Is IT raining?

Weather Forecast Application

Mobile Computing | Assignment #2

Group 6:

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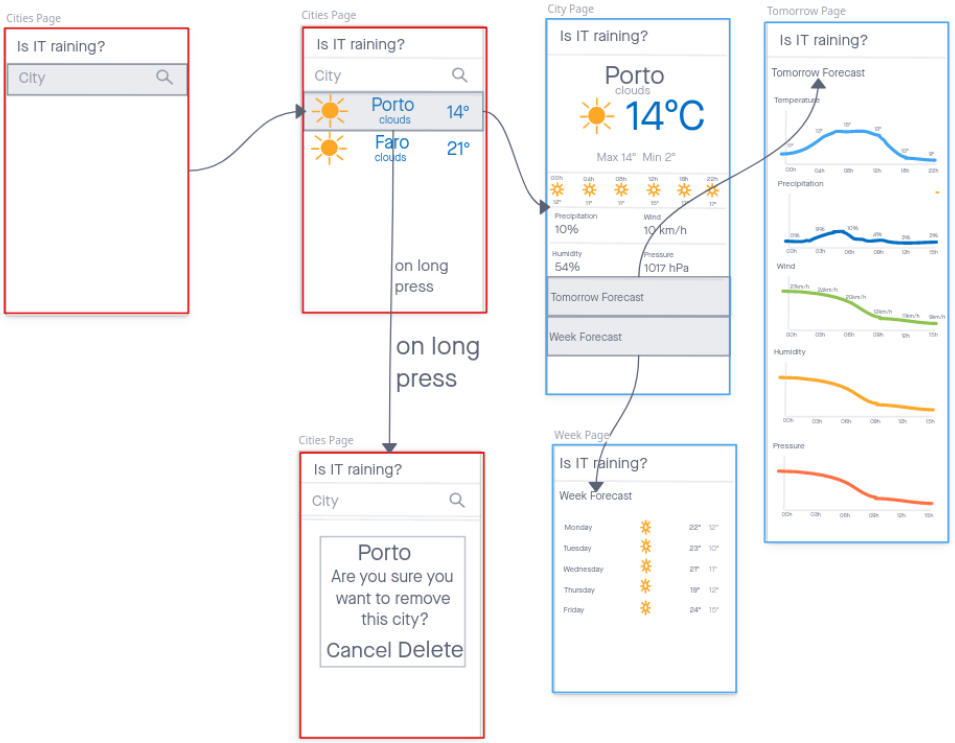
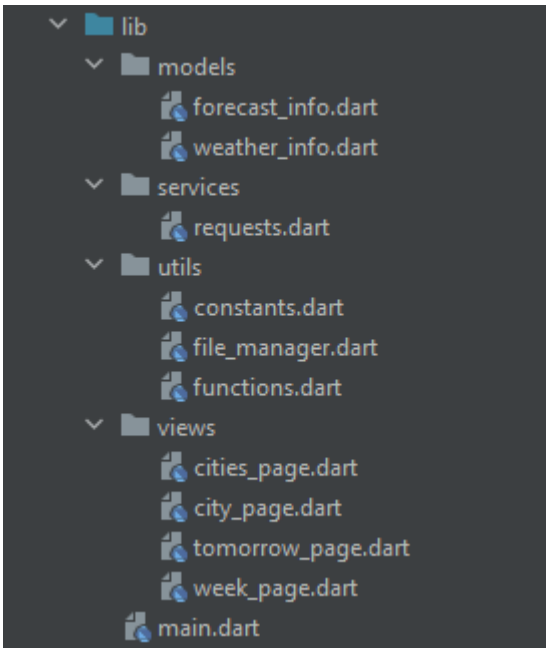
Features

- Users can search for **any existing city in the world**;
- Users can **add and remove cities** from the application cities list;
- Application **cities list are saved in a file** to guarantee they are updated when the application restarts;
- Users can see information about the **Current Weather** (actual temperature, main weather and respective description and icon, and a “funny answer” to the application name (that is a question): “Is IT raining?”: “Yes, IT is!” / “No, IT’s not…” (IT means Information Technology in this application context);
- When the user presses a city card, **City page** will appear showing its:
    - **Current Weather**: actual, minimum and maximum temperature, main weather and respective description and icon, pressure, humidity, wind speed, sunrise and sunset time and timezone;
    - **Next 24h Forecast**: scrollable forecasted temperature and weather;
- Inside City page, if the user presses “Tomorrow Forecast”, **Tomorrow page** will appear showing:
    - **Tomorrow Forecast**: graphic representations about forecasted temperature, precipitation, wind, pressure, humidity;
- Inside City page, if the user presses “Weekly Forecast”, Week page will appear showing:
    - **Week (5 days) Forecast**: each day forecasted weather, minimum and maximum temperature.
- When the user long presses a city card (for a longer period of time), an **alert dialog** will be shown and the user can choose **if he wants to delete that city from the cities list** or to cancel this operation.



Architecture

- **Models**: code folder where we put all the information (classes) read from the API requests, that will be after shown in the application;
- **Services**: code with functions to make and receive API requests from OpenWeatherMap;
- **Views**: dart Widgets that display models information and contains all the code that can be seen in the application;
- **Utils**: files containing constants, file-saving and file-reading related functions.

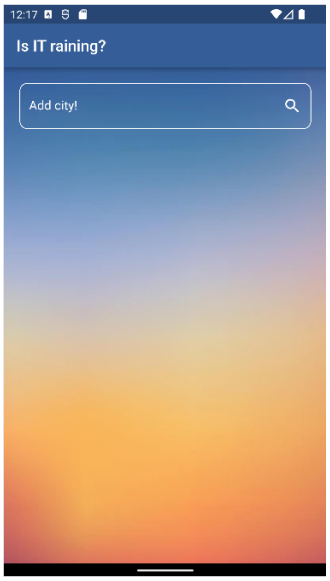


Dart packages used

- http package: OpenWeatherMap API requests;
- path_provider: File path for saving information about the cities list;
- syncfusion_flutter_charts: Tomorrow forecast graphics representations;
- intl: DateTime functionalities;
- collection: List sorting.

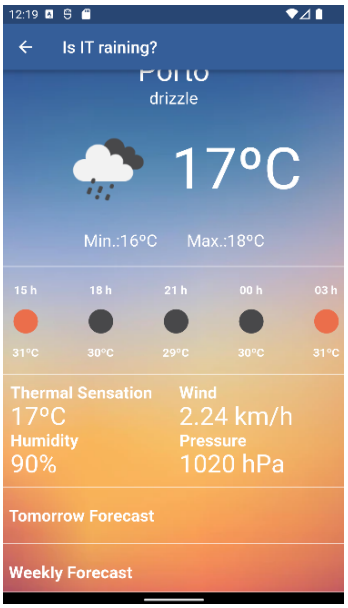
```
dependencies:
  flutter:
    sdk: flutter

  http: ^0.13.4
  path_provider: ^2.0.10
  syncfusion_flutter_charts: ^20.1.58+1
  intl: ^0.17.0
  collection: ^1.16.0
```

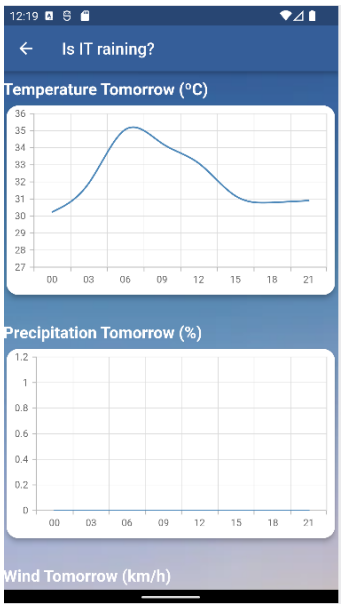
Interface

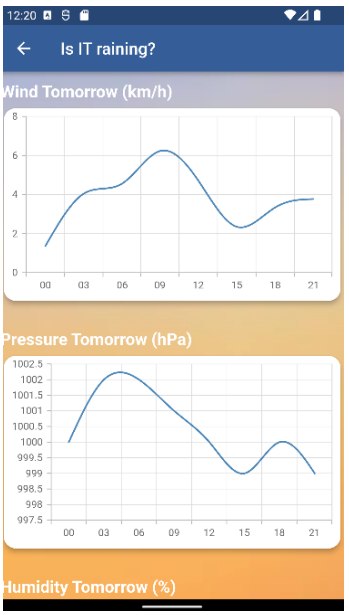

Is IT raining?
Add city!

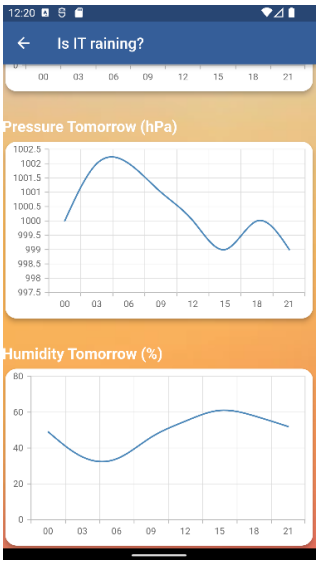

Is IT raining?
Add city!
Porto
drizzle
No, IT's not raining...
17ºC
Lisbon
scattered clouds
No, IT's not raining...
18ºC
London
light rain
Yes, IT is raining!
14ºC
Dubai
clear sky
No, IT's not raining...
32ºC

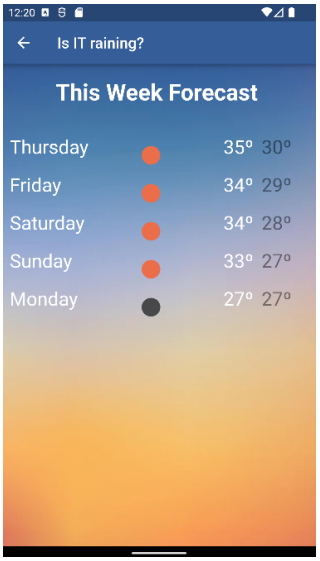

Is IT raining?
Porto
drizzle
17ºC
Min.:16ºC
Max.:18ºC
06 h
09 h
12 h
15 h
35ºC
34ºC
33ºC
31ºC
Thermal Sensation
17ºC
Wind
2.24 km/h
Humidity
90%
Pressure
1020 hPa
Tomorrow Forecast

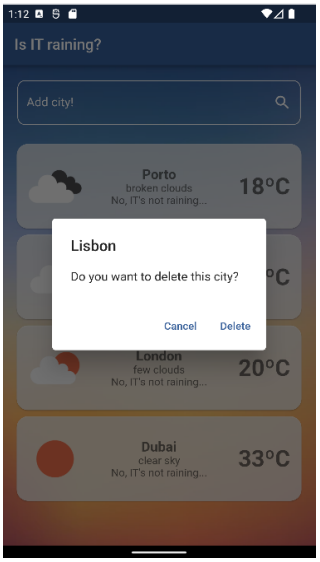

Is IT raining?
drizzle
17ºC
Min.:16ºC
Max.:18ºC
15 h
18 h
21 h
00 h
03 h
31ºC
30ºC
29ºC
30ºC
31ºC
Thermal Sensation
17ºC
Wind
2.24 km/h
Humidity
90%
Pressure
1020 hPa
Tomorrow Forecast
Weekly Forecast


Is IT raining?
Temperature Tomorrow (ºC)
Precipitation Tomorrow (%)
Wind Tomorrow (km/h)


Is IT raining?
Wind Tomorrow (km/h)
Pressure Tomorrow (hPa)
Humidity Tomorrow (%)


Is IT raining?
Pressure Tomorrow (hPa)
Humidity Tomorrow (%)

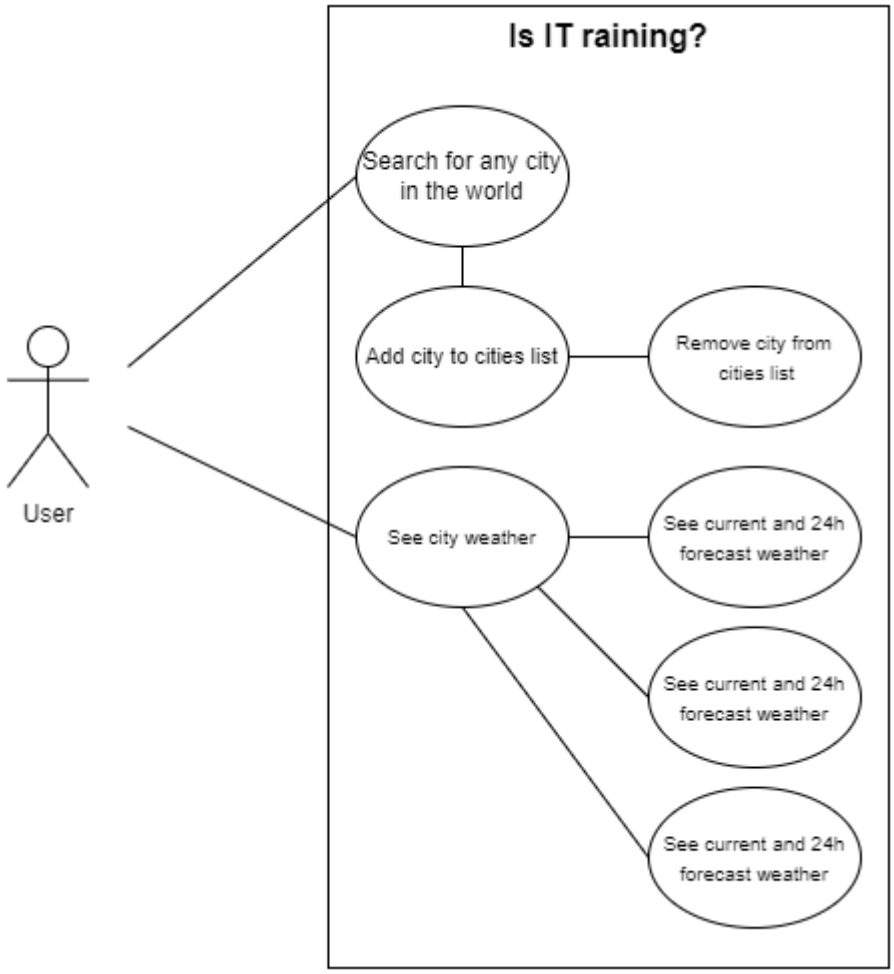

Is IT raining?
This Week Forecast
Thursday
35º 30º
Friday
34º 29º
Saturday
34º 28º
Sunday
33º 27º
Monday
27º 27º


Is IT raining?
Add city!
Porto
broken clouds
No, IT's not raining...
18ºC
Lisbon
Do you want to delete this city?
Cancel
Delete
London
few clouds
No, IT's not raining...
20ºC
Dubai
clear sky
No, IT's not raining...
33ºC

Testing

- If the user tries to add a non-existing city, the application will just “skip” that addition and show the same cities list (there is no explanation to the user that that operation failed though).

Use Case Diagram



References & Bibliography

- Slides provided by professor António Pimenta Monteiro in the Mobile Computing course;
- Flutter Tutorials - https://flutter.dev/
- Current weather and forecast - OpenWeatherMap
- https://javiercbk.github.io/json_to_dart/
- https://docs.flutter.dev/cookbook/persistence/reading-writing-files
- https://stackoverflow.com/questions/54515186/async-await-then-in-dart-flutter