# NEWS APPLICATION

## MINI PROJECT REPORT

Submitted to

**Visvesvaraya Technological University**
**BELAGAVI - 590018**

by

**POORNIMA** **4SU20CS065**

Under the guidance of

**Mr. Dhawal Jain**
Assistant Professor

**in partial fulfillment of the requirements for the award of the degree of**

**Bachelor of Engineering**


**Department of Computer Science and Engineering**

**SDM INSTITUTE OF TECHNOLOGY**

**UJIRE – 574240**

**2022-2023**

# Abstract

As world's technology is rapidly growing, we has fast connection and network to instantly connect to other person. Day to day use in mobile, tablets and laptop is increasing, most of the people already have this facilities. In this fast and information oriented world we need to stay updated with every incidents and news too. This News app is android mobile application where user have access to latest news from 120+ newspapers from 50+ countries. The main focus of this application is to connect news articles from all around the world and deliver it to user as fast as possible in best visualize way.

# Table of Contents

# List of Figures

# Chapter 1

# Introduction

Android is an open source and Linux-based Operating System for mobile devices such as smartphones and tablet computers. Android was developed by the Open Handset Alliance, led by Google, and other companies. Android offers a unified approach to application development for mobile devices which means developers need only develop for Android, and their applications should be able to run on different devices powered by Android.

Native news apps are expensive and difficult to maintain. Native Publishers like BBC News or NY Times use their own writers to manage articles and manage it. Many native newspapers are divided because of this which causes a lack of resources from one side. Android structure provides great capability with frameworks, libraries and APIs, with the help of it we can provide better user experience and combine these sources at one place while maintaining integrity of its owner.

Android provides simple application structure and requires Java and Mark-up languages knowledge to work with. Such as, an discrete movement delivers a solitary screen for a user interface and a service whole completes work in the contextual [1]. We can work on different modules separately and can combine at the end, we can also add future modules easily afterwards.

# Overview of Android

## 2.1 Android Architecture

Android is architected in the form of a software stack comprising applications, an operating system, run-time environment, middleware, services, and libraries. The architecture is represented visually as outlined in fig 2.1. Each layer of the stack, and the corresponding elements within each layer, are tightly integrated and carefully tuned to provide the optimal application development and execution environment for mobile devices.

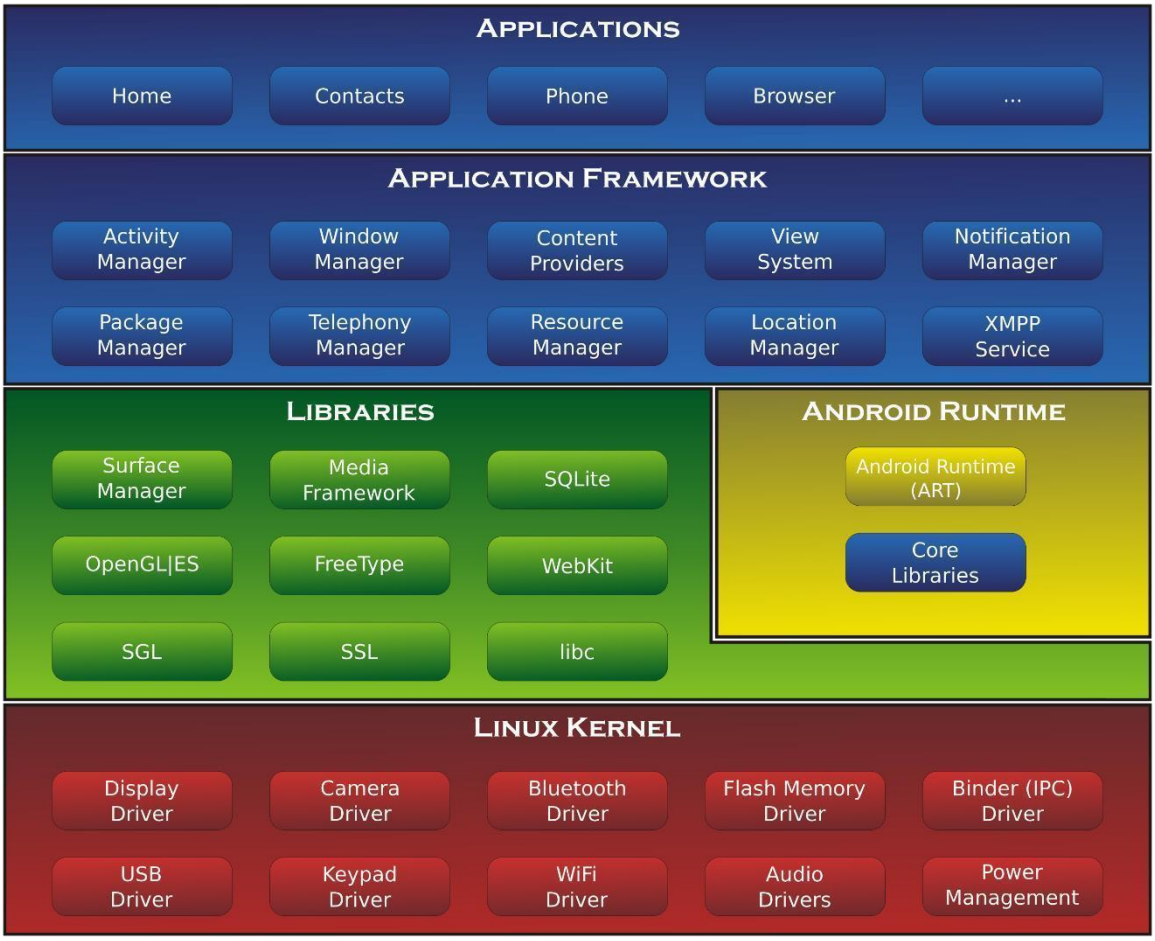


**Figure 2.1 Android Architecture (Source : https://commons.wikimedia.org)**

### 2.1.1 Linux kernel

At the bottom of the layers is Linux - Linux 3.6 with approximately 115 patches. This provides a level of abstraction between the device hardware, and it contains all the essential hardware drivers like camera, keypad, display etc. Also, the kernel handles all the things that Linux is good at such as networking and a vast array of device drivers, which take the pain out of interfacing to peripheral hardware.

### 2.1.2 Libraries

On top of Linux kernel there is a set of libraries including open-source Web browser engine WebKit, well known library libc, SQLite database which is a useful repository for storage and sharing of application data, libraries to play and record audio and video, SSL libraries responsible for Internet security etc.

### 2.1.3 Android Libraries

This category encompasses those Java-based libraries that are specific to Android development. Examples of libraries in this category include the application framework libraries in addition to those that facilitate user interface building, graphics drawing and database access. A summary of some key core Android libraries available to the Android developer is as follows −

- antikidnap − Provides access to the application model and is the cornerstone of all Android applications.
- android.content − Facilitates content access, publishing and messaging between applications and application components.
- android.view − The fundamental building blocks of application user interfaces.
- android.widget − A rich collection of pre-built user interface components such as buttons, labels, list views, layout managers, radio buttons etc.
- android.webkit − A set of classes intended to allow web-browsing capabilities to be built into applications.

Having covered the Java-based core libraries in the Android runtime, it is now time to turn our attention to the C/C++ based libraries contained in this layer of the Android software stack.

### 2.1.4 Android Runtime

This is the third section of the architecture and available on the second layer from the bottom. This section provides a key component called Dalvik Virtual Machine which is a kind of Java Virtual Machine specially designed and optimized for Android.

The Dalvik VM makes use of Linux core features like memory management and multithreading, which is intrinsic in the Java language. The Dalvik VM enables every Android application to run in its own process, with its own instance of the Dalvik virtual machine.

The Android runtime also provides a set of core libraries which enable Android application developers to write Android applications using standard Java programming language.

### 2.1.5 Application Framework

The Application Framework layer provides many higher-level services to applications in the form of Java classes. Application developers are allowed to make use of these services in their applications. The Android framework includes the following key services

- Activity Manager − Controls all aspects of the application lifecycle and activity stack.
- Content Providers − Allows applications to publish and share data with other applications.
- Resource Manager − Provides access to non-code embedded resources such as strings, colour settings and user interface layouts.
- Notifications Manager − Allows applications to display alerts and notifications to the user.
- View System − An extensible set of views used to create application user interfaces.

### 2.1.6 Applications

You will find all the Android application at the top layer. You will write your application to be installed on this layer only. Examples of such applications are Contacts Books, Browser, Games etc.

## 2.2 Overview of Android Studio

Android Studio offers even more features that enhance your productivity when building Android apps, such as:

- A flexible Gradle-based build system
- A fast and feature-rich emulator
- A unified environment where you can develop for all Android devices
- Apply Changes to push code and resource changes to your running app without restarting your app
- Code templates and GitHub integration to help you build common app features and import sample code

- Extensive testing tools and frameworks
- Lint tools to catch performance, usability, version compatibility, and other problems
- C++ and NDK support

Built-in support for Google Cloud Platform, making it easy to integrate Google Cloud Messaging and App Engine

## 2.3 Installation of Android Studio

1. Download JDK from

   https://www.oracle.com/in/java/technologies/javasedownloads.html

2. For Installation and downloading the Android Studio 4.1.3 from https://developer.android.com/studio/index.html
3. After SDK installation, install the Android OS on Android Virtual Device (AVD) (Preferably Nougat 7.1.1) API level 25.

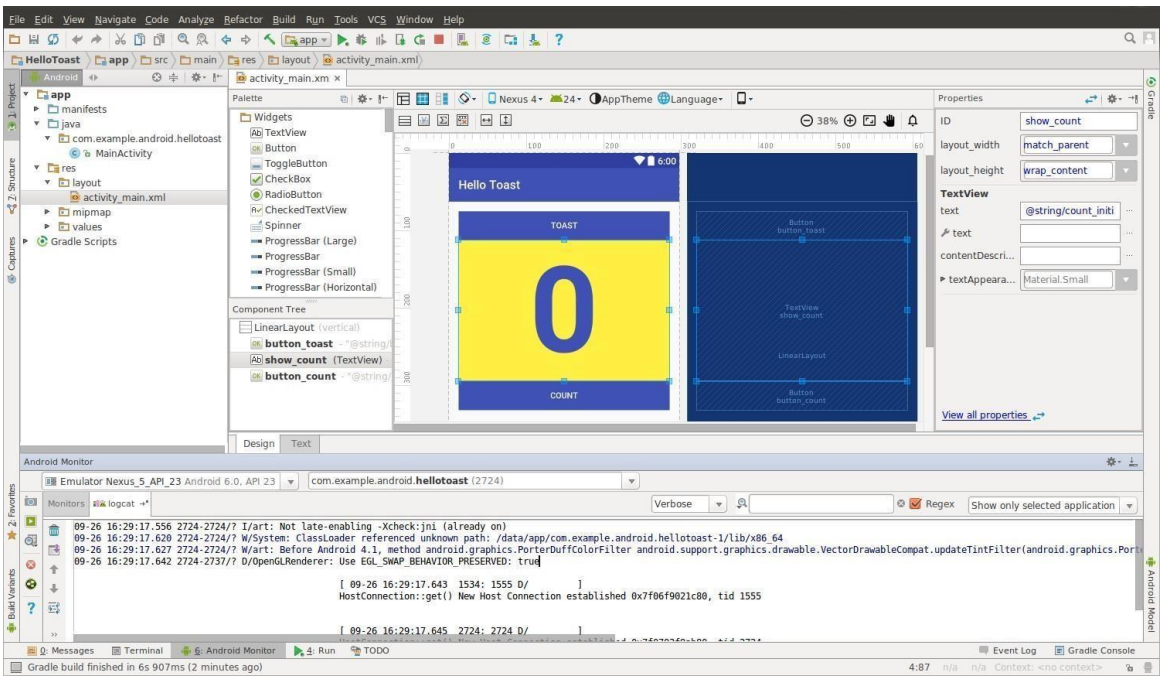


**Figure 2.2 Android Studio IDE**

**Chapter 3**

# Problem Formulation

## 3.1 Motivation

For the development of an android app material design is very useful and provides a smooth experience with custom layout, views and animations. For this news app users should be able to select from different categories, countries and newspapers. Short News as a list view with header, little description and image before showing a full article can be helpful to users to determine what type of news they are looking for. View Holder can be used for this list view for better and faster experience. Library like Picasso can be used for better image handling. This User interface will be connected to the API, because of this structure the integrity of the writer of that article will not be in harm.

## 3.2 Problem Statement

Different type of newspaper will be available from all around the world with this user will be able to get news from all around the world.

## 3.3 Objectives

The main objectives of the proposed design are as follows:

1. Implementation of modules for Display of news from various news using retrofit API.
2. Implementation of Display news on the website
3. Implementation of user modules to help the users to fetch and read news in the form of different categories

# Chapter 4

# System Requirements

Requirements specification is a specification of software requirements and hardware requirements required to do the project. Requirements analysis encompasses those tasks that go into determining the needs or conditions to meet for a new or altered product or project, taking account of the possibly conflicting requirements of the various stakeholders, analyzing, documenting, validating, and managing software or system requirements.

## 4.1 Hardware Requirements

- Processor : Intel i5/i7 core
- Hard Disk : 100 GB
- RAM : 8GB
- Mobile : Smartphone with Android OS 8 and above

## 4.2 Software Requirements

- Operating system : Windows/Linux
- IDE : Android Studio with SDK
- Language : JAVA, XML
- Packages : Java JDK7 and JRE 6 or above

# Chapter 5

# System Design and Implementation

## 5.1 System Design

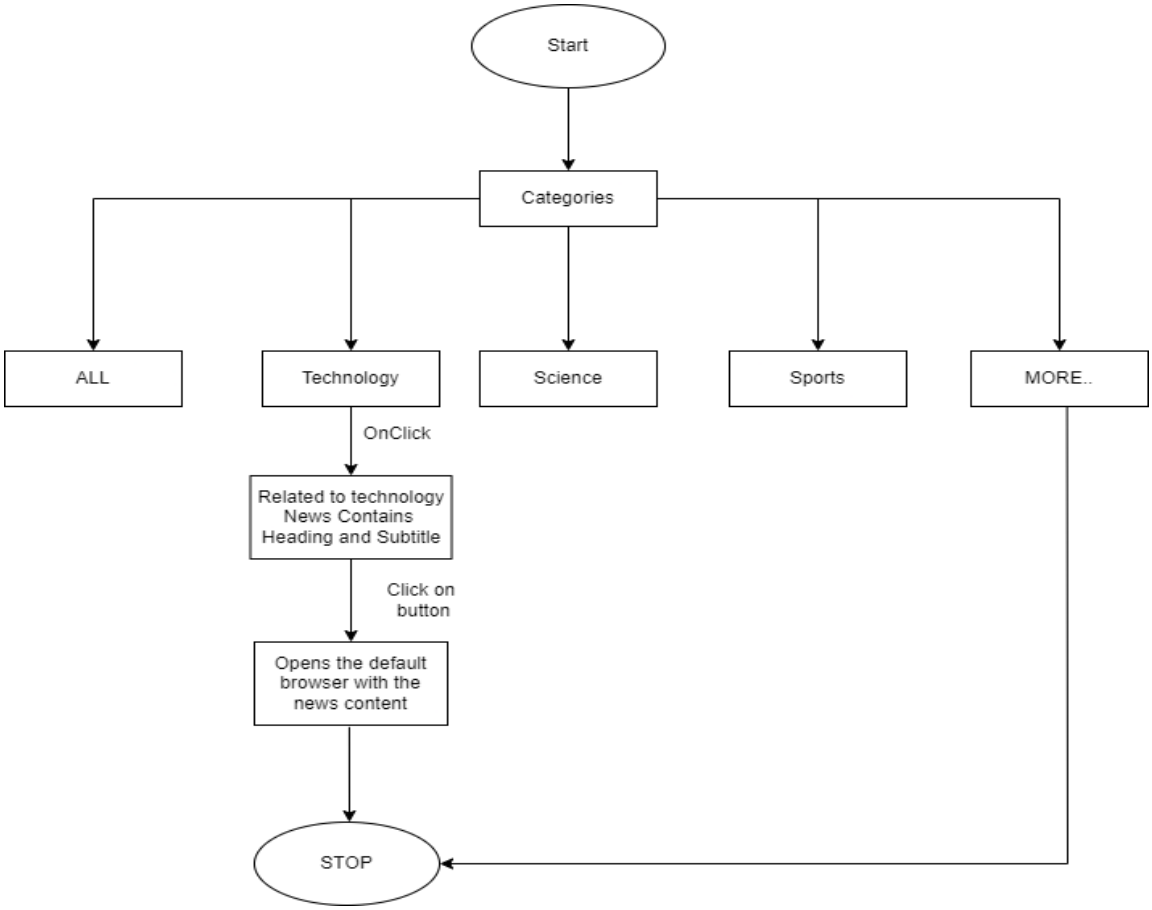


**Figure 5.1 Block Diagram**

The above block diagram shows the flow of the application. On starting the application different categories are available clicking on the desired category the related news is opened in the default browser with the news content. For reading the whole news user needs to click on read more option to read the entire news. User can press back button and can choose the other category of news and find the related news. This helps the user to find the news regarding different fields in a single platform so that user need not search for the different categories of news in different browser this saves the time wasted in searching the required news

## 5.2 Implementation

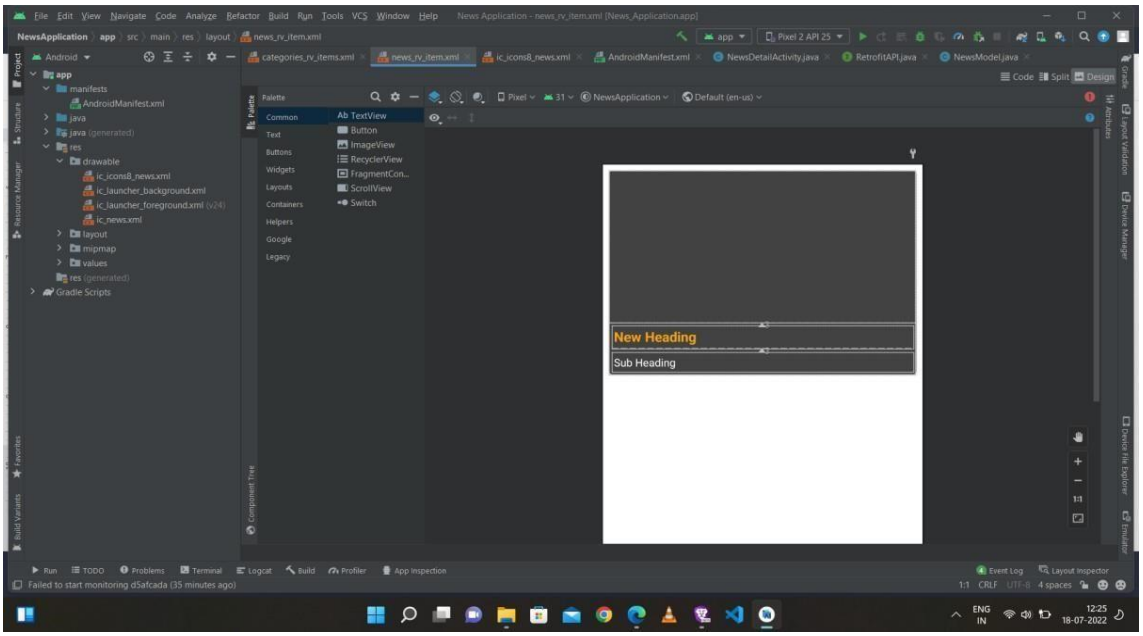


**Figure 5.3 : Layout design News_recyclerview_adapter**

Figure 5.3 shows the layout design of the news adapter where title or headings and subtitles are specified of the specific category

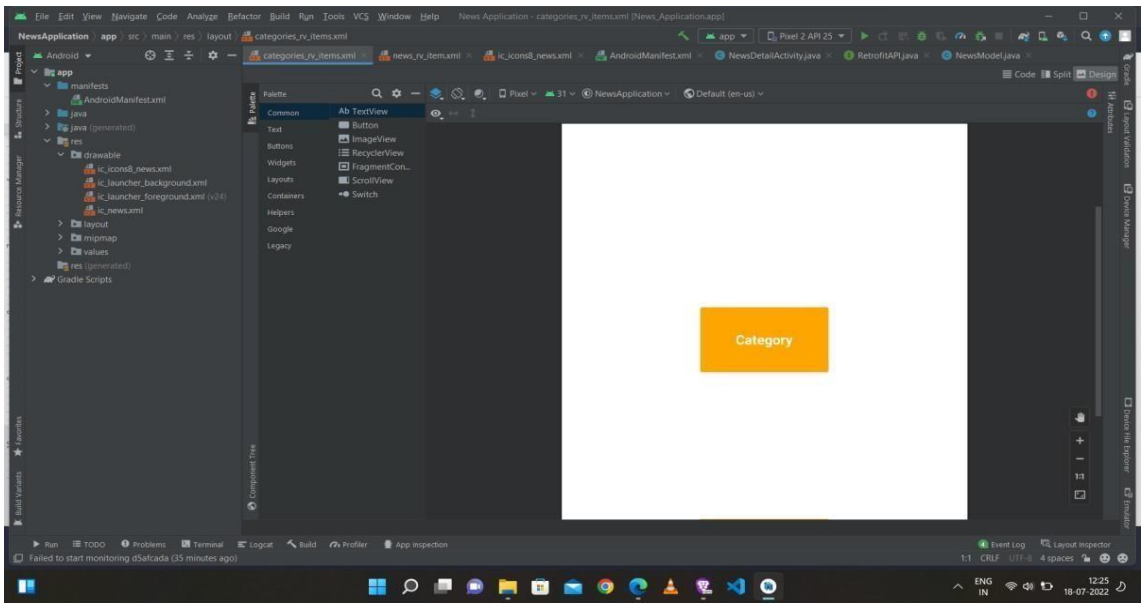


**Figure 5.4: Layout design categories_rv_items**

Figure 5.4 shows the layout design for the different categories created specifying different fields in which user can browse.

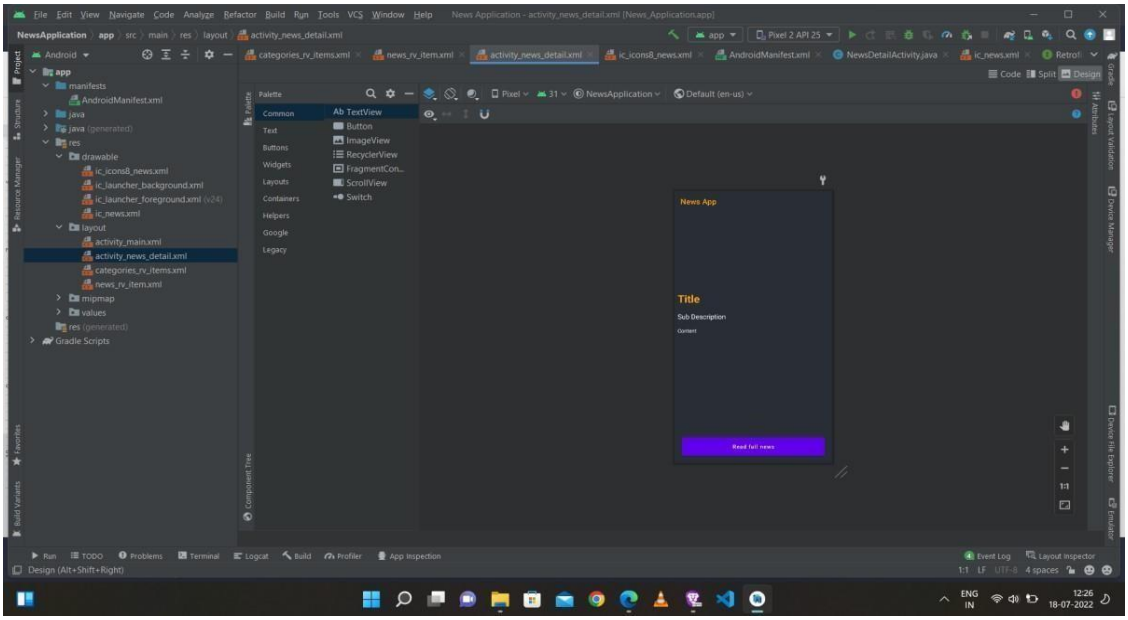


**Figure 5.5: Layout design activity_news_details**

Figure 5.5 shows the news details that will be displayed on clicking the required category by the user and user can click on read more to read the detailed form of the required news

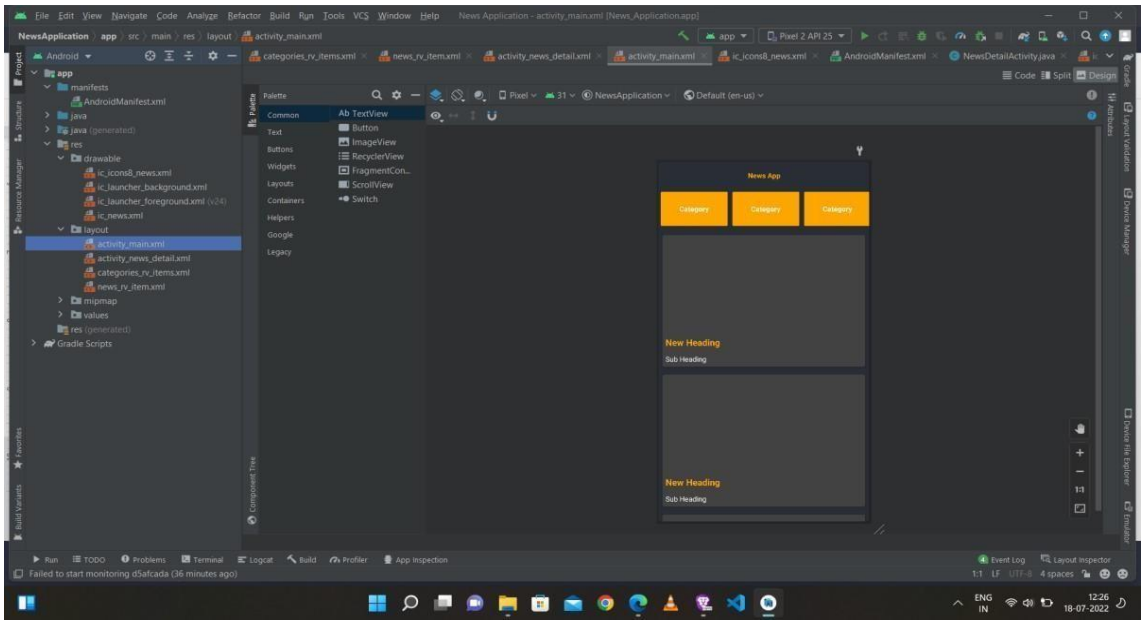


**Figure 5.6: Layout design activity_main**

The above figure shows the main activity page of the application where different categories of news are available.

# Results and Discussions

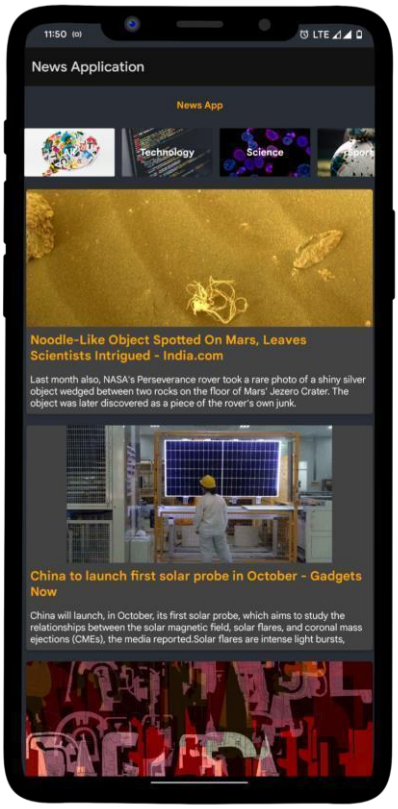


**Figure 6.1: Front Page**

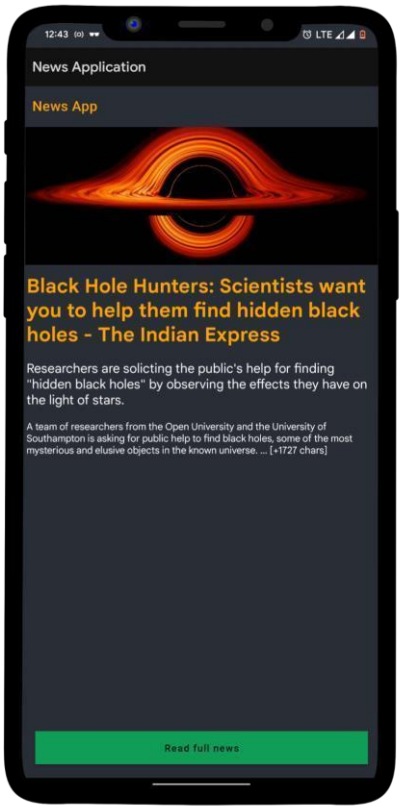


**Figure 6.2: News Page**

Figure 6.1 and figure 6.2 shows the front page of the application and titles of the news respectively. The front page of the news application involves the different categories of news which user can pick. User can click on the desired news category and read the news. The news page contains the titles and the subtitles of the selected category

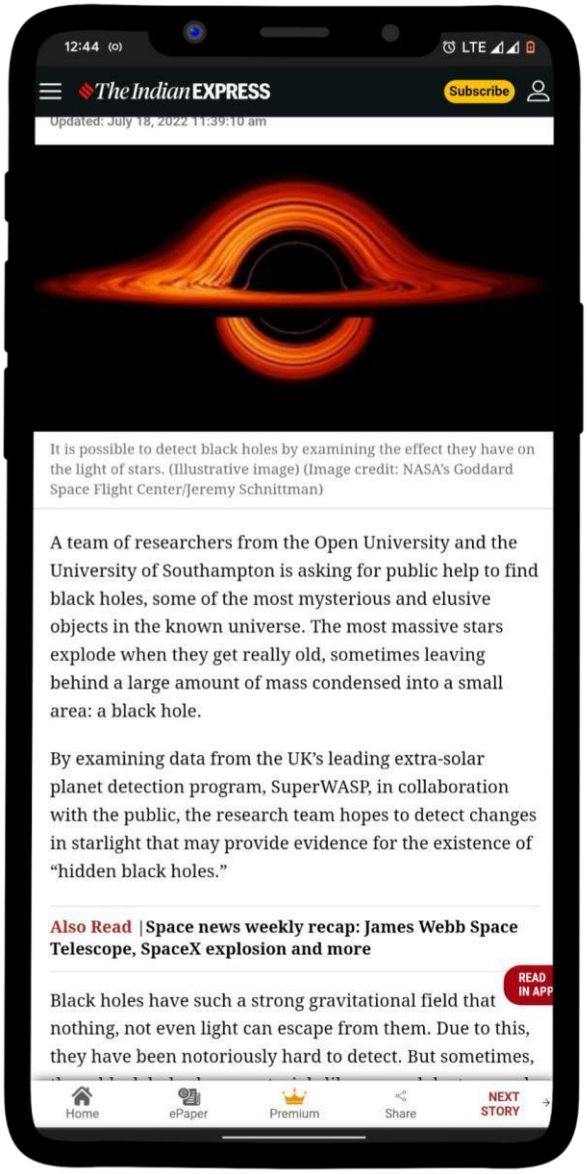


**Figure 6.3:News in browser**

Figure 6.3 shows that on clicking read more news opens in the default browser user can find the information regarding the news, user can get the detailed information by clicking on read more option.

.

# Conclusions and Future Scope

## 7.1 Conclusion

In this application we will be using this API for our better experience. Even after using this API it is possible that we can't reach the maximum output of resources that we can use. By this we can utilize the News application for any android devices.

## 7.2 Future Scope

Location features with automation can be implemented which means as users move from one city to other local news will change as per it. Offline Reading can be improved in a more efficient way on full articles. Data quality check needed. If API can't reach to certain article source it gives null value which can cause problem in JSON parsing

# Bibliography


[1]. Google Developer Training, "Android Developer Fundamentals Course – Concept Reference", Google Developer Training Team, 2017.

[2]. Erik Hellman, "Android Programming – Pushing the Limits", 1st Edition, Wiley India Pvt Ltd, 2014. ISBN-13: 978-8126547197.

[3]. Dawn Griffiths and David Griffiths, "Head first Android Development", 1st Edition, O'Reilly SPD Publishers, 2015. ISBN-13: 978-9352131341.

[4]. Bill Phillips, Chris Stewart and Kristin Marsicano, "Android Programming: The Big Nerd Ranch Guide", 3rd Edition, Big Nerd Ranch Guides, 2017. ISBN-13: 9780134706054.

[5]. https://developer.android.com/studio

[6]. https://play.google.com/