Hello and Welcome to the Aviation Safety App.

The purpose of this application is to assist single propeller pilots with situational awareness and ultimately safe flying. This app was created after immense research was done on what the major causes of Single prop airplane accidents are in the South African scope. Furthermore, research also included how some other countries have implemented aviation safety for the same incidents in their respective areas.

The Aviation Safety application helps pilots plan safe flights by focusing on the main areas that are a cause for concern when it comes to flying. These are Aircraft and Safety checklist, Weather report, Emergency checklist and being able to check weather in the destination location for better planning. Let's look at these in detail:

Weather report:

- This is the first and crucial step in the application as it gives the pilots detailed information about the weather conditions and if they are favourable for safe flying. Conditions such as visibility, windspeed etc are included and it features a 3-day forecast. The most important feature is the METAR information, which is displayed in pilot language, which basically gives the pilot more information about their nearest safe landing base should they encounter some challenges whilst flying and gives a clear weather report on that landing base.

Aircraft and Safety checklist:

- Once the pilot is confident about the weather report, they can proceed to enter the aircraft details under aircraft details which will require the aircraft registration, aircraft type and aircraft model. Once this has been captured, a safety checklist will be displayed for the pilots to go through which includes aircraft documentation and airworthiness, weather conditions and forecast, fuel and oil levels as well as weight and balance calculations. Once this is cleared, the app automatically takes you to the emergency checklist.

Emergency checklist:

- The emergency checklist exists so that the pilot checks if they have everything, they need in case of an emergency. It includes checking the parachutes, the fire extinguisher, the emergency door and the backup landing gear. Once everything is done, the pilot will be cleared for take-off.

Location:

- This section helps the pilots check the weather forecast of the destination prior to flying there. Remember, weather report shows the report of the current take-off location but this one checks any other location or the destination location weather report.

The application retains the information for all flights, and should an accident occur, this information can be used to determine what went wrong and what could have been done to prevent such from happening again. It is still in development phase and therefore, more features might be added later.

How to run and operate the Aviation Safety App on Windows

After successfully opening the Aviation Safety application on your Visual Studio, proceed to run the application by clicking on this run application button as shown below:
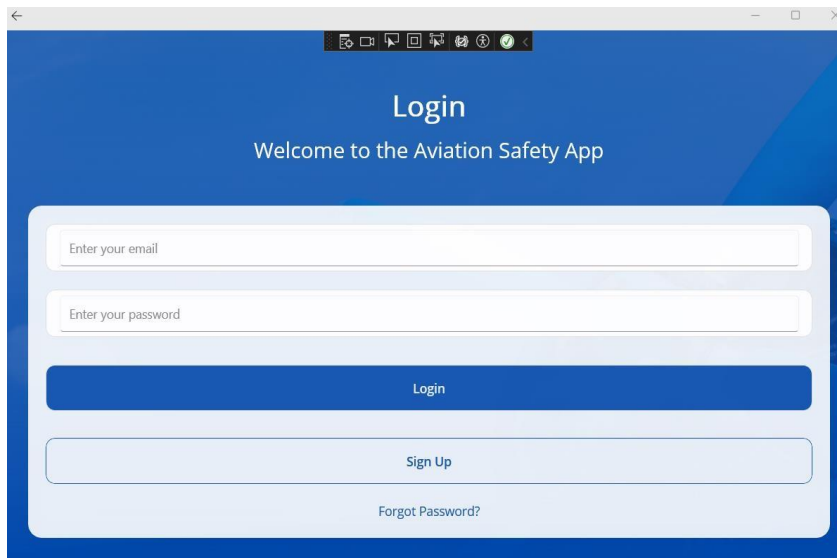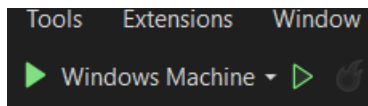

After it runs, this is what you should see:
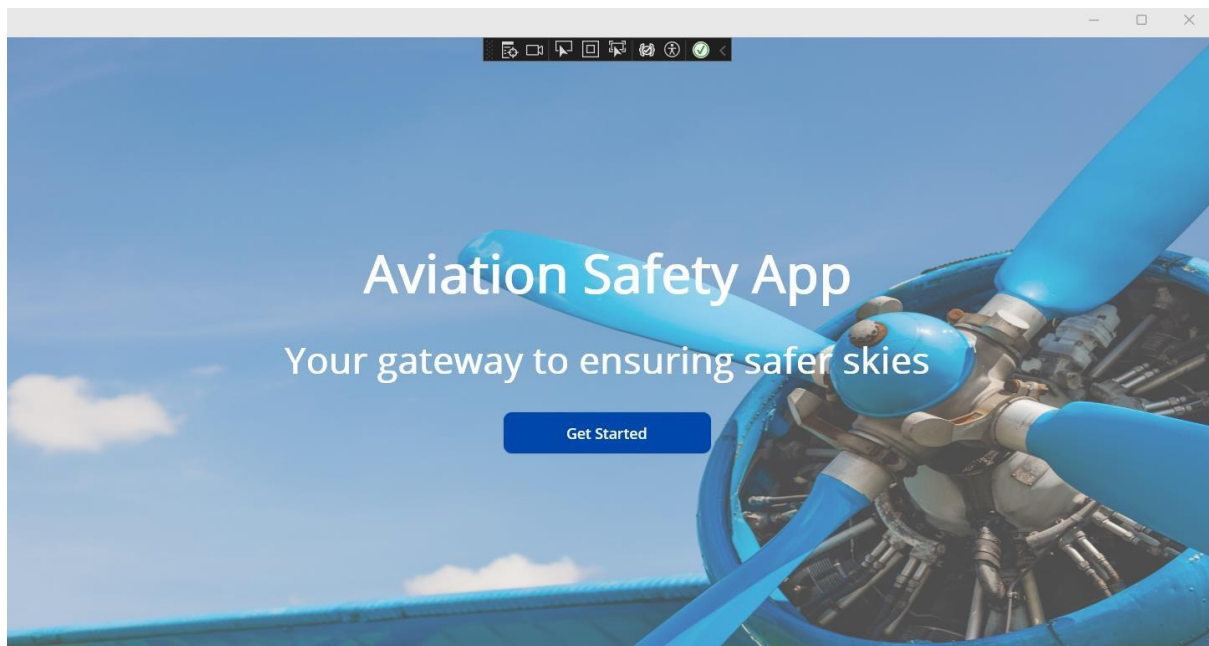
The first step is done, now let's go to the app functionality.

How to successfully navigate your way around the App

Once you click on get started, you will land on the Login page where you are presented with two options, login and sign up:

When you use the app for the first time, you ought to sign up first, then use those credentials to login.

Upon signing up, you will receive an email which has a verification link, and you need to verify your email prior to the successful creation of your account.

Once that's out the way, after Loging in, you will be taken directly to the pilot dashboard which looks like this image below:
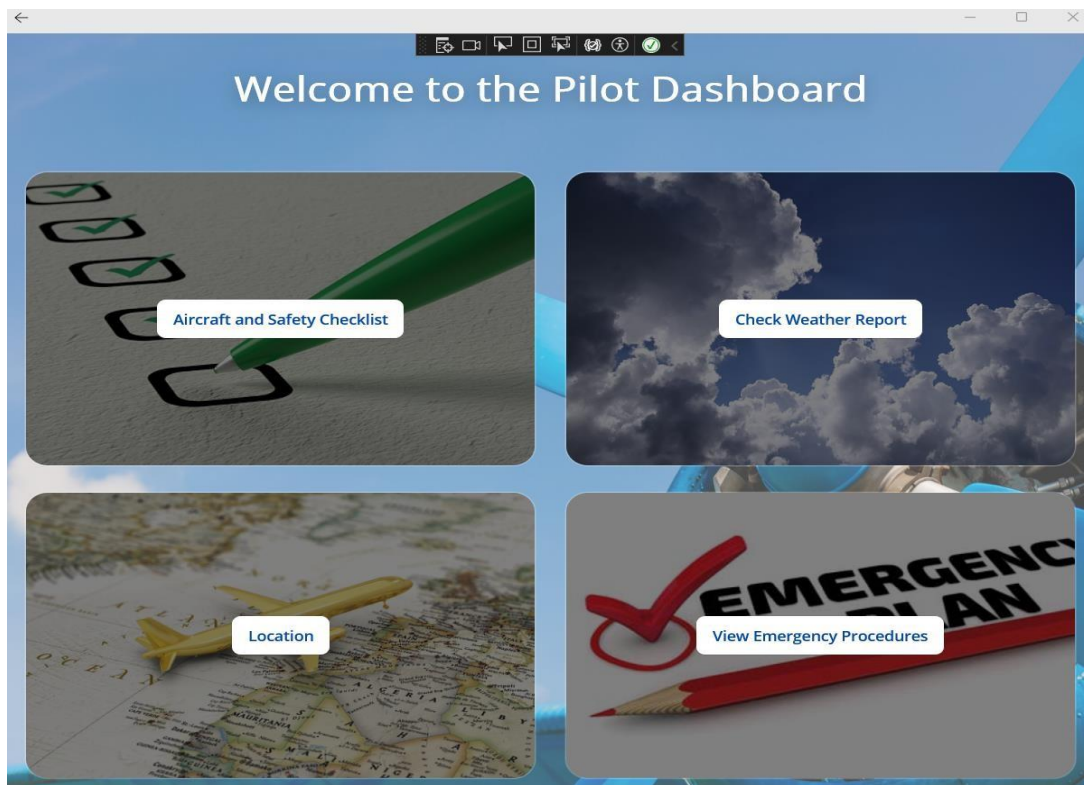
Development tools

This application was created using .Net Maui as it makes easier for development because it is a cross-platform framework that allows developers to create native apps for mobile and desktop. It is also easier to deploy to multiple operating systems such as Windows 10 and 11 or higher, IOS 11 or higher, Android 5.0 or higher and macOS 11 or higher using a single code base.