Assignment 1

instructions and Grading Criteria

- This is an **individual** assessment.
- Assignments must be completed using the approaches and techniques demonstrated in class.
- The majority of grades are assigned based on the correct completion of the required functionality.
- The user interface of your application must be reasonably polished, easy to understand, and readable. Use reasonably pleasant colors and typography
- In addition to the required functionality, learners are expected to use the coding conventions demonstrated in class, meaningful variable naming, and clearly organized code. Comments are helpful but not required.

Submission Checklist

For your submission to be graded, you must provide

1. a **zip** file of your project, and
2. a **screen recording** demonstrating the functionality you implemented.

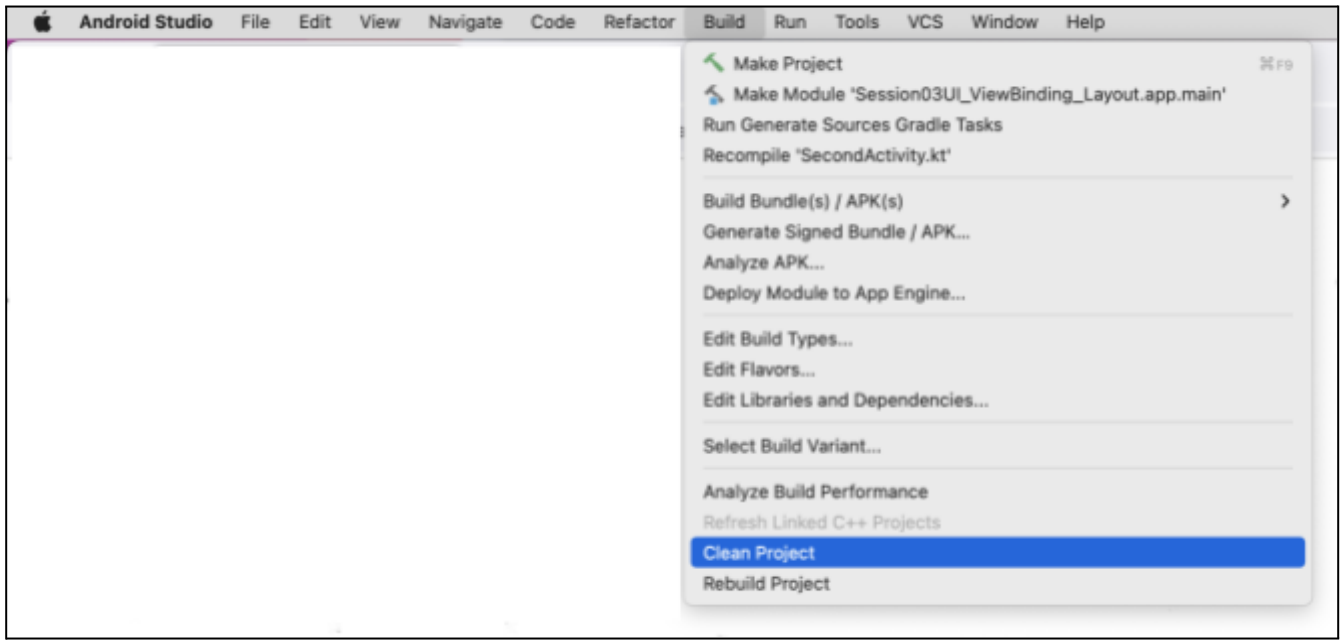
How to create your project:

1. Create an ANDROID project called: HYDRO_FIRSTNAME. Replace FIRSTNAME with your first name.

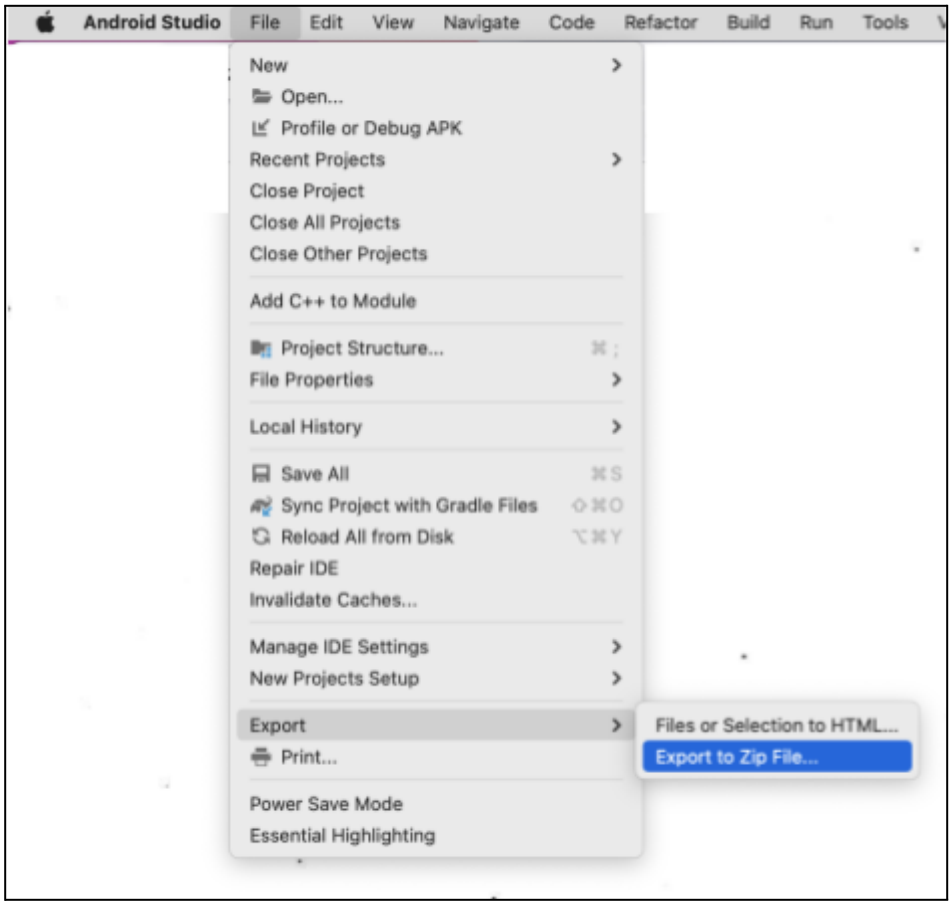
2. In the project, create and test your solution

3. When you are ready to submit, run Build > Clean. After running Build > Clean, DO NOT RERUN YOUR PROJECT!!!

- Build > Clean remove unnecessary configuration files from your project and make your final project smaller in size.



4. Choose File > Export to zip file



5. Ensure the zip file is named HYDRO_FIRSTNAME, where you replace FIRSTNAME with your first name.

6. Submit the zip file to the dropbox.

Academic Integrity

- This is an individual assessment.
- Permitted activities: Usage of Internet to search for syntax only; usage of course materials
- Not permitted:
  - Communication with others (both inside and outside the class)
  - Discussion of solution or approaches with others; sharing/using a "reference" from someone
  - Searching the internet for full or partial solutions
  - Sharing of resources, including links, computers, accounts

Problem Description

Build an app that enables the user to calculate the cost of their electricity bill.

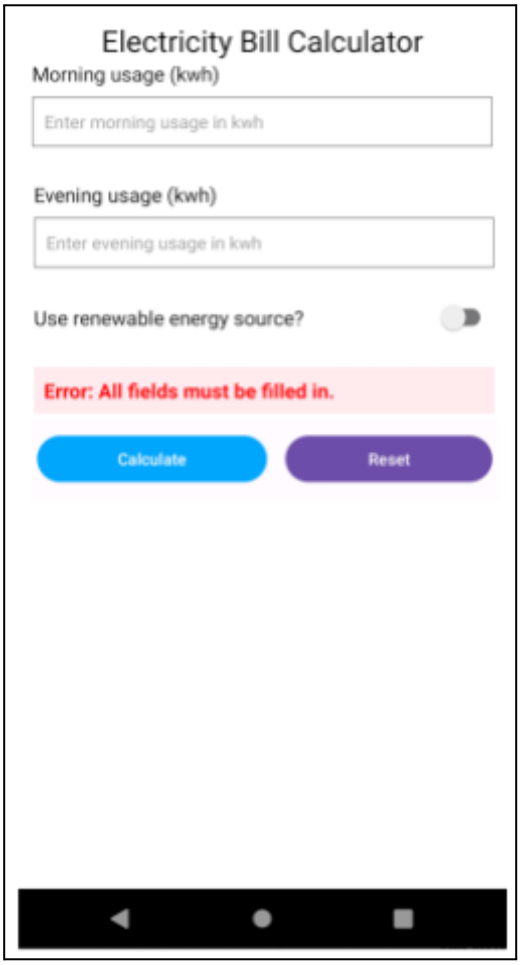
The user interface must provide the form fields to capture the information about the user's electricity usage.

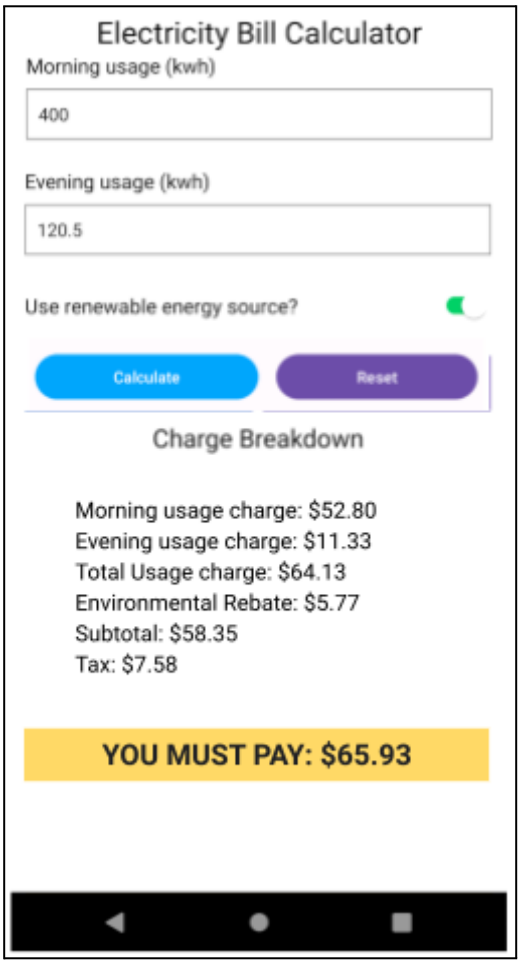
- When the CALCULATE button is pressed, display a receipt to the user.
- When the RESET button is pressed, clear all form fields and receipts.
- User must enter morning and evening usage. If a field is missing, display error message.

You must use view bindings.

Example user interface.

This is an example only and displayed calculations may not be correct. Refer to the HOW TO CALCULATE THE ELECTRICITY BILL section for actual calculations.





How to calculate the electricity bill

1. The formula for calculating the electricity bill is:
((morning electricity usage cost + evening electricity usage cost) - environmental rebate) + sales tax

2. The *usage cost* is:
usage x hourly rate

- Morning rates are $0.132 per kwh
- Evening rates are: $0.094 per kwh

3. If the user selects "uses a renewable energy source", then the *environmental rebate* is 9% of the total usage costs (sum of morning and evening usage costs). Otherwise, the rebate is $0.00

4. Sales tax is 13%

Example calculation

Customer uses 400 kwh hours in the morning and 120.50 kwh in the evening.
Customer uses a renewable energy source

The calculation breakdown is:

```
Morning usage cost: $52.80          ($0.132 x 400)
Evening usage cost: $11.33          ($0.094 x 120.5)
Total usage charge: $64.13          (morning + evening cost)
Environmental rebate: -$5.77        ($64.13 x 0.09)
_____________________________________
Subtotal: $58.36                    (total usage  - environmental rebate)
Sales Tax: $7.59                    ($64.13 x 0.13)
YOU MUST PAY: $65.95                (subtotal + tax)
```

END OF ASSESSMENT