Programming for Mobile Devices

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Abstract:

This report includes an overview of the proposed mobile application, as well as a description of the application's features, target users, objectives and comparison with similar apps.

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1.Goal and users:

The goal of the app is to help people with their daily tasks, by rewarding them everytime they complete a task, thus incouraging completing as many tasks as possible. The main audience for this app are people who are dealing with procastination or perfectionism and have a hard time getting started with their work.

It's tough to achieve big goals when they seem to overwhelm you. As a consequence, it's easy to procrastinate on them. One of the best ways to solve this problem is by breaking down a large goal into smaller parts. This is where a to-do list becomes significant. It lets you make large and overwhelming projects manageable.

Also, you get more done by focusing on high-value activities. Once you have a list of things you need to-do, it's much easier to prioritize the tasks on it. This will ensure you're always working on the right things. Otherwise, it's easy to fall into a circle of doing what seems easiest or most urgent. Doing this may result skipping important things that don't require your immediate attention.

2.Introduction

One of the most important reasons for keeping a to-do list is the organization. Organizing your tasks with a list can make everything much more manageable and make you feel grounded. Seeing a clear outline of your completed and uncompleted tasks will help you feel organized and stay mentally focused.
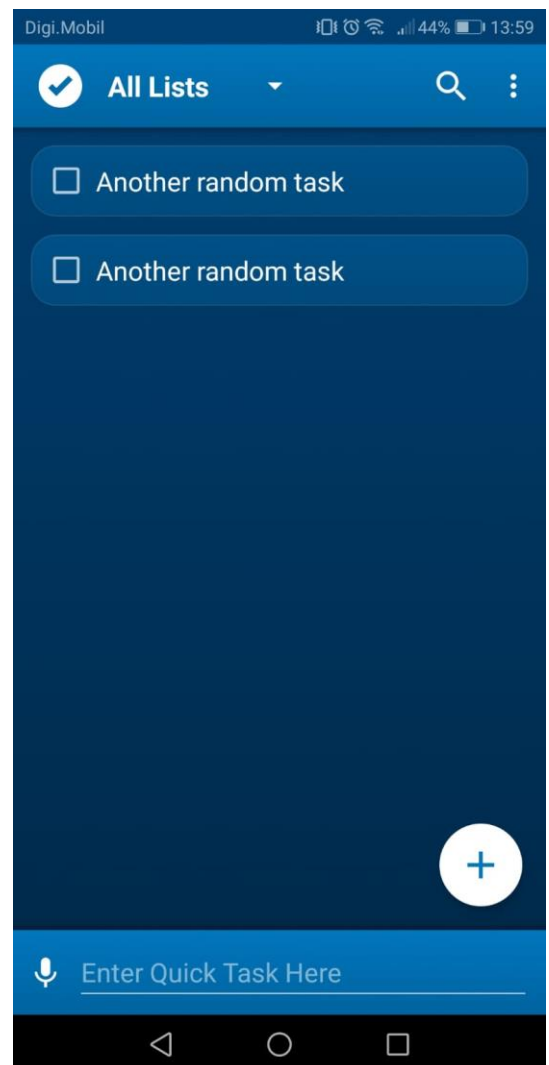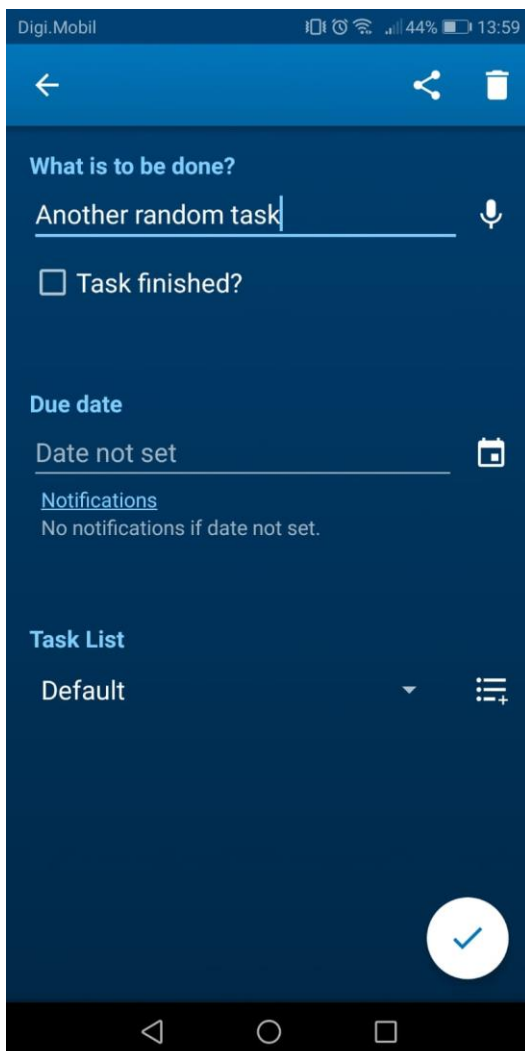
As you cross items off your to-do list, you'll feel a sense of progress and accomplishment that can be missed when rushing from one activity to the next. The affirmation that you are making progress will help motivate you to keep moving forward rather than feeling overwhelmed.

Having a list of all your tasks will allow you to sit down and make a plan. One study showed that fifteen minutes spent planning could save an hour of execution time! If you record all your tasks in a to-do list, you can easily review the list and prioritize the most important tasks. Why waste time on trivial activities when there are important matters that need your attention? One study, conducted by the Harvard Business Review, showed that 90% of managers wasted valuable time through poor time management. Your to-do list will help you focus your attention on the most important task of the moment

3.State of art

The inspiration for my app is the standard To do list app, where you can add a task and then see it in the list. Then when you complete a taskm you can mark it and then it will dissappear from the list.

Below we have _To Do List_ , and app downloaded from the Play Store. As you can see, you can add a task from the buttom „+", name the task and select a due date and choose in which list of tasks you want it to go (Default, Urgent, Study, Home).
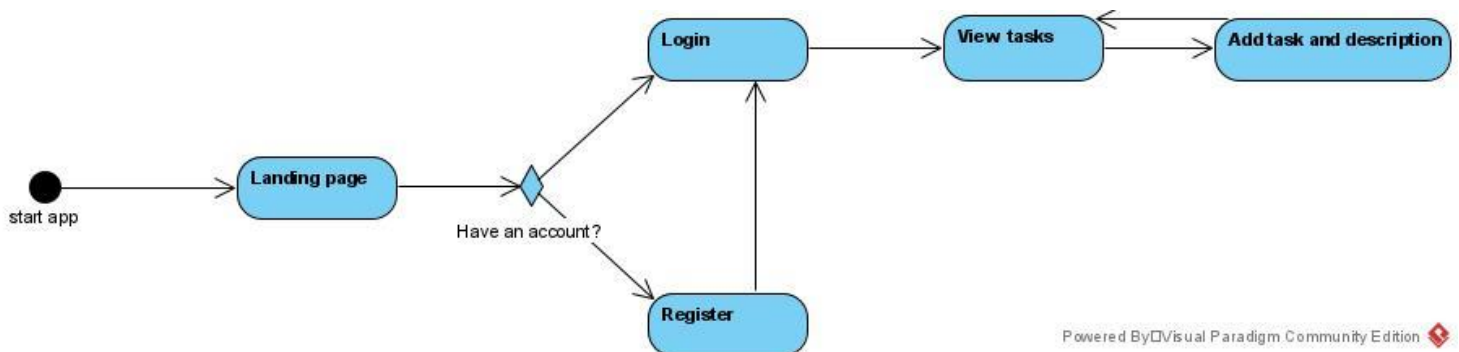
4. The original contribution of the author

Although the idea for my app is far from being unique, because there are a lot of apps that can do the same thing, I believe that my contribution to this is the relaxing design of the app and the posibility to add a description to the task, to be easier to remember in detail what you have to do.
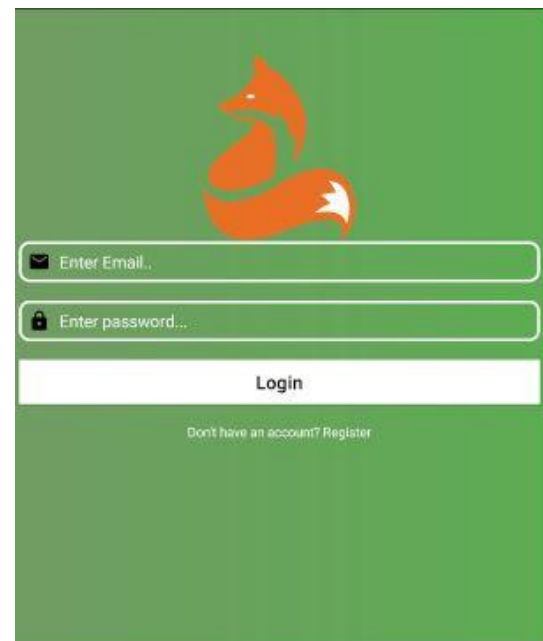
5. Development plan

The application is developed with the help of *Android Studio IDE* using Java as primary programming language and by using Firebase for the authentification.

6. User Manual

The app starts after clicking the app's icon. It opens with an animation of the logo and the name of the app. Then you are redirected to the login screen. If you have an account, you can directly login into the aplication, if not, you can register an account using only your email address and a password of your choice. The account will be saved into the Firebase database.

Then you can enter the list with the tasks already made. Through an add button in the corner of the app you can add a new task and add a description to the task. If you change your mind you can click cancel and you will come back to the list of the tasks or you can save the task and it will appear in the list.

7. App's structure

- **Login implementation**
  In the login part of the project, we have the logo on the top, and then two text views that are used for the login proccess, where you complete your email address and password and then it is checked with the database if the data is true.

```xml
<ImageView
    android:layout_width="200dp"
    android:layout_height="200dp"
    android:src="@drawable/foximage"
    android:layout_marginTop="50dp"
    android:layout_gravity="center"/>

<EditText
    android:id="@+id/loginEmail"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:hint="Enter Email..."
    android:layout_marginBottom="10dp"
    android:layout_marginRight="10dp"
    android:layout_marginLeft="10dp"
    android:textColor="#fff"
    android:textColorHint="#fff"
    android:inputType="textEmailAddress"
    android:background="@drawable/inputs"
    android:drawableStart="@drawable/ic_email_black_24dp"
    android:drawableLeft="@drawable/ic_email_black_24dp"
    android:drawablePadding="10dp"
    android:padding="10dp"/>

<EditText
    android:id="@+id/loginPassword"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:hint="Enter password..."
    android:layout_margin="10dp"
    android:textColor="#fff"
    android:textColorHint="#fff"
    android:inputType="textPassword"
    android:background="@drawable/inputs"
    android:drawableStart="@drawable/ic_lock"
    android:drawableLeft="@drawable/ic_lock"
    android:drawablePadding="10dp"
    android:padding="10dp"/>

<Button
    android:id="@+id/loginButton"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:text="Login"
    android:textAllCaps="false"
    android:layout_margin="10dp"
    android:textColor="#000"
    android:textSize="20sp"
    android:background="#fff"/>
```

```xml
<TextView
    android:id="@+id/loginPageQuestion"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:text="Don't have an account? Register"
    android:textColor="#fff"
    android:layout_gravity="center"
    android:gravity="center"
    android:layout_marginTop="10dp"/>
```

If you dont have an account , you can make one by clicking on Register and you'll be redirected to the registration page.

```java
loginBtn.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        final String email = loginEmail.getText().toString().trim();
        String password = loginPwd.getText().toString().trim();

        if (TextUtils.isEmpty(email)){
            loginEmail.setError("Email is required");
            return;
        }
        if (TextUtils.isEmpty(password)){
            loginPwd.setError("Password is required");
            return;
        }else {
            loader.setMessage("Login in progress");
            loader.setCanceledOnTouchOutside(false);
            loader.show();

            mAuth.signInWithEmailAndPassword(email, password).addOnCompleteListener(new OnCompleteListener<AuthRes
                @Override
                public void onComplete(@NonNull Task<AuthResult> task) {
                    if (task.isSuccessful()){
                        Intent intent = new Intent( packageContext: LoginActivity.this, HomeActivity.class);
                        startActivity(intent);
                        finish();
                        loader.dismiss();
                    }else {
```

- **Register implementation**

The registration part works the same as the login, only it writes into the database the account instead of checking if it's already there.

```xml
<TextView
    android:id="@+id/RegistrationPageQuestion"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:text="Already have an account? Login"
    android:textColor="#fff"
    android:layout_gravity="center"
    android:gravity="center"
    android:layout_marginTop="10dp"/>
```

8. Conclusions

This project allowed me to explore a new field and learn new things about programming for mobile devices in Android Studio. It helped me get used to using Java and also with Firebase. I'm hoping I'll be doing projects like this more often.

9. References

- https://sendtask.io/blog/why-you-should-have-a-to-do-list/
- https://www.toodledo.com/info/whyuse.php
- https://guides.codepath.com/android/Basic-Todo-App-Tutorial
- https://www.sitepoint.com/starting-android-development-creating-todo-app/