format. (demanded every view).

•androidlayout_marginTop based more space at the top of the layout.

•androidlayout_marginBottom more place lies at the lowest of the format.

•androidlayout_marginLeft spare vicinity to the left sect of the format.

•androidlayout_marginRight spare region to the right of the layout.

•androidlayout_weight Specifies how crucial of the spare space within the format have to be allotted to the view.

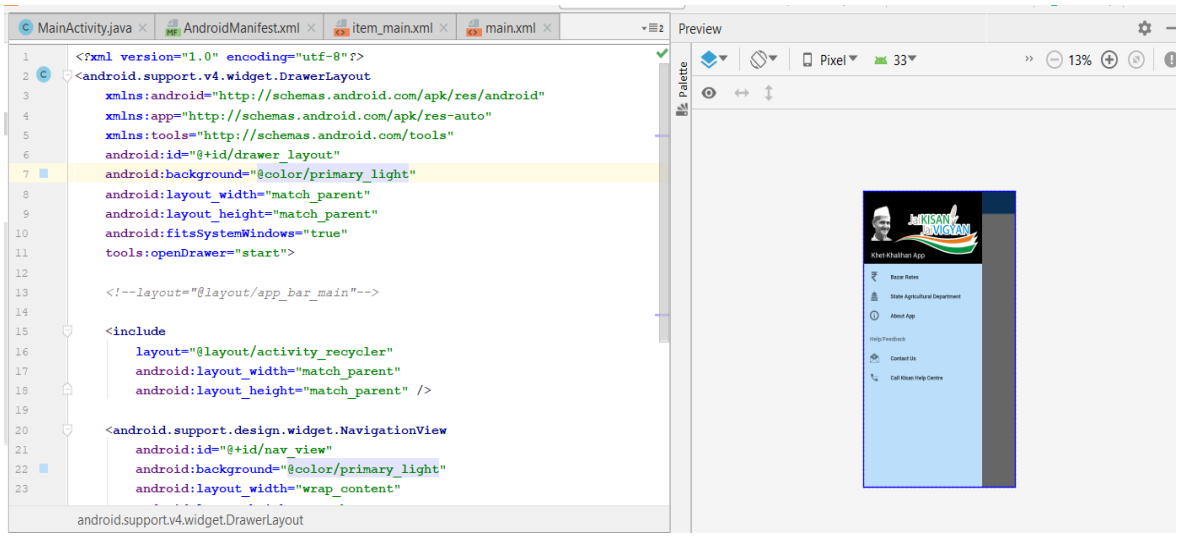
•androidpaddingLeft Padding to the left sect of the view.

•androidpaddingRight Padding to the proper of the view.

• androidpaddingTop Padding at the top of the view.

Navigation Drawer:

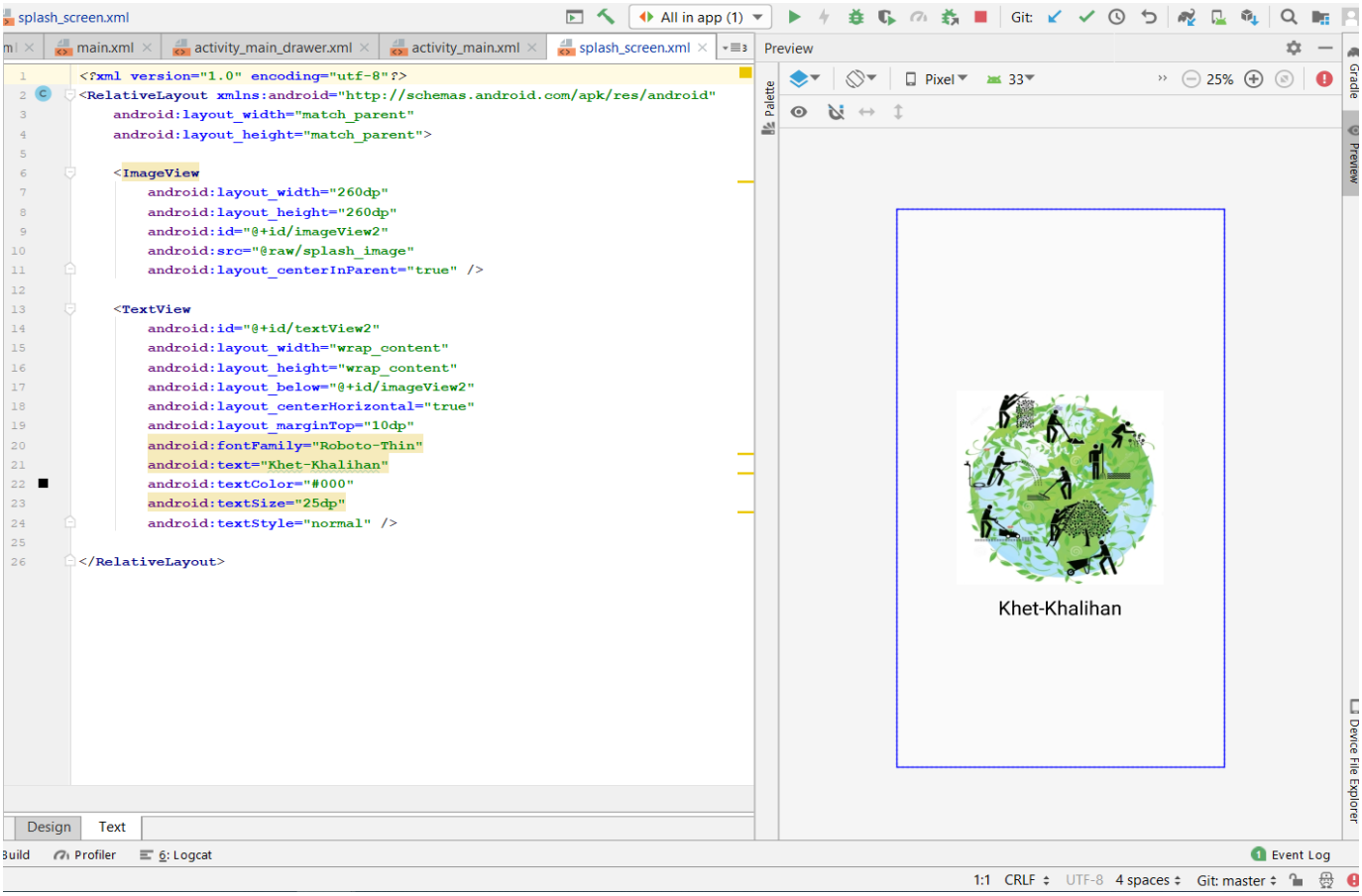
The navigation drawer is not that unusual component supplied via android and the navigation drawer is a User Interface panel that shows applications primary navigation menu. it's also one of the crucial UI rudiments, which gives conduct essential to the customers for example editing stoner profile, altering settings of the application, observe those pictures to get an concept approximately the Navigation drawer, and so on.



The customer can test the navigation drawer whilst the character swipes a cutlet from the left fringe of the exertion. they could in addition discover it from the house hobby through tapping the app icon in the movement bar.

Splash Displays:

Starting in Android 12, the Splash Screen API permits a alternative app take-off vibrance for all apps while rolling on a knack with Android 12 or advanced. example of a touch display display screen parent 1 instance of a sprint screens This revel in brings standard format rudiments to every app launch, however it's moreover customizable so your app can conserve its lone branding. In extension to working the Splash Screen platform API, it can also use the Splash Screen compact libraries, which wraps the Splash Screen API.



Splash screen operating

Whilst a person launches an app on the same time because the app's operation isn't strolling (a chilly release) or the exertion has no longer been created (a warmness release), the subsequent activities do. (The splash show display screen is not any manner proven all through a warm release.)

1. The system suggests the splash display display the use of topics and any robustness which you've defined.

2. whilst the app is ready, the splash display is lengthy beyond and the app is displayed.

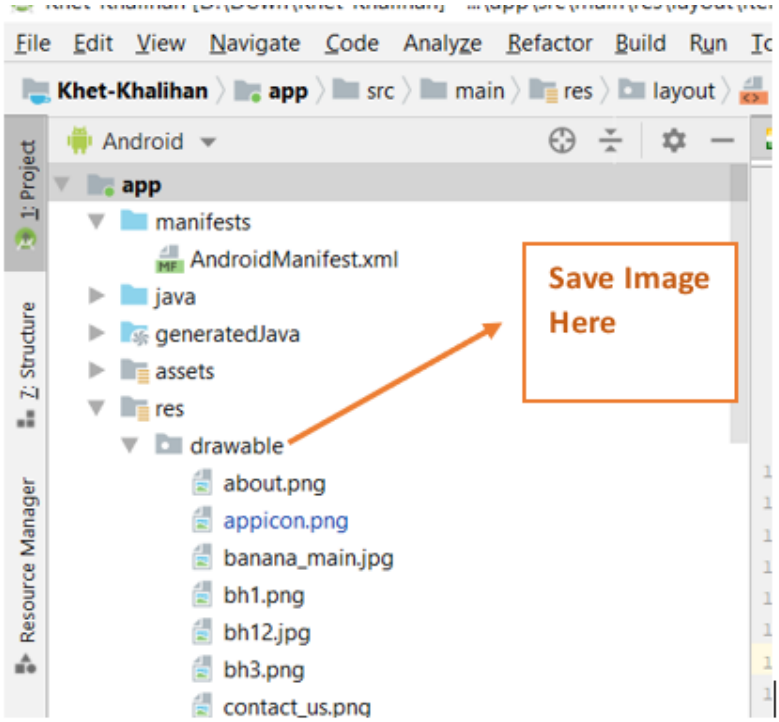
ImageView:

In Android, ImageView belongings is used to expose an image queue within the operation. image educate is simple to apply however tough to comprehend in Android, due to the colorful display display sizes on Android bias. An android is amended with some of the fashionable UI design devices that permit us to make ImageView comes with many configuration alternatives to assist differing types. Scale kind options are used for spanning the bounds of an photograph to the

bounds of the picture view. some of their scale kinds configuration parcels are center, center_crop, fit_xy, fitStart release, and many others.

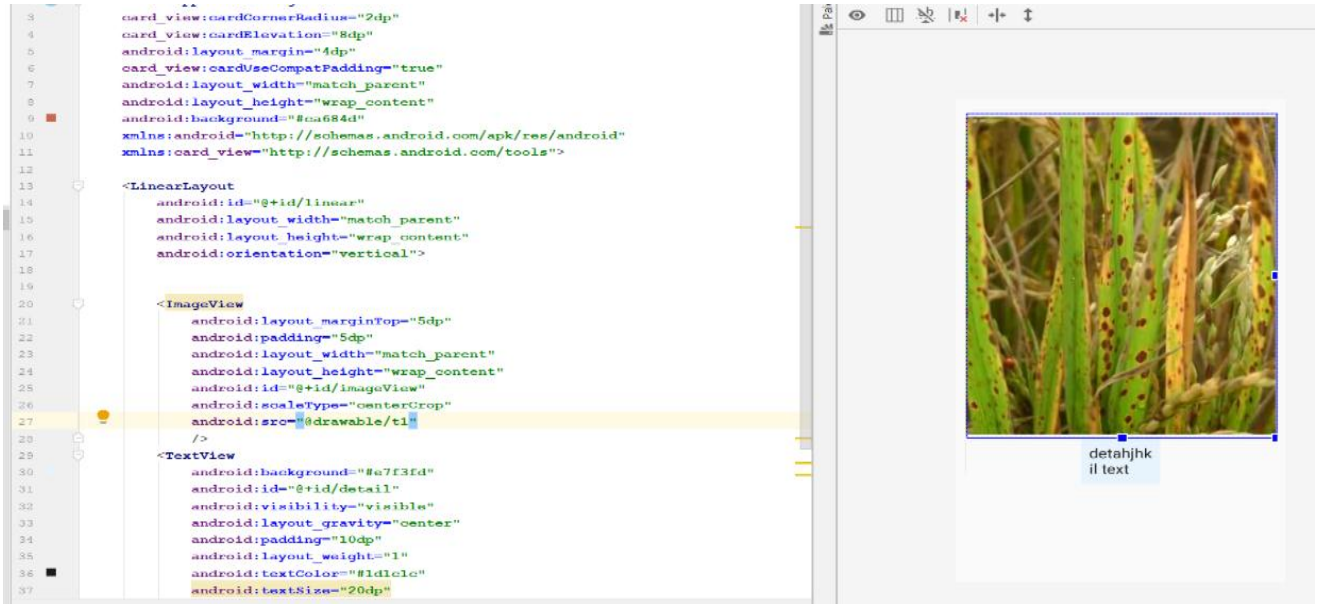
Step 1. produces a modern day layout and names it ImageViewExample. in this step, we produce a new layout within the android plant with the aid of filling in all of the critical info of the app like app call, package name, API performances, etc.

Step 2. In this step first download pictures from the net. Now store those pictures inside the drawable brochure of your format.



Step 3: Now open res -> layout - > activity_main.xml (or) fundamental.xml and add given code:

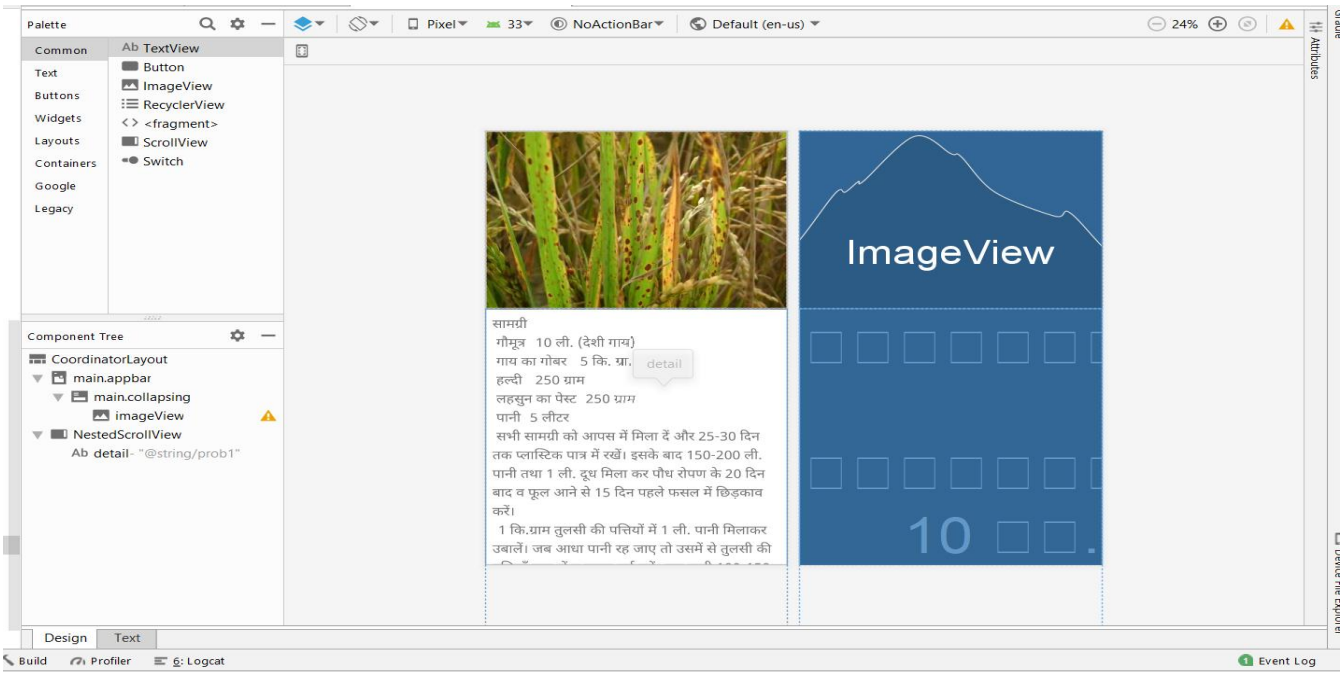
In this step we add the code for showing an photo view at the show display in a relative layout. making surety about you have already stored snap shots name x and y in an drawable folder.



Step 4: Now open app -> java -> package deal deal -> MainActivity.java and upload given code:

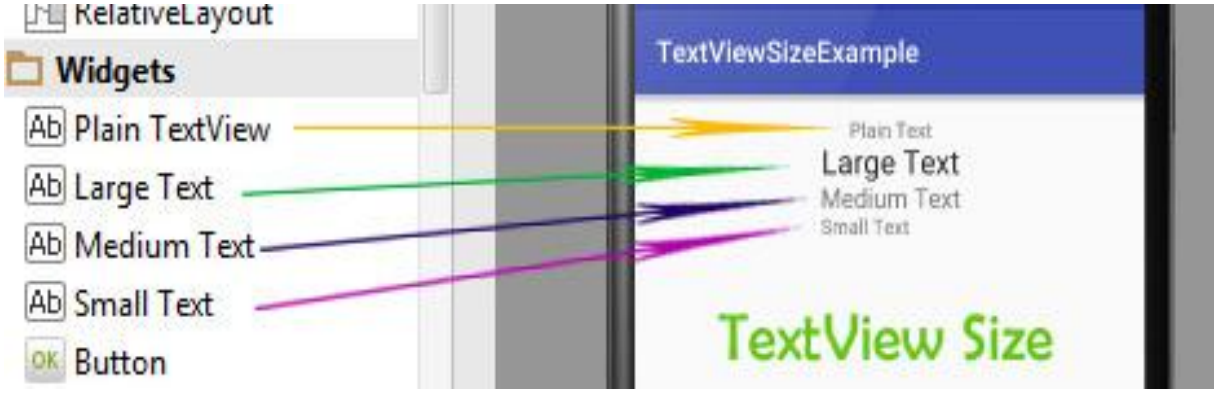
```
protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.content_recycler);

    Integer[] temp1=null;
    Integer[] temp2=null;

    int num= getIntent().getIntExtra( name: "number", defaultValue: 1);
    if(num==1){
        temp1=data1;
    }else if(num==2){
        temp1=data2;
    }else if(num==3){
        temp2=data3;
    }


    mRecyclerView=(RecyclerView)findViewById(R.id.recycler);
    bar=(ProgressBar)findViewById(R.id.progress);
    bar.setVisibility(View.GONE);
    items=new ArrayList<>();

    int l;
    if(num==3)
        l=headings_a.length;
    else
        l=headings.length;

    for(int i=0;i<l;i++)
    {
```

Output: Now start it in Emulator and run the App you'll see the pix displayed on display, click on any photo and call will appear on display.



TextView:

TextView suggests textbook to the character and voluntarily allows them to redraft it programmatically. TextView is a whole guide editor, nonetheless fundamental class is configured to not allow enhancing but we're able to redraft it.



View is the discern beauty of TextView. gift a subclass of view the manual view detail may be used in your app's GUI inner a ViewGroup, or as the content material fabric view of an interest. we are capable of draw on a TextView example through maintaining it inner a layout(XML column) or thru expressing it programmatically(Java beauty).

TextView code in XML:

```
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:textual content="state" />
```

TextView code in JAVA:

```
textView=(TextView)findViewById(R.identity.textView);
textView.setText("District");
```

Attributes of TextView:

identification: identification is an attribute that used to perceive a TextView. the example code in which we set the identification of a textual content view is given below.

1) <textview

2) android:id="@+id/simpleTextView"

3) android:layout_width="wrap_content"

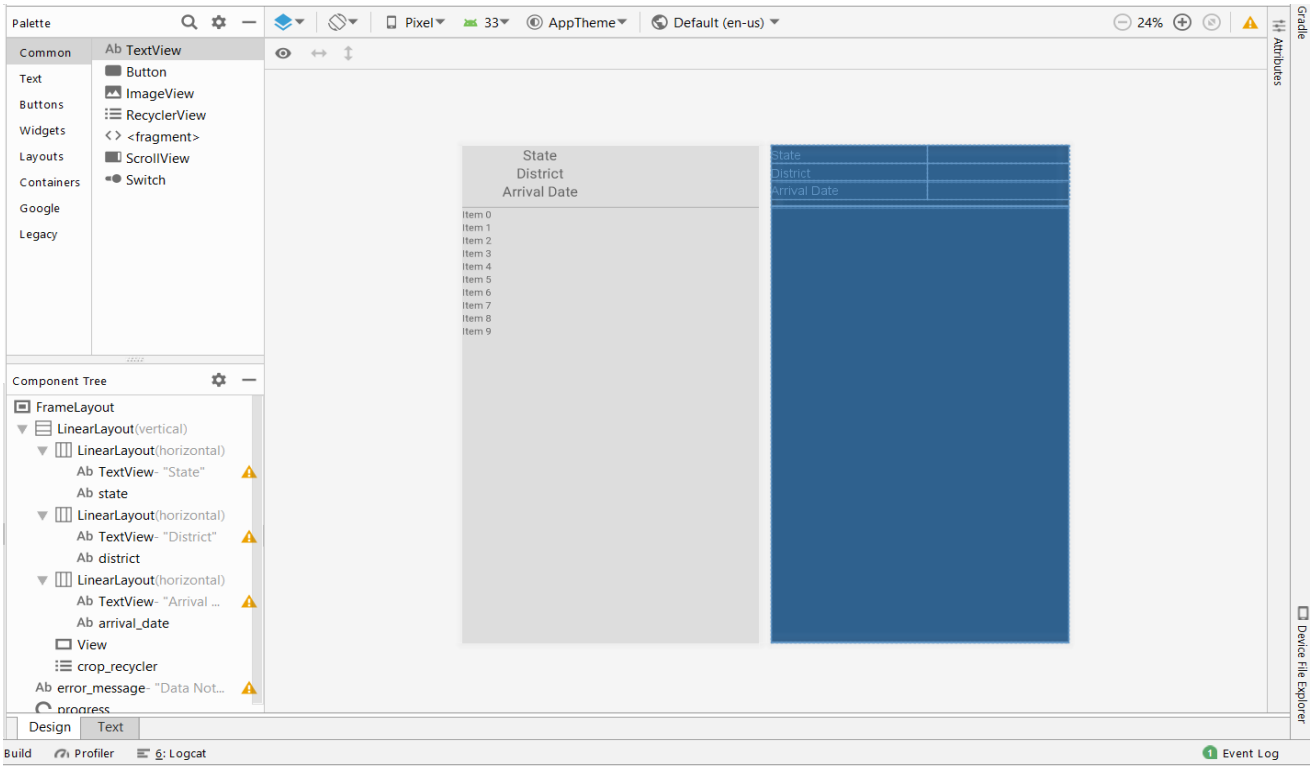
4) android:layout_height="wrap_content"/>

Gravity: it's miles an non-compulsory characteristic, it is used to control the alignment of the text for instance proper, left, middle, backside, top, center_horizontal center_vertical, and so forth. the instance code with clarification blanketed in which we set the center_horizontal gravity for textual content of a TextView is given beneath:

```
<textview
android:id="@+id/simpleTextView"
android:layout_width="fill_parent"
android:layout_height="wrap_content"
android:text="State"
android:textSize="20sp"
android:gravity="center_horizontal"/>
```

textual content: The textual content characteristic is used to set the textual content in a textual content view. it may be set the textual content in xml and additionally within the java class. the instance code with clarification included in which we have set the text "kingdom" in a textual content view is given under:

```
<textview
android:id="@+id/simpleTextView"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_centerInParent="true"
android:textSize="25sp"
android:text="State"/></textview
</textview
</textview
```



Background :

Background attribute is being used to set the history of a text view. it is able to be set a colour or a drawable in text view's background.

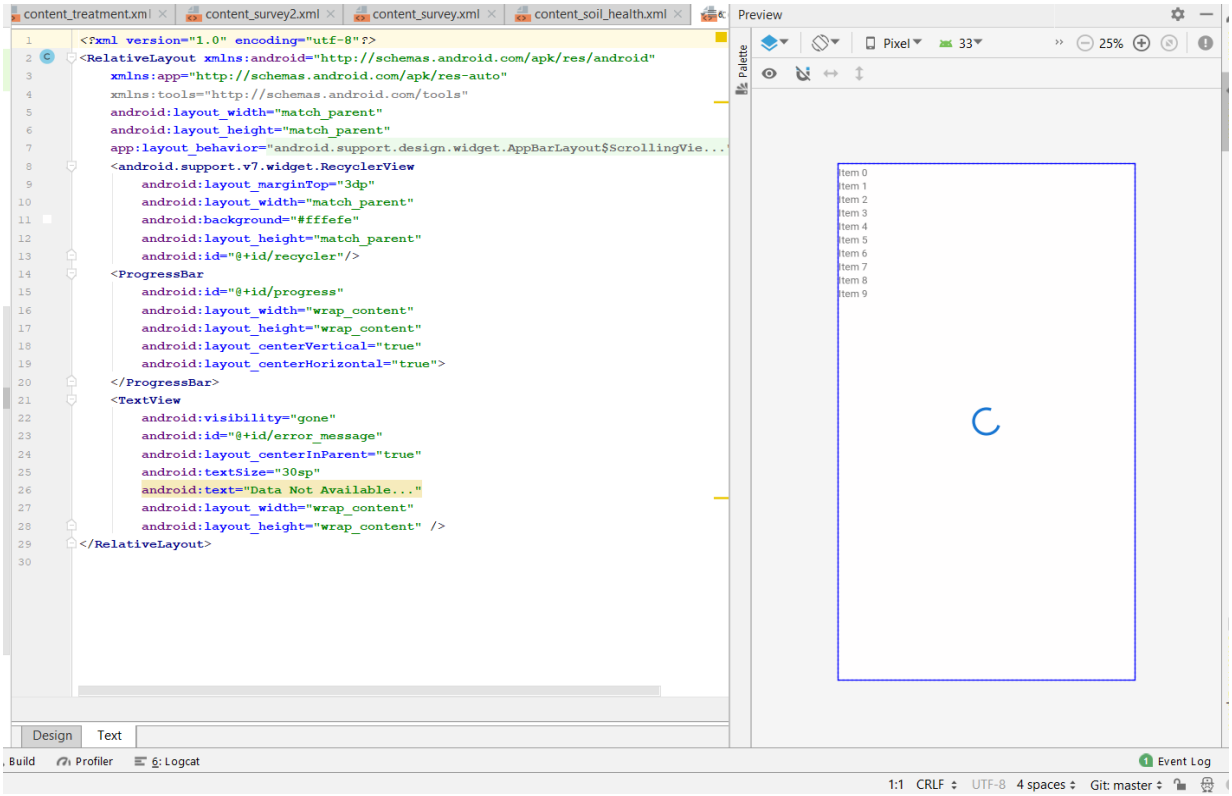
Padding: The padding characteristic is used to set the padding from bottom, top, right or left. In above given instance background code we have set the 10dp.

padding from all the text view issue's.

```
<textview
android:id="@+id/simpleTextView"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="District"
android:layout_centerInParent="true"
android:textSize="40sp"
android:padding="10dp"
android:textColor="#fff"
android:background="#000"/>
```

RecyclerView:

RecyclerView is a complex and bendy interpretation of GridView and ListView. It's used to show a large quantum of records units that maybe scrolled usually effectively by way of manner of retaining a difficult and speedy range of perspectives. RecyclerView became supplied in material format in Android5.0i.e Lollipop (API level 21).



This new widget is a massive step for showing facts in fabric layout because of the truth ListView and GridView are one of the most normally used UI widgets.

In RecyclerView android gives such lots of recent abilities that are not present in present GridView or ListView.

xmlns:app="http://schemas.android.com/apk/res-auto"
xmlns:tools="http://schemas.android.com/tools"
android:layout_width="match_parent"
android:layout_height="match_parent"
app:layout_behavior="@string/appbar_scrolling_view_behavior">
<android.support.v7.widget.recyclerview
android:layout_marginTop="3dp"
android:layout_width="match_parent"
android:background="#fffefe"
android:layout_height="match_parent"
android:id="@+id/recycler"/>
<progressbar
android:id="@+id/progress"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_centerVertical="true"
android:layout_centerHorizontal="true">

<textview
android:visibility="gone"

android:id="@+id/error_message"
android:layout_centerInParent="true"
android:textSize="30sp"

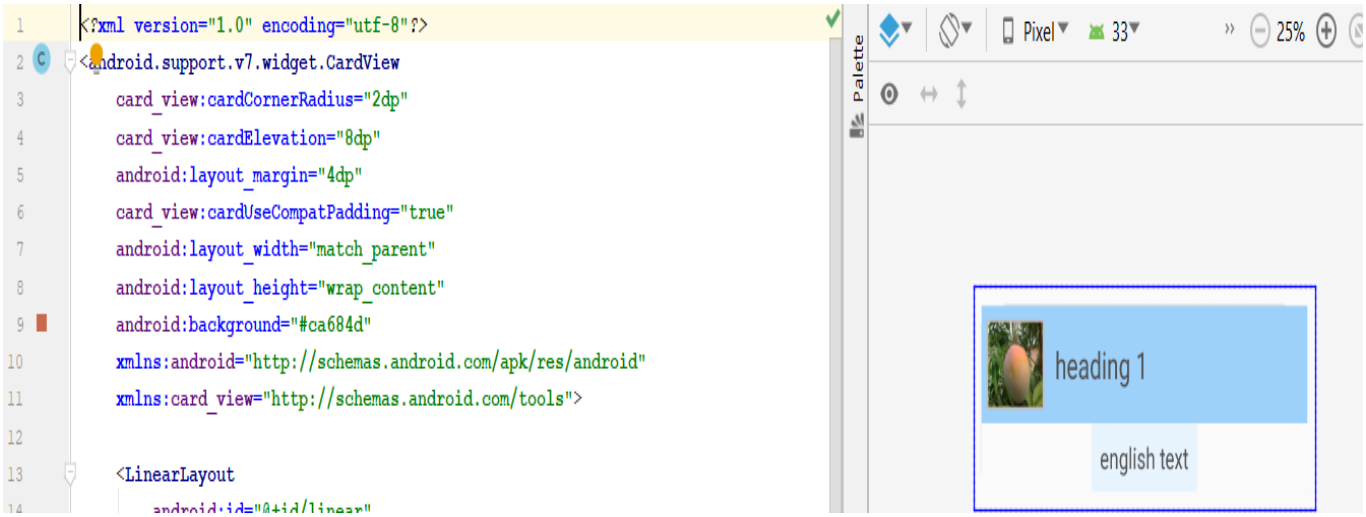
android:text="Data Not Available..."

android:layout_width="wrap_content"

android:layout_height="wrap_content" />

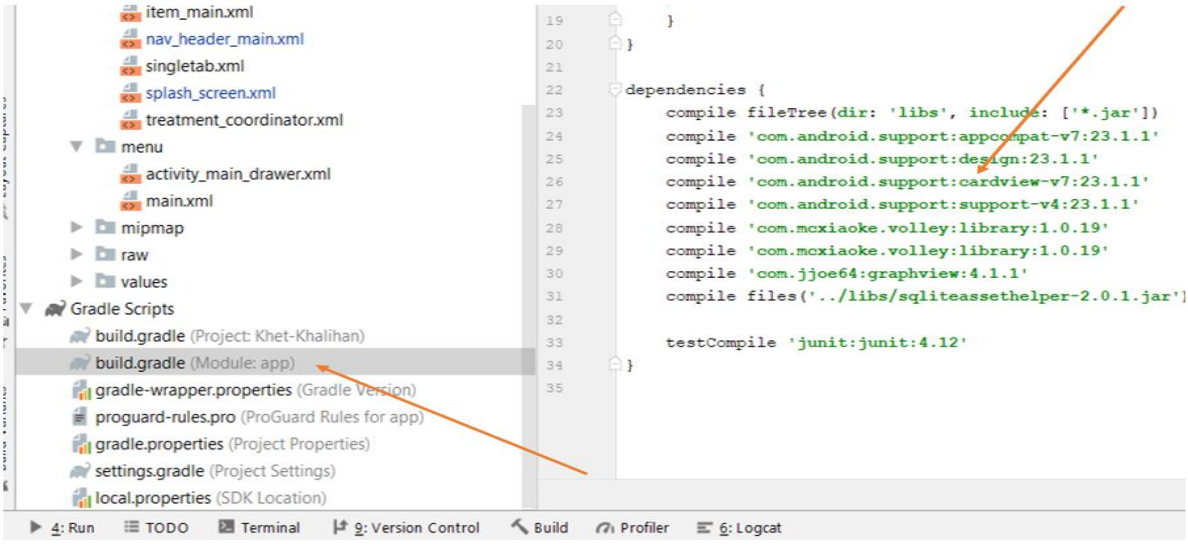
CardView:

CardView is some exceptional primary detail that would constitute the records in a card manner with a drop shadow referred to as elevation and nook compass which appears harmonious throughout the platform. CardView changed into added in fabric format in API function 21(Android5.0i.e Lollipop).



CardView uses elevation belongings on Lollipop for murk and falls returned to a custom emulated shadow perpetration on elderly structures. This new contrivance is a massive step for displaying statistics data internal cards. we can fluently design excellent searching UI while we combined CardView with RecyclerView. A CardView is a ViewGroup that can be brought in our exertion or scrap the usage of a layout XML report.

</textview
</progressbar
</android.support.v7.widget.recyclerview
</textview
</textview
</textview
</textview



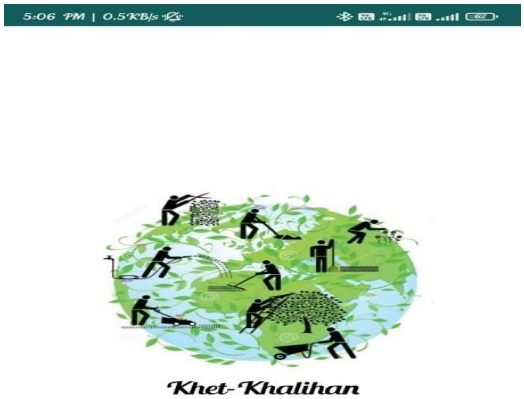
2. APPLICATION FEATURES AND VIEW

Our Application can perform tasks like many other Agriculture based apps. It takes much less time to perform the task that the user requires without any delay or disturbance.

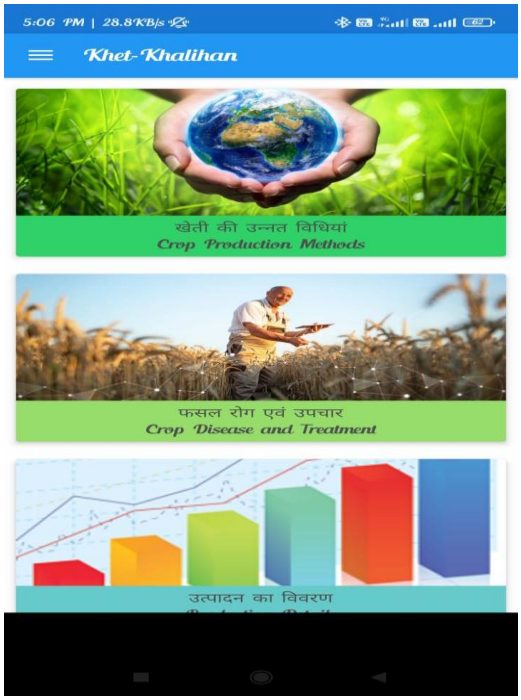
Following are the feature of our Application-

1. Splash Screen
2. Welcome Page
3. Navigation Drawer/ Slide screen
4. Layers and Sublayers
5. View more
6. Call the Kisan Helpline Center, Etc

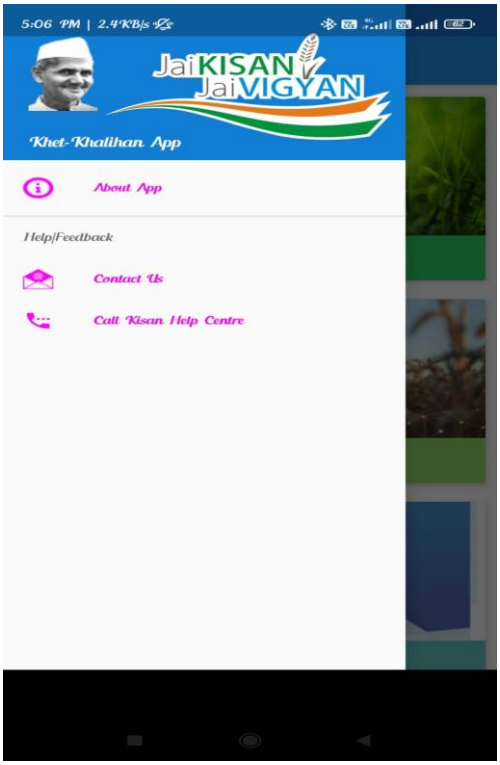
1. Splash Screen:



2.Welcome Page:

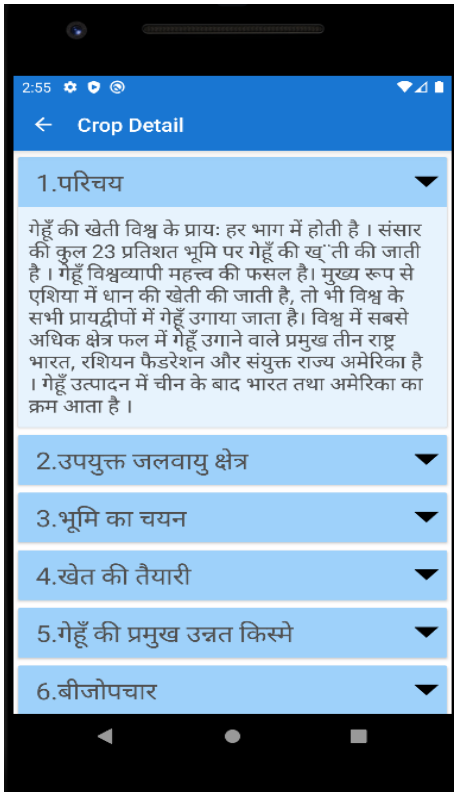


3.Navigation Drawer/Slide Screen:



4.Sublayer 1 Card View:

5.Sublayer 2/Text View:



3. CONCLUSIONS

Numerous growers can perform their day-to-day conditioning using mobile apps. When it comes to the agrarian field, the preface of mobile apps has shown veritably useful benefits, starting from better land operation judgments top quality yield. growers have indeed started using different types of mobile operations to review the health of the yields during the crop cycle. Also, there are some of the rearmost mobile apps, which are being used to make necessary husbandry opinions related to the use of toxins and fungicides.

Eventually, we're ready with our application and ready to put it online for users. This is a simple application where the user can fluently use Khet-Khalihan App. We've successfully achieved our ideal. Our result for some introductory problems in Agriculture and made an Android app that can successfully perform tasks according to druggies ' needs.

Our app is ready to give all desirable knowledge related to husbandry. Users can now Know about different kinds of crop plantation methodologies, Crop Disease and Treatment, Horticulture styles, etc. Selections of different kinds are limited but with time we will modernize and add further features for users.

The Application is developed by **Pavanesh Kumar** who make it possible for users to use this Application conveniently. The user can now easily use the Application without much-needed prior knowledge as all tools are present in front of the user in Hindi and English Language.

We'll have to do more work on this and further updates will have to made in this application, so it can be more bugs-free and convenient for user and our target is to make it more user friendly.

ACKNOWLEDGEMENT (Optional)

I am extremely grateful to Dr. Mamta Tiwari and Ms. Priyanka Arya for their suggestions, support, and motivation. I am thankful to everyone who has helped me directly or indirectly, to make this work a success.

REFERENCES

We Have seen so many Different Applications and got to know about android tools. We have used Google and Youtube sources to make this app and paper possible.

[1] https://www.irjet.net/archives/V9/i5/IRJET-V9I5220.pdf

[2] https://www.youtube.com/watch?v=mXjZQX3UzOs

[3] https://www.youtube.com/watch?v=9nWcPPHBzMk

[4] https://www.google.com/search?q=image+view+in+android&ei=UhDVYuy-Fs-gseMPoZKTyAE&oq=Image+view&gs_lcp=Cgdnd3Mtd2l6EAEYATIFCAAQkQIyBQgAEJECMggIABCABBCxAzIFCAAQgAQyBQgAEJECMgUIABCABDIFCAAQgAQyBQgAEIAEMgUIABCABDIFCAAQgAQ6BwgAEEcQsANKBAhBGABKBAhGGABQrApY2BFg7R9oAXABeACAAfwBiAHYA5IBAzItMpgBAKABAcgBCMABAQ&sclient=gws-wiz

[5] https://www.youtube.com/watch?v=6-891CSz6v0

[6] https://abhiandroid.com/programming/

[7] https://www.google.com/search?q=splash+screen+in+android+studio&ei=1wvVYpWkE6GLmgenyYmoDQ&oq=Splash+Screen+in+and&gs_lcp=Cgdnd3Mtd2l6EAMYATIFCAAQgAQyBQgAEIAEMgUIABCABDIFCAAQgAQyBQgAEIAEMgUIABCABDIFCAAQgAQyBQgAEIAEMgUIABCABDIFCAAQgAQ6BwgAEEcQsAM6BQgAEIYDOgcIABCxAxBDOgUIABCRAjoGCAAQHhAHOgoIABCRAhBGEP8BOgQIABBDSgQIQRgASgQIRhgAUPQLWMwtYM4_aAFwAXgAgAGGBogB8x6SAQsyLTcuMi4wLjEuMZgBAKABAcgBCMABAQ&sclient=gws-wiz

[8] https://www.youtube.com/watch?v=q7NF-2gtfEU

[9] https://developer.android.com/codelabs/build-your-first-android-app#0

[10] https://www.youtube.com/watch?v=BqLulpjZZa4

[11] https://www.learnhowtoprogram.com/android/introduction-to-android/creating-a-basic-layout

[12] https://developer.android.com/studio/intro

[13] https://krishijagran.com/agripedia/top-10-agricultural-mobile-apps-for-farmers-in-2021/

[14] Smartphone Applications Targeting Precision Agriculture Practices—A Systematic Review by Jorge Mendes, Tatiana M. Pinho, Filipe Neves dos Santos, Joaquim J. Sousa, Emanuel Peres, José Boaventura-Cunha, Mário Cunha and Raul Morais. https://www.mdpi.com/2073-4395/10/6/855/htm

[15] SURVEY OF ANDROID APPS FOR AGRICULTURE SECTOR Hetal Patel Assistant Professor, Smt. Chandaben Mohanbhai Patel Institute of Computer Applications, CHARUSAT, Changa and Dr. Dharmendra Associate Professor, Smt. Chandaben Mohanbhai Patel Institute of Computer Applications, CHARUSAT, Changa. https://www.researchgate.net/publication/301277058_Survey_of_Android_Apps_for_Agriculture_Sector

[16] https://krishijagran.com/agripedia/top-10-agricultural-mobile-apps-for-farmers-in-2021/

[17] https://vikaspedia.in/agriculture/ict-applications-in-agriculture/kisan-call-center-app#:~:text=Kisan%20Suvidha%20is%20an%20omnibus,available%20in%20multiple%20Indian%20languages.

[18] HOW MOBILE APPS ARE HELPING AGRICULTURE IN ACHIEVING SUSTAINABLE DEVELOPMENT? https://www.sourcetrace.com/blog/mobile-apps-for-agriculture/

[19] □□□□□□ □□□□ □□□□□□□□ □□□□□ Indian Council of Agricultural Research (Ministry of Agriculture and Farmers Welfare) https://icar.org.in/mobileapp

BIOGRAPHIES

Pavanesh Kumar completed his B.Sc in Physical science and computer science from the University of Delhi in 2019. Since 2020 He Is pursuing his Master of Computer Application (MCA) degree from Chhatrapati Shahu Ji Maharaj Univerity Kanpur, Uttar Pradesh, India.

Dr. Mamta Tiwari completed her M.tech in Computer science in 2006 and She completed her Ph.D. in 2019. She is presently working as an Asst. Prof. since 2004 with Chhatrapati Shahu Ji Maharaj Univerity, situated in Kanpur, Uttar Pradesh, India.