

## LEVERAGING REACT NATIVE TO BUILDING HIGH-PERFORMING MOBILE APPLICATION

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### ABSTRACT

Victory is the whole of little endeavors, rehashed day in and day out. One of the foremost pined for and respectable employments in India are of the Indian Guard Administrations. The career in Indian Outfitted Powers is highly honored by everybody within the nation. Millions of candidates show up for Resistance Exams each year to fulfill their dream of being portion of this prestigious benefit either as an officer or as a soldier. Each year distinctive exams are conducted to assist candidates accomplish their dreams of joining powers as an officer or officer. In this research paper a portable application which is executed utilizing React Native (Respond Local) system and is accessible for both Android OS and iOS clients. The application appears all the ways in which you'll be able connect the resistance powers, gives the subtle elements of all the protection entrance exams such as NDA, CDS, AFCAT and INET etc., data such as conditional notice dates, past year cutoffs, qualification criteria, opening and capability, list of different best YouTube channels which can be utilized as a study material for different examinations and a notice page where different current upgrades with respect to the protection exams and the method overhauls are appeared. React Native platform is utilized to build this powerful application.

**KEYWORDS:** React Native, Defense Exams, Android, IOS, Flexbox

### 1. INTRODUCTION

Since the discharge of the primary savvy phone, the utilize and request of versatile applications has expanded quickly. This has driven to a colossal sum of applications being made but there's one noteworthy issue, the app has to be backed by both Android and iOS. The designer should make one application for Android stage and one for iOS stage which needs information of two distinctive spaces i.e., for Android portable application, the information of IDE (Android studio, programming dialect: kotlin or java) and for iOS versatile application (programming language: swift or objective c and IDE: Xcode) is required. Indeed, though the application itself is the same, the engineers still have to be developed two applications which needs superfluous time and abilities. Within the summer of 2015, Facebook discharged a framework called Respond Local which is utilized to construct an application in Respond and after that compile it to either Android or iOS. One of the foremost pined for and respectable occupations in India are of the Indian Guard Administrations. The career in Indian Equipped Powers is exceedingly honoured by everybody within the country. Millions of candidates show up for resistance exams each year to fulfil their dream of being portion of this prestigious benefit either as an officer or as a officer. UPSC, SSB of Indian IA, IN & IA and CASB, are the serving sheets that conducts different Protection Section Exams each year to assist candidates accomplish their dreams of joining either Indian Armed force, Indian Naval force or Indian Discuss Constrain as an officer or trooper. The Defence Exams conducted throughout the year are National Defence Academy & Naval Academy (NDA & NA) by UPSC, Combined Defence Services (CDS) Examination by UPSC, Air Force Common Admission Test (AFCAT) by Indian Air Force, Indian Navy Entrance Test (INET) by Indian Navy, Artificer Apprentice (AA) by Indian Navy, Group X and Group Y Airmen Exam by Indian Air Force, Various Direct Entries conducted by Service Selection Boards of Army & Navy [1,2,3,4]. React Native based application platform

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designed for students in this research work is intended for Defence Services. It provides complete solution regarding defence exams like tentative exam dates, pattern, previous year question papers, cut-offs, syllabus, notification, eligibility, etc. Fateh also provides links to various YouTube channels as study material for students. In the upcoming sections, Section 2 describes methodology of the proposed work, followed by results and simulations in Section 3 and conclusion and future work in Section 4. References are listed at the end of the paper.

## 2. METHODOLOGY

The portable application created through this investigate work could be a local application that can work on cross platforms both Android and IOS as we'll be planning our application utilizing Respond Local System. Respond Local combines the most excellent parts of local improvement with Respond, a best-in-class JavaScript library for building client interfacing. Respond primitives render to local stage UI, meaning your app employments the same local stage APIs other apps do. App is outlined for Android and iOS stages and is outlined utilizing Respond Local system as portrayed in Figure.1. Creators have executed application utilizing Microsoft Visual Code Editor which serves as IDE for Respond Local. As we know, Respond Local is javascript based system and employments Respond local components for frontend improvement. Creators have utilized the concepts like foot tab route, viewpagers, drifting activity buttons, menu, sprinkle screen etc. Authors have also used Firebase Server for authentication. Firebase Authentication is most secured authentication among all servers like Php, Django. It provides us a concept of using Google Authentication, Email Verification, OTP based Mobile authentication and many more [5,6,7,8].



**Figure.1.** Native Application Development

The application is actualized utilizing Respond Local and takes after fundamental convenient application building. Each application joins Frontend Progression and Backend Progression. The application businesses Microsoft Virtual Studio Code Editor as IDE for making applications. Respond Local livelihoods the same significant UI building pieces as standard iOS and Android apps. You reasonable put those building squares together utilizing JavaScript and React. To build an iOS app you would like a Mac, as you'd like Xcode. But Android apps can be built on Windows or Mac [9,10]. To actuate started, you reasonable ought to be have Xcode presented (you truly don't in fact have to be have Xcode presented any longer within the occasion that you just utilize create-react-native-app) as delineated in Figure.2.

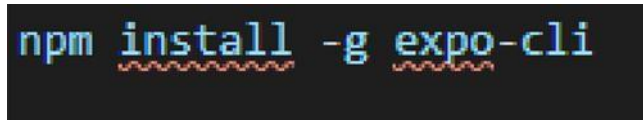


Figure.2 Installation of Expo in System

Flexbox is the foremost arrange strategy, and is arranged to supply relentless organize on distinctive screen sizes. It's additionally conceivable to utilize settled estimations on the off chance that you simply require something to be accurately the same degree regardless of the screen degree. All estimations in Respond Local are unit less, and talk to density-independent pixels [11]. Through and through arranging, edges and padding are all as well maintained as delineated in Figure.3. Lifecycle of Respond Local is delineated in Figure.4. App Json and libraries utilized are delineated in Figure.5 and 6 individually. Most setups from app.json are available at runtime from your JavaScript code through Constants.mainifest. Touchy data such as mystery keys are evacuated. See the "extra" key underneath for data approximately how to pass self-assertive setup information to your app. Libraries are pronounced interior Package.json record. It's a record made by NPM (Hub Bundle Director). It contains all the metadata, conditions, and scripts for your app. One of the imperative things the bundle record lists are the conditions. Conditions are modules or bundles that are attending to be utilized inside your app. A utilize case chart at its slightest complex can be a representation of a user's interaction with the system that shows up the relationship between the client and the different utilize cases in which the client is included. A utilize case chart can recognize the particular sorts of clients of a system and the different utilize cases and will regularly be went with by other sorts of charts as well. Though a utilize case itself might enter into a portion of detail around each credibility, a use-case chart can offer help provide a higher-level see of the system. It has been said a few time as of late that "Utilize case charts are the charts for your system". They deliver the unraveled and graphical representation of what the system must truly do. The reason of the utilize case charts is fundamentally to supply the tall level see of the system and pass on the necessities in laypeople's terms for the accomplices. Additional charts and documentation can be utilized to supply a add up to utilitarian and specialized see of the system. Figures.7 and 8 depicts the utilize case charts for the work worn out this paper.

```
<SafeAreaView style={{ flex: 1 }}>
  <View style={{ flex: 1 }}>
    <LinearGradient
      colors={['#48c9ef', '#6f8ed6']}
      style={{ padding: 15, height: '40%', width: '100%', borderRadius: 5 }}
    >
      <View style={{ padding: 10, marginTop: 20, flexDirection: 'row' }}>
        <Icon
          style={{ padding: 6, margin: 14, margin: 2, color: 'white' }}
          onPress={() => props.navigation.openDrawer()}
          name="md-menu"
          size={30}
        />
        <Text style={{ flex: 1, fontSize: 24, color: 'white', fontWeight: 'bold' }}>Hi {global.firstName}!</Text>
      </View>
    </LinearGradient>
    <View style={{ flex: 1, margin: 20, margin: 20, position: 'absolute', top: 130, width: '90%', height: 420, margin: 1, borderRadius: 12, borderWidth: 0.5, backgroundColor: 'white', borderColor: '#000000', elevation: 2 }}>
      <ScrollView >
        <View style={{ backgroundColor: "white", padding: 10, flexDirection: 'row', width: '100%' }} />
        <SliderBox images={[
          require('../assets/air3.jpg'),
          require('../assets/air2.jpg'),
          require('../assets/air1.jpg'),
        ]} />
      </ScrollView>
    </View>
  </View>
</SafeAreaView>
```

Figure.3 Styles and Layouts in React Native

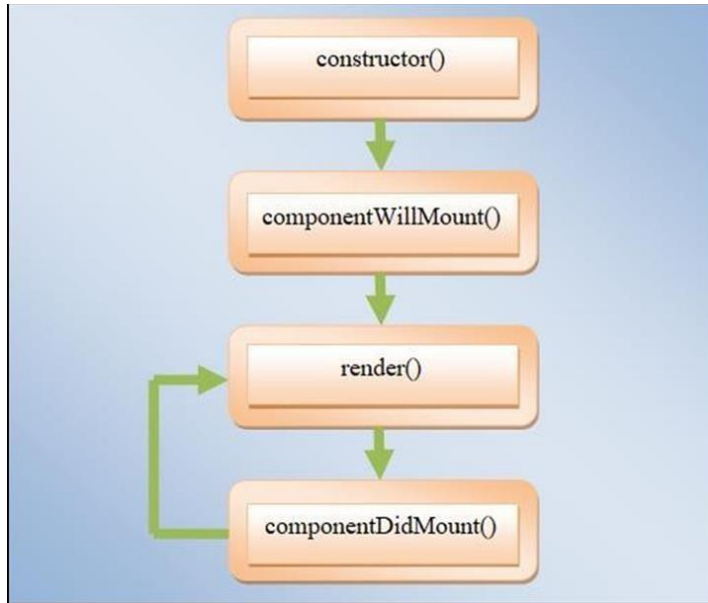


Figure.4 React Native Activity Life Cycle

```
1 app:json > {} expo > {} android > package
2 {
3   "expo": {
4     "name": "Fateh",
5     "slug": "Fateh",
6     "privacy": "public",
7     "sdkVersion": "36.0.0",
8     "platforms": [
9       "ios",
10      "android",
11      "web"
12    ],
13    "version": "1.0.0",
14    "orientation": "portrait",
15    "icon": "./assets/fateh.png",
16    "splash": {
17      "image": "./assets/splash.png",
18      "resizeMode": "contain",
19      "backgroundColor": "#ffffff"
20    },
21    "updates": {
22      "fallbackToCacheTimeout": 0
23    },
24    "assetBundlePatterns": [
25      "**/*"
26    ],
27    "ios": {
28      "supportsTablet": true
29    },
30    "android": {
31      "package": "com.chitrang.fateh",
32      "versionCode": 0
33    },
34    "description": ""
35  }
```

Figure. 5 App.json

```
dependencies: {
  "@react-native-community/masked-view": "^0.1.6",
  "expo": "~36.0.0",
  "expo-asset": "^8.0.0",
  "expo-linear-gradient": "^8.0.0",
  "react": "~16.9.0",
  "react-dom": "~16.9.0",
  "react-native": "https://github.com/expo/react-native/archive/sdk-36.0.0.tar.gz",
  "react-native-gesture-handler": "^1.6.0",
  "react-native-image-slider-box": "^1.0.12",
  "react-native-material-tabs": "^4.1.2",
  "react-native-material-textfield": "^0.16.1",
  "react-native-pure-chart": "0.0.24",
  "react-native-reanimated": "^1.7.0",
  "react-native-safe-area-context": "^0.7.3",
  "react-native-screens": "^2.0.0-beta.4",
  "react-native-web": "~0.11.7",
  "react-navigation": "^4.1.1",
  "react-navigation-drawer": "^2.4.12",
  "react-navigation-stack": "^2.1.1",
  "react-navigation-tabs": "^2.7.0"
},
```

Figure.6 Package.json

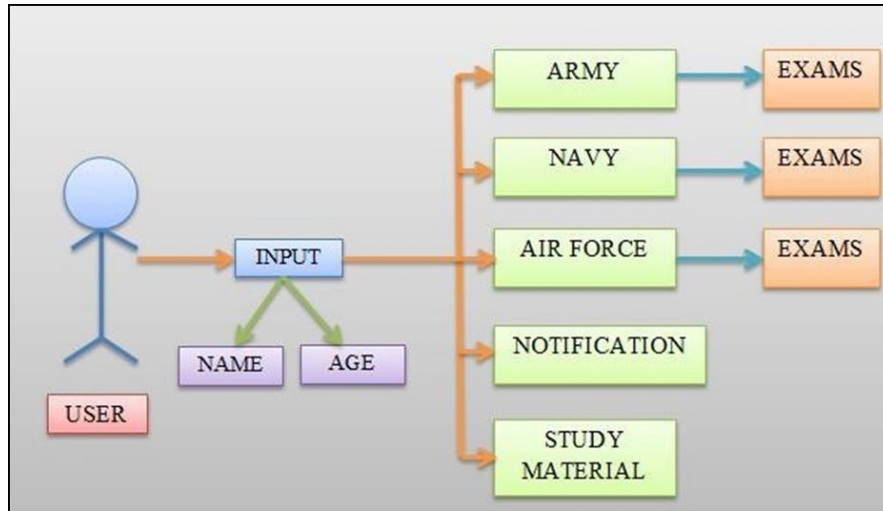


Figure.7 Application Flow Diagram

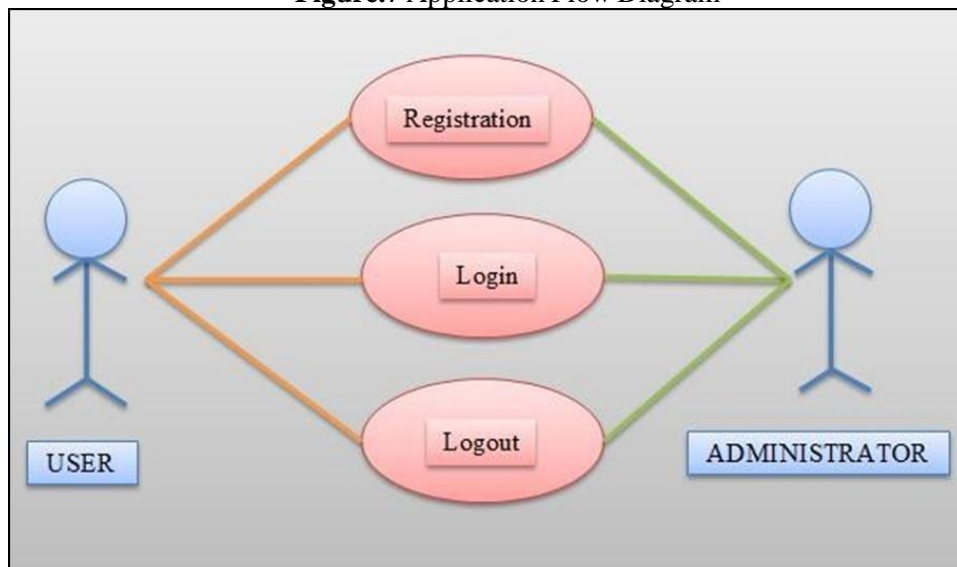


Figure.8 Authentication System

### 3. RESULTS AND SIMULATION

Due to the well composed documentation and community, Respond Local was reasonably simple to get it and utilize. Since the system is built upon Respond which has gotten to be prevalent, one does not have to be as it were center on Respond Local but can get answers based on Respond instep. Since the administrations which are made in Respond or Respond Local are built by utilizing components and employments explanatory programming, particular issues are easy to unravel and get answers to. One angle within the advancement of the Respond Local application was the little sum of code which was required. As can be seen within the storehouses for the Android application and the React Native application, less than half of the sum of code was utilized for the last mentioned. This at the side the effortlessness of creating in Respond Local was the reason why the development time was distant less than anticipated. This permitted for more time being put into testing with the diverse components and re-figuring the code. Figure.9 appears the primary interaction of the client with the application when the client opens it. Figure.10 appears the login page of the application. The client needs to input his title and age in arrange to proceed. The age of the client must be between 16 a long time and 50 a long time. Figure.11 appears the drawer route page. From this page the client can select alternatives to distinctive pages. After selecting the choice, the client will be coordinated to the chosen page choice. Figures 12 and 13 presents some more simulation results of the mobile application

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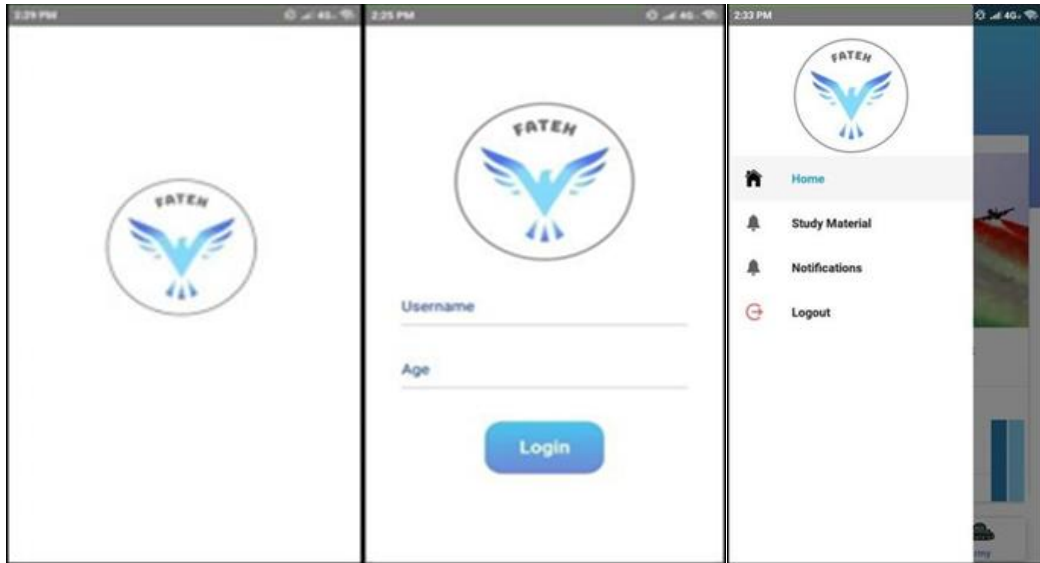


Figure.9 Splash Screen

Figure.10 Login Screen

Figure.11 Drawer Navigation

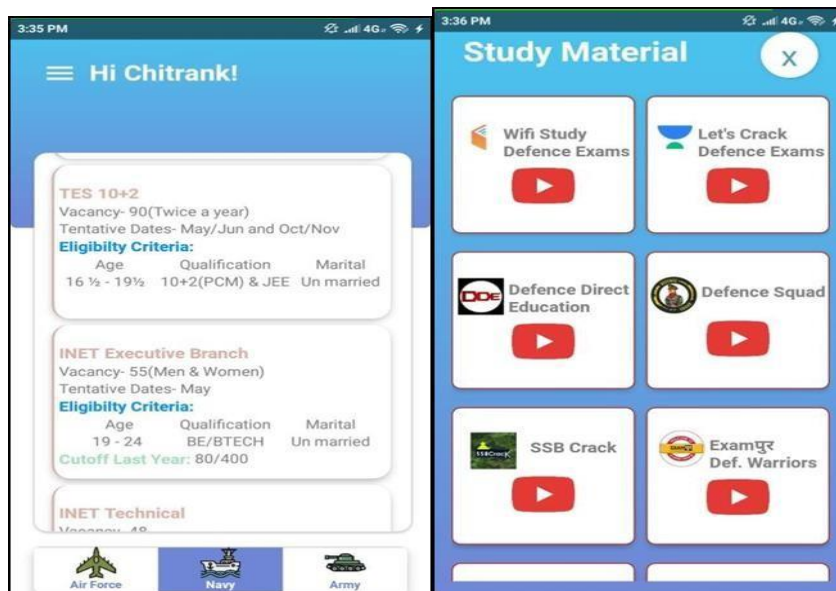


Figure.12 Vacancy details

Figure.13 Study Material Page

#### 4. CONCLUSION

Few numbers of inspirations have driven this inquire about. This application is outlined which can be utilized on both Android and iOS stages. The application planned will be making a difference the adolescents in arrange to seek after their dreams to connect the Indian Outfitted Powers. The application will be giving the points of interest for joining the resistance. The app will be giving the names of the exams with their points of interest such as exam sort, cutoffs, opportunities, capabilities and provisional dates etc. Our application will moreover be giving joins to best YouTube channels as consider materials from which the clients can get ready for the exams. Besides this application will moreover give a notice page where the clients will be informed around the current and most recent prepare upgrades with respect to the protection exams and determination strategies.

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