

# Mobile Computing - Winter 2024

## Assignment 2 – Utilizing Android Database and Network (120 marks – 60 + 60); Deadline: Mar 28, 9pm

1. Assume that you are going to a foreign country, and would like to download a history of the weather conditions there. Design an app that utilizes a free weather API and then downloads the data using it. Accept the date and year from the user as input, and then show the maximum and minimum temperature on that date. Note that the open API gives data in the form of JSON files.
2. Now, assume that you want to store the above information in the form of a database. This would allow you to access such information even without network connectivity. Add a functionality to the app to (i) create the relevant database and schema, (ii) insert data into the above database and schema, and (iii) show the maximum temperature and minimum temperature on the given date. In case the date is in the future, then use the average of the last 10 available years temperatures.

### What and How To Submit

- The Kotlin/Java and Gradle program sources, along with XML. Composition needs to be used wherever appropriate. Use of XML files are also allowed, but their id's need to be used to make the changes wherever necessary.
- A readme text file, explaining the way the implementation has been done.
- Uploading to github via a private repository is a must. The submission needs to be made to BOTH Google Classroom and github.

### Grading Rubric

For Q1,

1. Utilizing the utilizing the API and downloading the data – 10 marks
2. Creation of the UI – 10 marks
3. Parsing of JSON files – 15 marks
4. Proper output and running code – 15 marks
5. Validation of user input, proper error messages and running app – 10 marks

For Q2,

1. Creation of database and schema – 10 marks
2. Insertion of data into the database and sending queries – 15 marks
3. Identification of cases where calculation is necessary, and computing it – 10 marks
4. Checking if network connectivity and its associated logic – 10 marks
5. Proper error messages, correct output and running app – 15 marks

### **Late Submission Policy**

- -0.25 per hour for the first 96 hours.
- Submissions beyond 4 days of delay would only be accepted with official leaves of absence.