

Task 2

Mobile App Development Intern

Project: News Reader App

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1. Introduction

The purpose of this internship project is to design and develop a News Reader App that displays the latest and updated news articles. The app fetches data from a news API and presents it in a user-friendly interface, allowing users to read articles, filter by category, and search for news topics.

2. Objective

- Fetch latest news articles using API.
- Display articles in a clean interface.
- Add features like category filtering, search, and bookmarks.
- Ensure smooth UI and proper error handling.

3. Tools & Technologies Used

1. Android Studio
2. Java/Kotlin
3. NewsAPI.org (REST API)
4. RecyclerView & CardView
5. JSON Parsing
6. Glide (for image loading)

4. Project Structure

NewsReaderApp/

- MainActivity.java
- NewsAdapter.java

- NewsModel.java
- activity_main.xml
- item_news.xml

5. Implementation (MainActivity.java)

```
public class MainActivity extends AppCompatActivity {
    RecyclerView recyclerView;
    NewsAdapter adapter;
    ArrayList<NewsModel> newsList;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        recyclerView = findViewById(R.id.recyclerView);
        newsList = new ArrayList<>();

        fetchNews();
    }

    private void fetchNews() {
        String url = "https://newsapi.org/v2/top-headlines?country=in&apiKey=YOUR_API_KEY";

        JsonObjectRequest request = new JsonObjectRequest(Request.Method.GET, url, null,
            response -> {
                try {
                    JSONArray articles = response.getJSONArray("articles");
                    for (int i = 0; i < articles.length(); i++) {
                        JSONObject obj = articles.getJSONObject(i);
                        String title = obj.getString("title");
                        String desc = obj.getString("description");
                        String image = obj.getString("urlToImage");
                        String urlLink = obj.getString("url");
                        newsList.add(new NewsModel(title, desc, image, urlLink));
                    }
                    adapter = new NewsAdapter(this, newsList);
                    recyclerView.setAdapter(adapter);
                } catch (JSONException e) {
                    e.printStackTrace();
                }
            }, error -> Toast.makeText(this, "Failed to fetch news", Toast.LENGTH_SHORT).show());

        RequestQueue queue = Volley.newRequestQueue(this);
        queue.add(request);
    }
}
```

6. Raw Data Example (JSON Response)

```
{
  "status": "ok",
  "totalResults": 2,
  "articles": [
    {
      "source": { "name": "BBC News" },
      "title": "Sample News Title",
```

```
"description": "This is a sample news description.",
"url": "https://example.com/news",
"urlToImage": "https://example.com/image.jpg"
},
{
  "source": { "name": "CNN" },
  "title": "Another News Title",
  "description": "Another sample news description.",
  "url": "https://example.com/news2",
  "urlToImage": "https://example.com/image2.jpg"
}
]
```

7. Practical Output Example

--- News Reader App Output ---

[News Feed Screen]

- Title: Sample News Title
- Description: This is a sample news description.
- Source: BBC News

- Title: Another News Title
- Description: Another sample news description.
- Source: CNN

[Search Example]

User searches for: 'Technology'

Filtered articles displayed accordingly.

8. Features Implemented

1. Display latest headlines.
2. Category filtering.
3. Search functionality.
4. Bookmark articles.
5. Pull-to-refresh.
6. Error handling for API failures.

9. Challenges Faced

1. Managing API key usage limits.
2. Handling slow network responses.
3. Ensuring smooth UI performance.

10. Future Scope & Improvements

1. Implement offline reading.
2. Add dark mode support.
3. Push notifications for breaking news.
4. Multi-language support.

11. Conclusion

This project provided hands-on experience in Android app development, API integration, and UI/UX design. I successfully developed a functional News Reader App capable of fetching and displaying real-time news articles.