



FIT2081 Mobile Application Development

WEEK 8

Dr. Lim Chern Hong
Semester 1, 2023
Monash University Malaysia



Announcement for Week 8

- **Week 8 (Raya week, 24-28 April)**
 - Forum will not be replaced (Please refer to the PPT videos for the topics)
 - All tutorial sessions will be cancelled, the tutorial video will be recorded and uploaded to the moodle
 - Consultation sessions will be available during Dr. Vee's tutorial slots (5 sessions). Join ONLY if you need help.
 - Lab will be as usual, but we provide an alternative where students can record and submit the explanation video together with the code by Friday 11.55pm (**ONLY FOR THOSE WHO REQUESTED IT**).
 - Pre-reading quiz and workshop quiz submission deadline extended to Friday 11.55pm (28 April).

Learning Outcomes for Week 8

Database: Part 2

- Content Provider
- Content Resolver
- Cloud Storage (Firebase)

Activities and Checklist for week 8

Activity	Notes	Checked?
Study the slide “FIT2081_Week8_Malaysia” & All the reading material in the moodle	Useful to complete your lab tasks.	
Complete the pre-reading quiz	Access it from the “assessment section” in moodle. Submit by Friday 11.55pm.	
Attend Forum	Online, for topics wrap-up.	
Complete Workshop quiz	Workshop quiz questions will be uploaded on Monday. Submit by Friday 11.55pm.	
Complete lab task	Please refer to the complete section in week 8 moodle	
Attend tutorial	All tutorial sessions are cancelled, replaced with consultation session during Dr. Vee’s tutorial slots. Join ONLY if you need help	
Attend Lab	Physical/Record a video –Submit your lab tasks (including the extra task) on Friday 11.55pm	

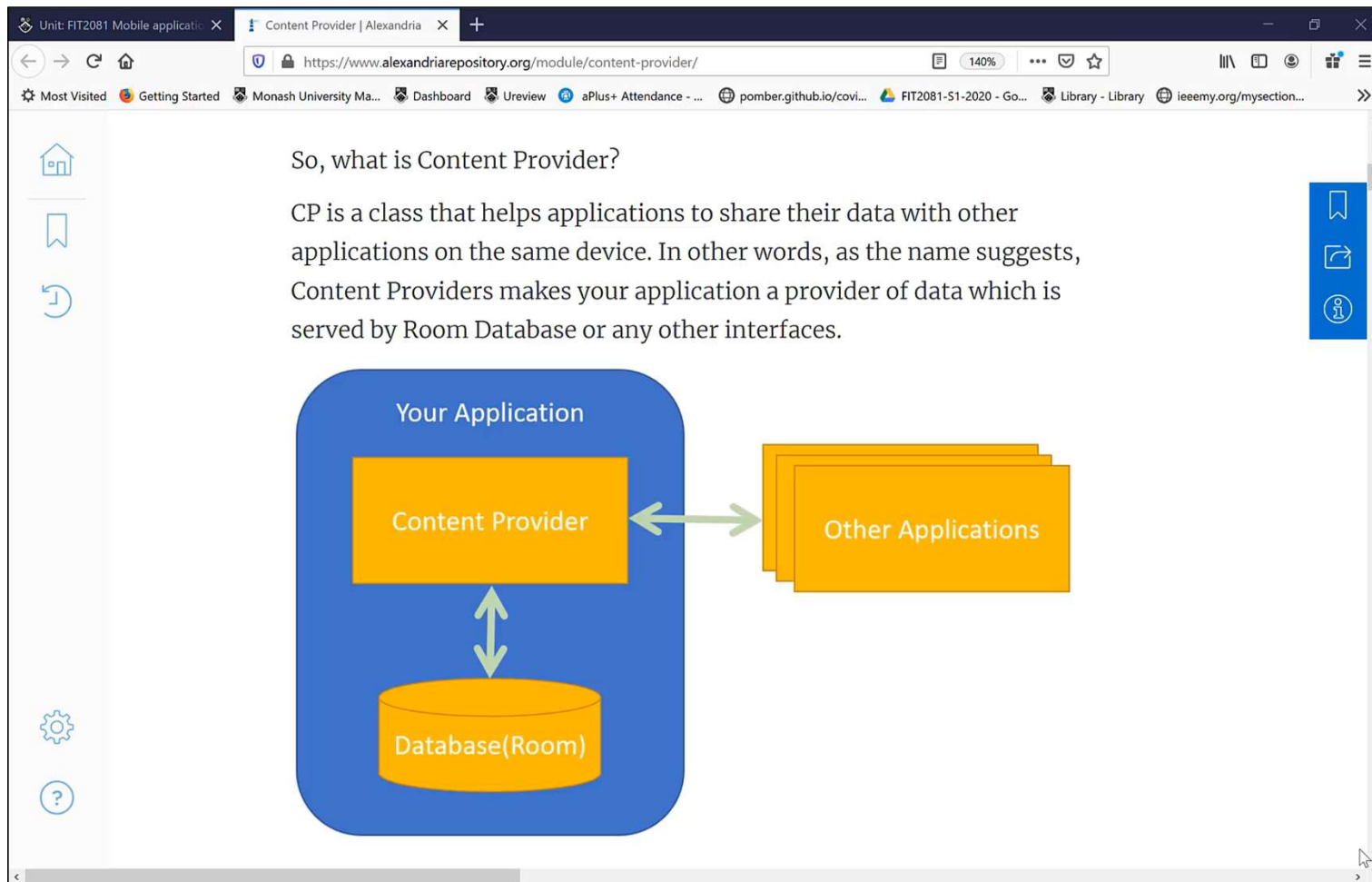
Tutorial time!



Gif retrieved from <https://gifer.com>

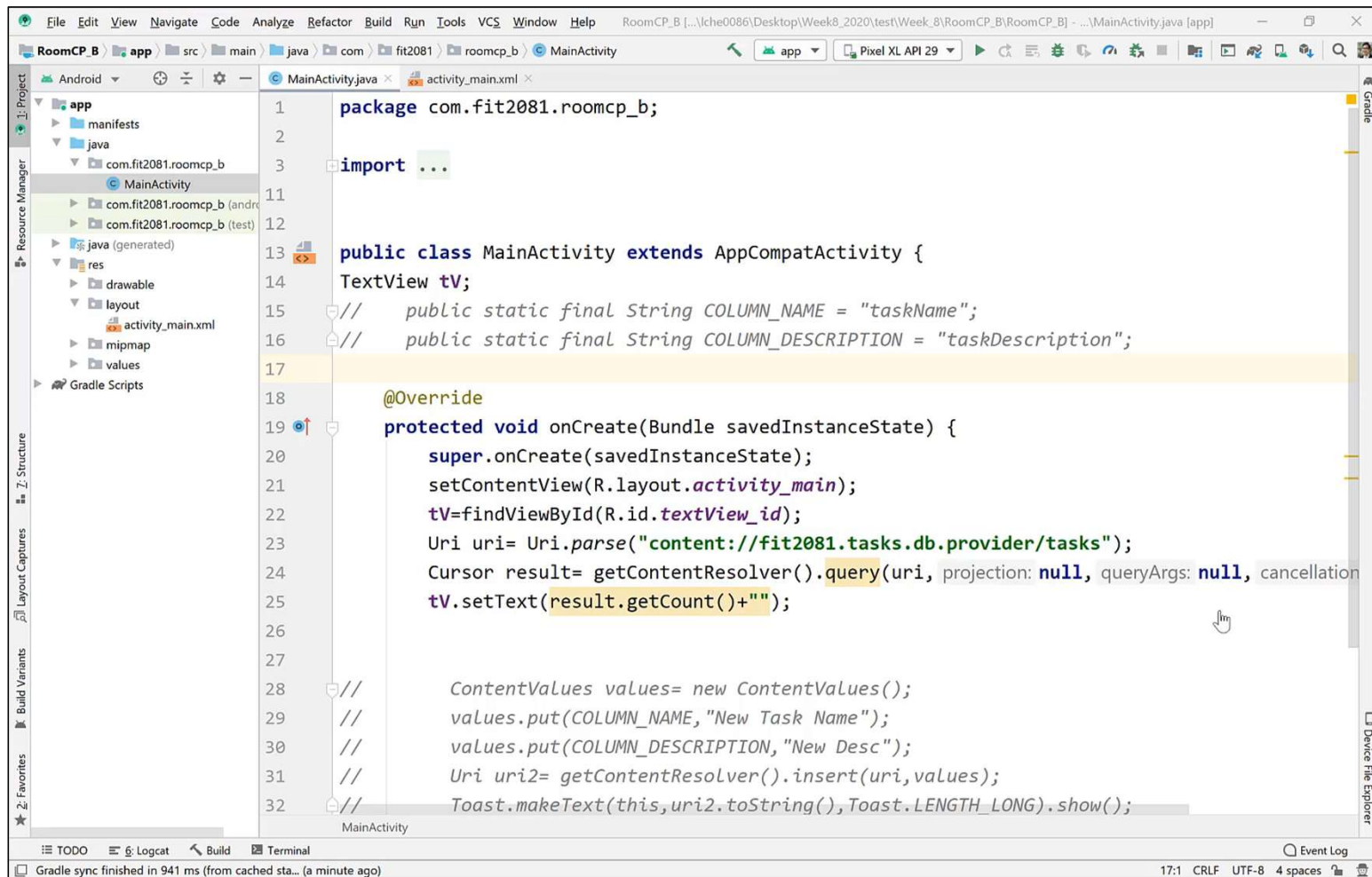
Video 1: Content Provider – To share database with other apps

1) Please play the video (32 minutes 01 seconds)



Video 2: Content Resolver – To access database from other apps

1) Please play the video (23 minutes 49 Seconds)

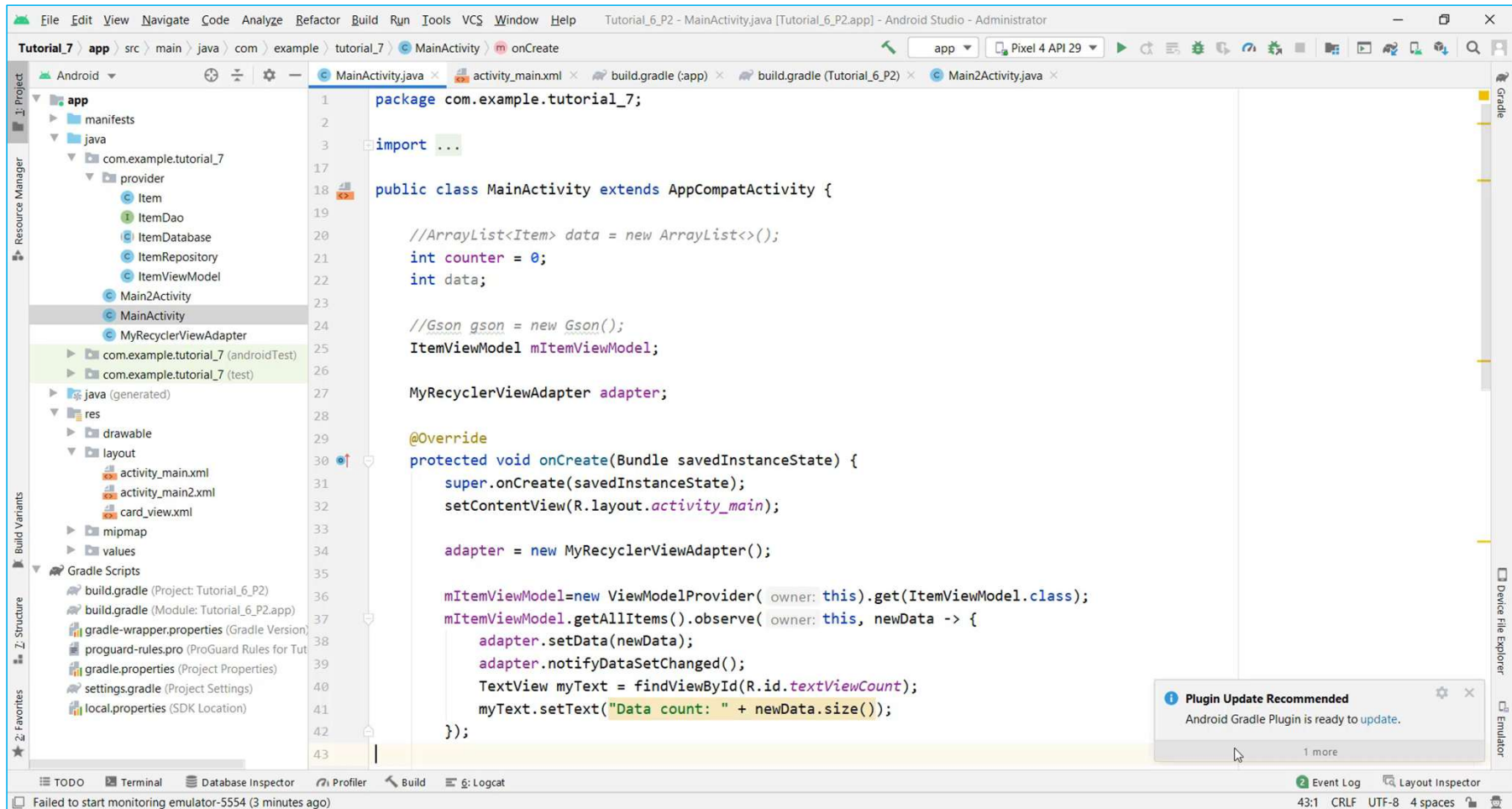


```
1 package com.fit2081.roomcp_b;
2
3 import ...
4
5
6
7
8
9
10
11
12
13 public class MainActivity extends AppCompatActivity {
14     TextView tv;
15     // public static final String COLUMN_NAME = "taskName";
16     // public static final String COLUMN_DESCRIPTION = "taskDescription";
17
18     @Override
19     protected void onCreate(Bundle savedInstanceState) {
20         super.onCreate(savedInstanceState);
21         setContentView(R.layout.activity_main);
22         tv=findViewById(R.id.textView_id);
23         Uri uri= Uri.parse("content://fit2081.tasks.db.provider/tasks");
24         Cursor result= getContentResolver().query(uri, projection: null, queryArgs: null, cancellation
25         tv.setText(result.getCount()+"");
26
27
28         // ContentValues values= new ContentValues();
29         // values.put(COLUMN_NAME,"New Task Name");
30         // values.put(COLUMN_DESCRIPTION,"New Desc");
31         // Uri uri2= getContentResolver().insert(uri, values);
32         // Toast.makeText(this,uri2.toString(),Toast.LENGTH_LONG).show();
```

Video 3: Firebase (Manipulate cloud database)

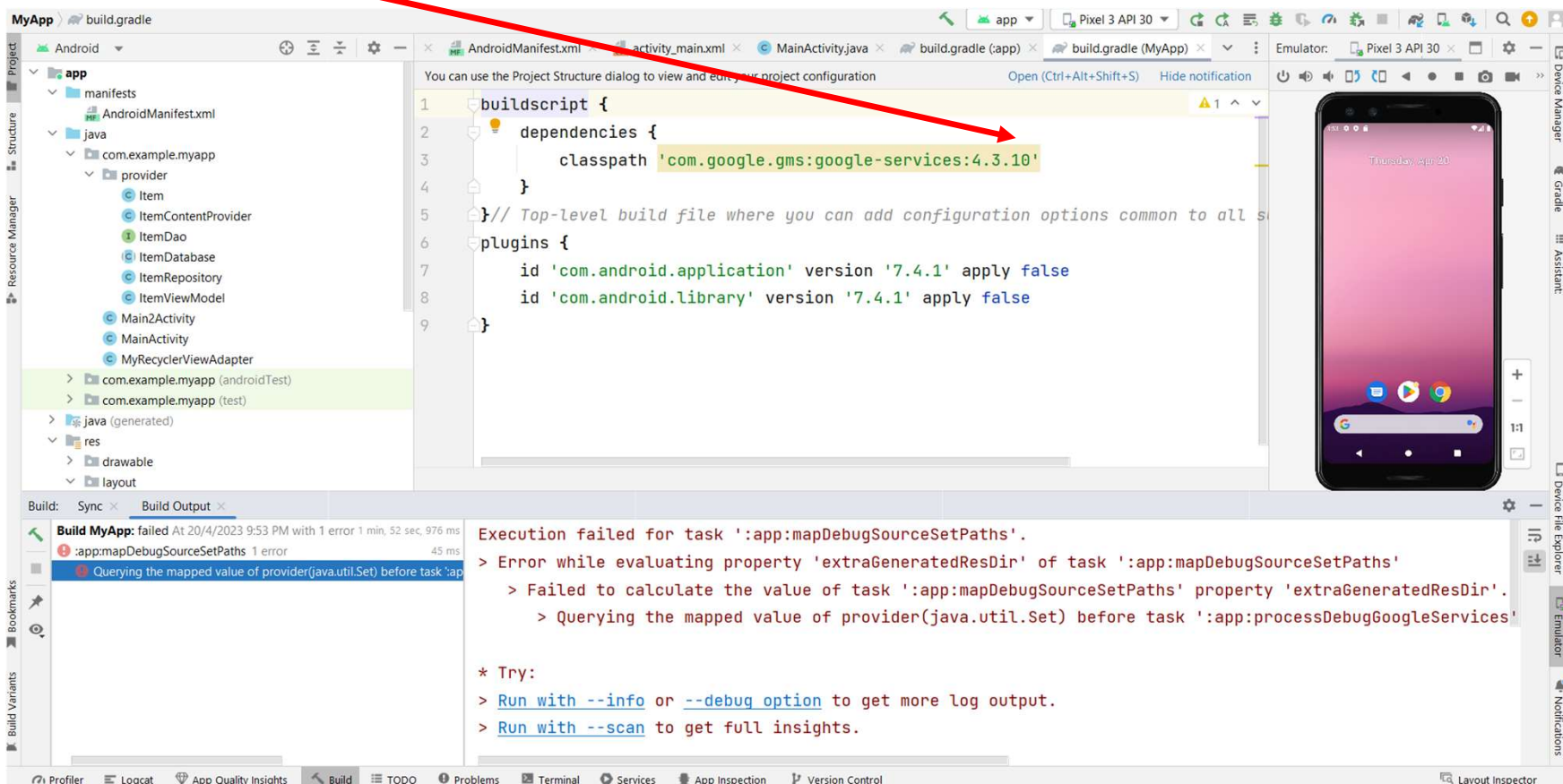
1) Please play the video (18 minutes 43 Seconds)

***Please uninstall and re-install your application if your firebase is not being able to be updated**



Trouble shooting in Firebase

1) If you experience the following errors, please update the 'com.google.gms:google-services:4.3.10' to 'com.google.gms:google-services:4.3.15'



Lab time!



Lab Instructions

Task 1- Content Provider and Resolver

Add the following features to the Books Library application you developed in the previous week:

1. The app should export its database to other applications by implementing the content provider class.
2. The content provider authority should be "fit2081.app.YOUR_FIRST_NAME".

***For reference, see TasksDB-Content Provider app in Week 8 Supplementary Material.**

To test your work, develop another application, "BookLib2: Content Resolver", that should do the following:

1. Insert a new Book with predefined random values.
2. Retrieve the current number of books in the database and display it in a text view.

Note: don't forget to change the authority in BookLib2: Content Resolver App.

*** For reference, see TasksDB-Content Resolver app in Week 8 Supplementary Material**

Lab Instructions

Task 2 - Save Books in the Cloud

The current implementation saves all the Books persistently in a local database. There is a need to push every new Book to the cloud.

- Each time a new Book is added to the local database, the app must push that Book to the Google Firebase database.
- If the Navigation menu option "Remove All Books" is selected, all Books in the Google Firebase database must also be removed.

*** For reference, see Chat or Weather apps in Week 8 Supplementary Material.**

Expected Output

The screenshot shows a web browser displaying a Moodle page for Monash University. The page title is "FIT2081 S1 2023 - Ed Lessons". The breadcrumb trail is "Lessons > Slides > Lab Specifications". The page content is titled "Lab Specifications" and includes the following sections:

- Lab Tasks and Marking Rubric**: A sidebar menu with items: Lab Specifications (checked), Expected Output (checked), and Marking Rubric.
- REMEMBER**: A yellow box with a warning icon stating: "You MUST upload your source code to Moodle at least ONE HOUR before your lab time. Failure to do so may incur a penalty (50% will be deducted)".
- Be aware that using the output from AI models without appropriate acknowledgement may constitute academic misconduct.**: A yellow box with a warning icon.
- Task 1: Content Provider and Resolver**: A section with the instruction: "Add the following features to the Books Library application you developed in the previous week:" followed by a list:
 1. The app should export its database to other applications by implementing the content provider class.
 2. The content provider authority should be "fit2081.app.YOUR_FIRST_NAME".A blue information box follows: "For support, see TasksDB-Content Provider app in Week 8 Supplementary Material."
- To test your work, develop another application, "BookLib2: Content Resolver", that should do the following:**: A section with a list:
 1. Insert a new Book with predefined random values.
 2. Retrieve the current number of books in the database and display it in a text view.A note follows: "Note: don't forget to change the authority in App(B)". A blue information box follows: "For support, see TasksDB-Content Resolver app in Week 8 Supplementary Material."
- Task 2: Save Books in the Cloud**: A section with the instruction: "The current implementation saves all the Books persistently in a local database. There is a need to push every new Book to the cloud." A blue information box follows: "Each time a new Book is added to the local database, the app must push that Book to the Google Firebase."

***The tutorial classes are cancelled but please join the consultation session (any of Dr. Vee's tutorial sessions) ONLY if you have any queries or issues regarding the lab tasks.

Thank you!