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CSE-A
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LAB-8

Android Zip:
https://drive.google.com/file/d/1zHSkdfzdQoJ2J2MAcHd6IlcWNXNiyxas/view?usp=sharing

Application Apk:
https://drive.google.com/file/d/1HjyzwTXNOFip0tgY38zgubR1Q4dqYIgu/view?usp=sharing

Mobile Application Development Laboratory – 8

Experiment Name: Working With Sqlite database, Action Bar and Widgets.

Date: 12-04-2021

Aim: Design an Android application using Android Studio with the following specifications.

i) In an activity, have text boxes, textviews, to collect the information such as Product name, product id, MRP, Price and add button. Upon clicking the button, add the details into the sqlite database redirect to another activity and display all product information in the database.

ii) Have 3 action bar menu items for displaying all product information, to display the given product id information and edit the particular product id information.

iii) Display the list of products available using a widget on the home screen. Have a button with the widget to open the app.

Description of App: (The detailed working can be seen in screenshots)

1. We have the main Activity where we take input regarding product details if all the details are valid, we store this data in a database, and then it will redirect the user to display all activity where all products are visible.

2. In the display all activity, all the registered products data.

3. In-display one activity, the user has to enter the product id, and it searches in the database for that specific id, and if there is a product present, it will show all the details to the user.

4. In the update one activity, the user has to enter the product id, and it searches in the database for that specific id, and if it's present, the user can change the name, price, and MRP field.

5. The 3rd part is the widget, where it will show products, and when the user clicks on it, they will be redirected to display all activity directly. Whenever any user adds or updates a product, then it will change it in the widget automatically.

Note: Whenever a user does something unexpected like not giving input etc, then I flash a message.

Device Specifications:
Both the app run on min SDK version of 16 (so anything above API 16 - Android 4.1 - Jelly Bean would run this app which is 99.8% of devices). Currently, I have run it on Pixel API 30 for outputs. Only default libraries were used for making any app and nothing additional.

Name: Pixel_3
Resolution: 1080 X 2220
API: 30
Target: Android 11.0
hw.lcd.height: 2220
hw.accelerometer: yes
hw.device.manufacturer: Google
hw.lcd.width: 1080
hw.lcd.density: 440
hw.cpu.ncore: 6
hw.sensors.proximity: yes
hw.sensors.orientation: yes
hw.gpu.enabled: yes

Technical Concepts Learnt:

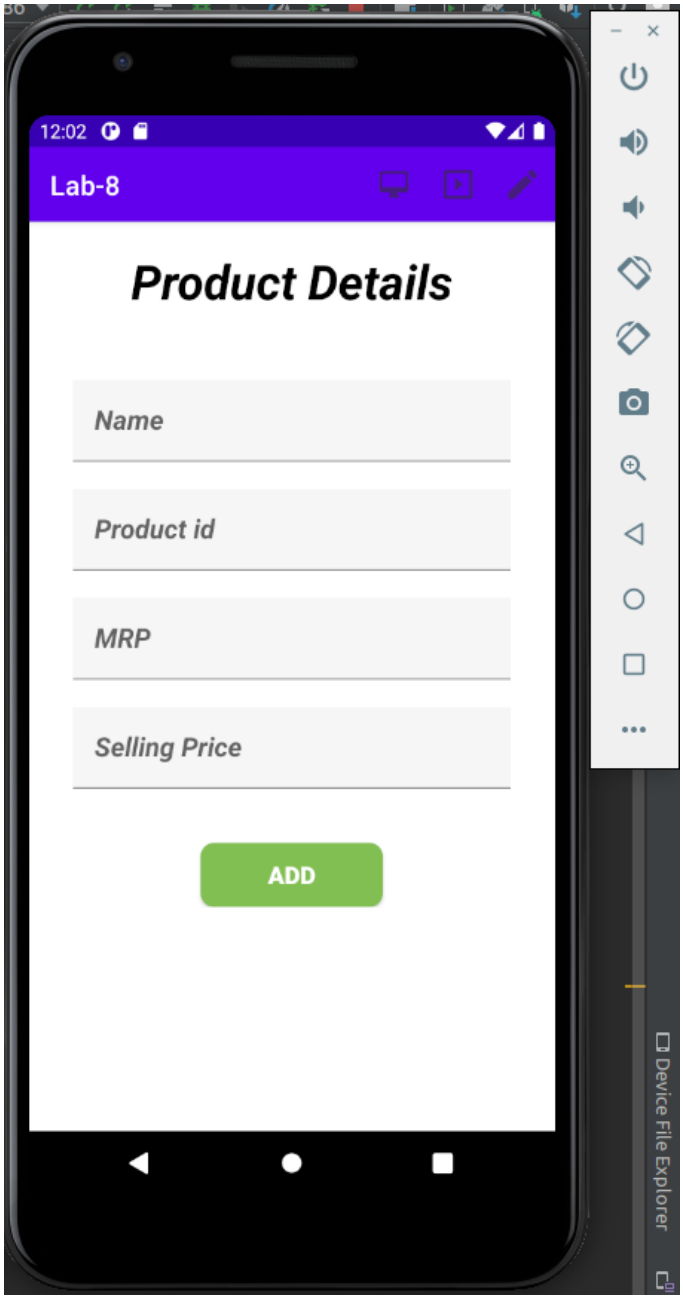
- **Ui perspective:** I learned to work with, ScrollView, TextView, Button, ConstraintLayout, background colours, **Material.io** for styling, icons.

- **Application Perspective:**

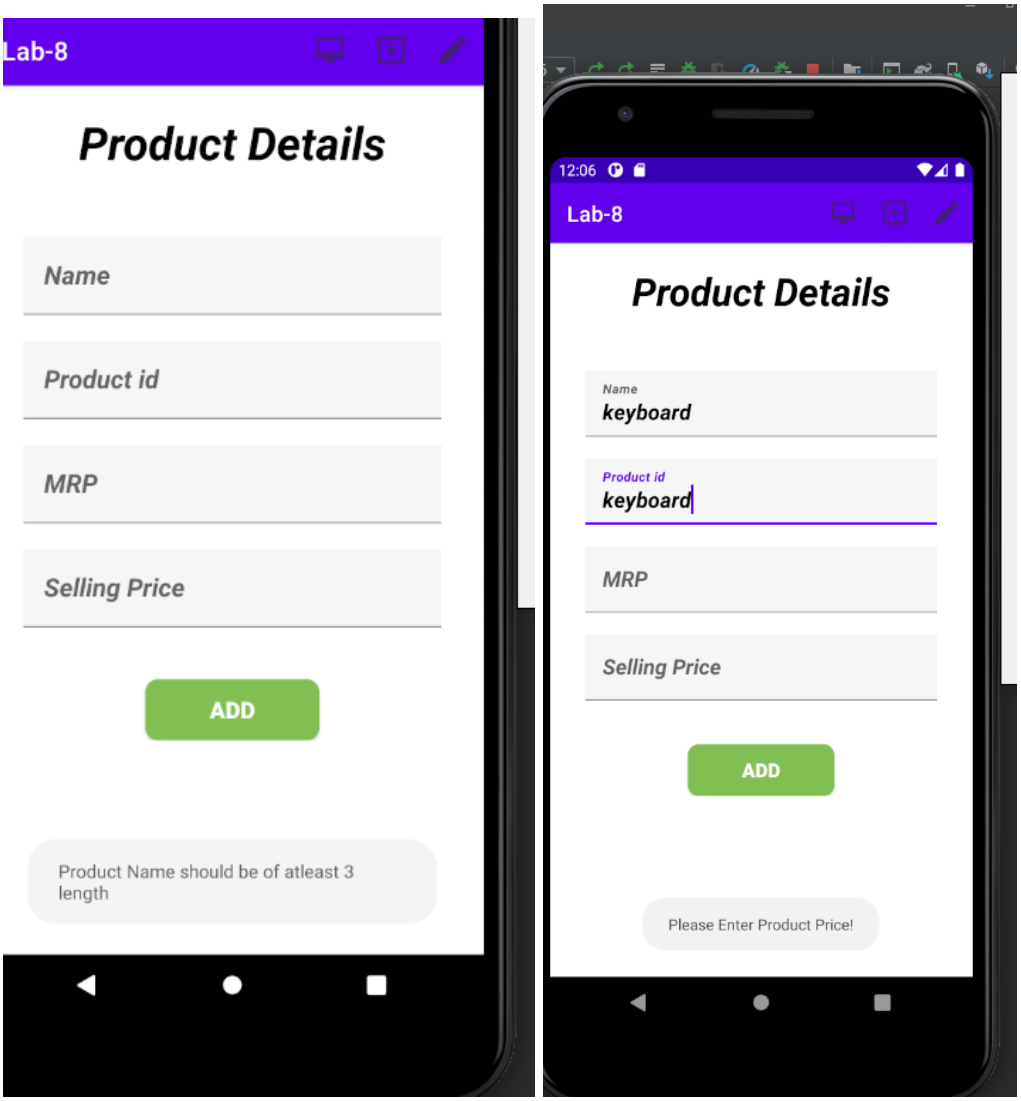
1. To Work with **SQLite Database, Action bar menu and Widgets .**
2. To Work with **pending intents** to handle onClick for widgets.
3. Handle exceptions using switch case and prompting errors using Toasts.
4. I am checking if the valid input is provided or not.

Source Code: The link of my app zip
(https://drive.google.com/file/d/1zHSkdfzdQoJ2J2MAcHd6IlcWNXNiyxas/view?usp=sharing**)**

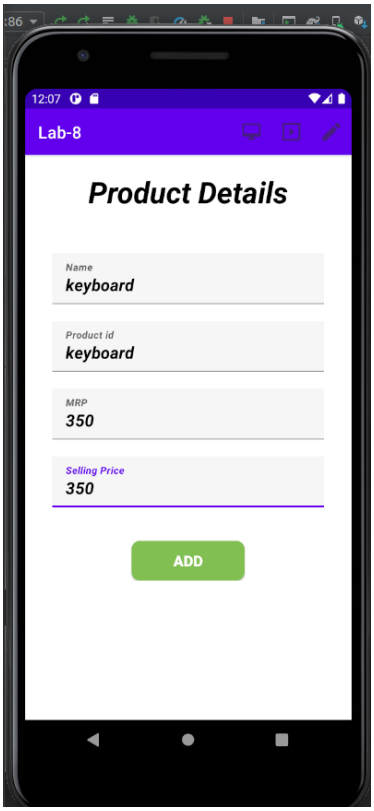
Screenshots:
Start:



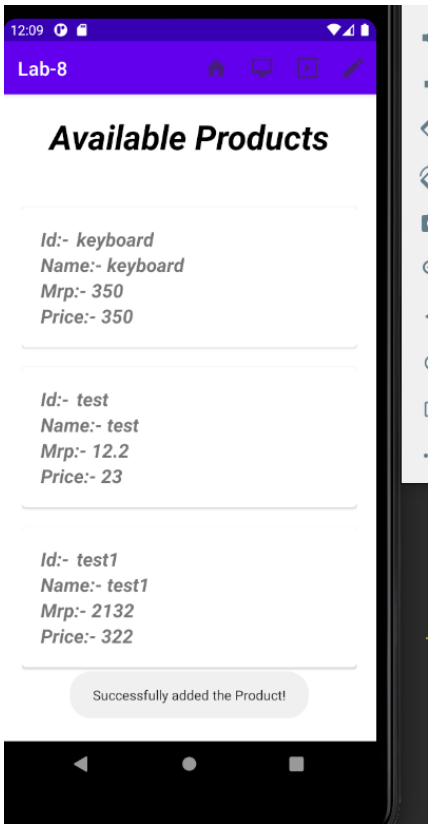
If the user doesn’t enter valid inputs, I’ll prompt an error message.



Now Entering Valid Input:



After Valid Inputs: (It will redirect to display all activity where all the products will be present)

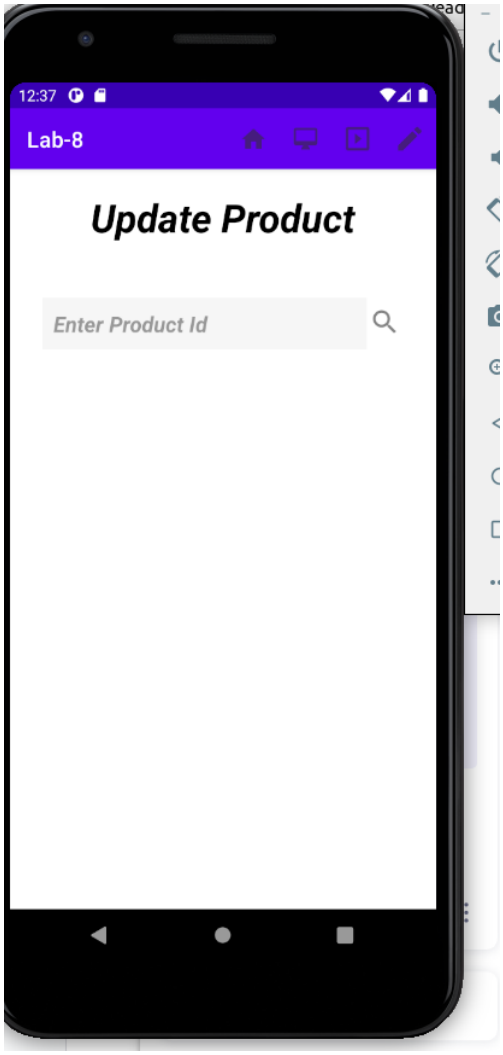


 **Represents Display All -> OnClick it'll redirect to activity where all products will be shown**

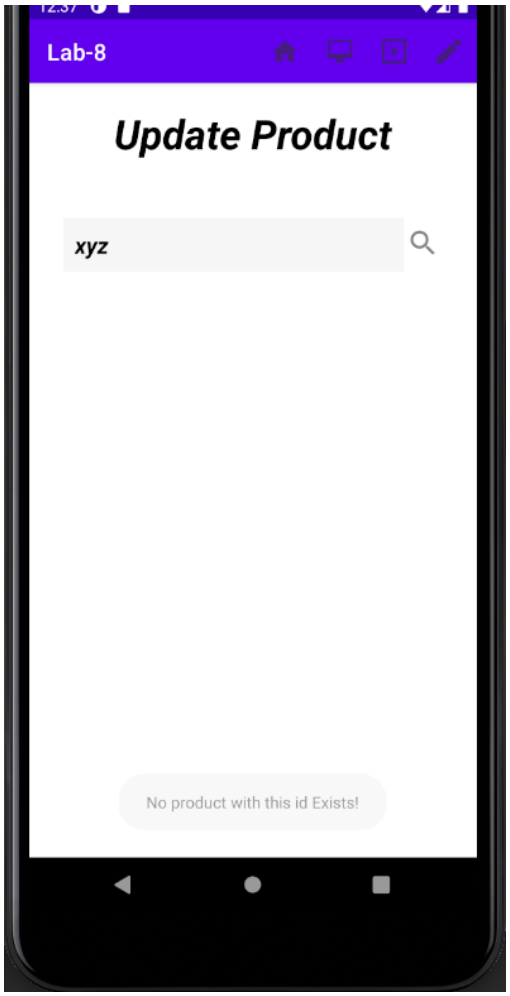
 **Represents Display One Product with the given Id**

 **Represents Update One Product with the given id.**

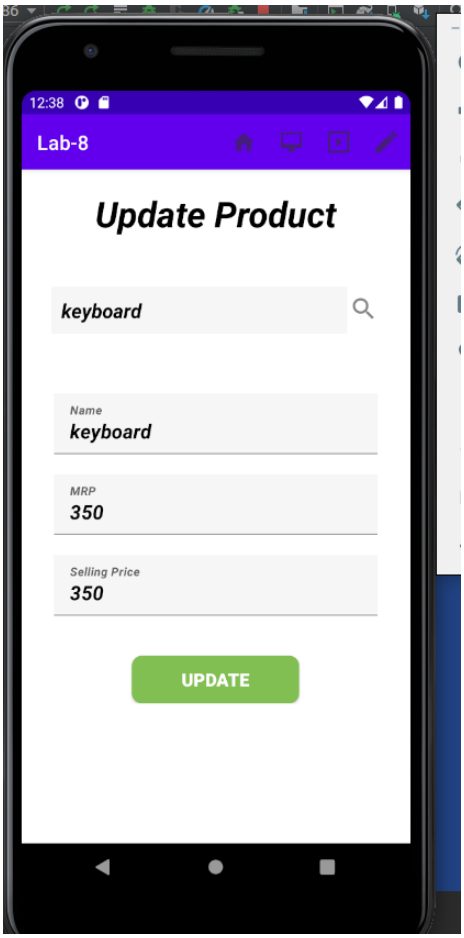
If I click on this  **, it will redirect me to the Update Product activity, and if I give my product id, and edit its details.**



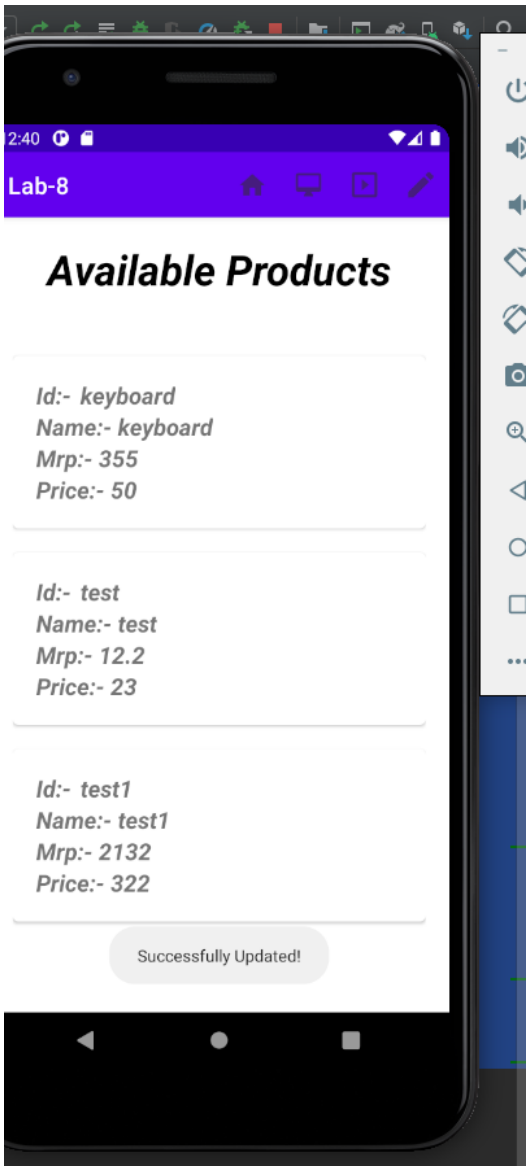
If I enter an id that doesn't exist:



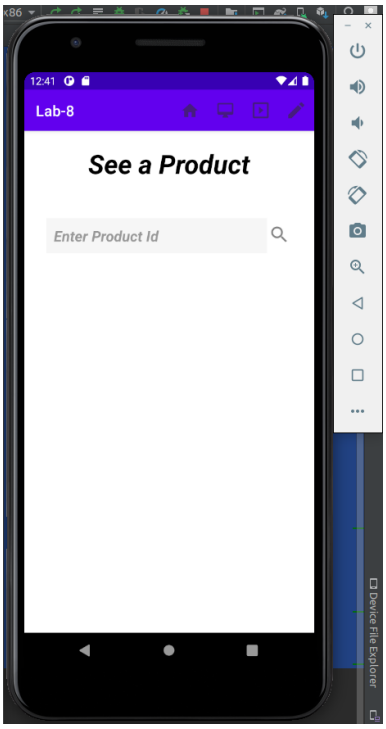
If I enter a valid id that is present in the database:



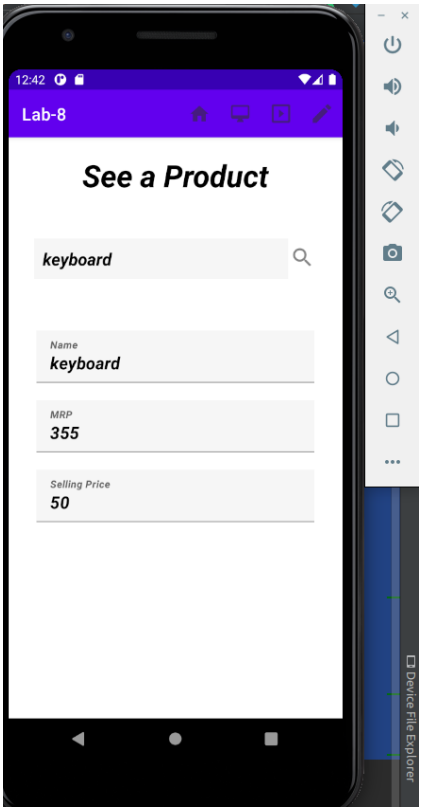
Now I'll change MRP to 355 and price to 50 (The value is updated)



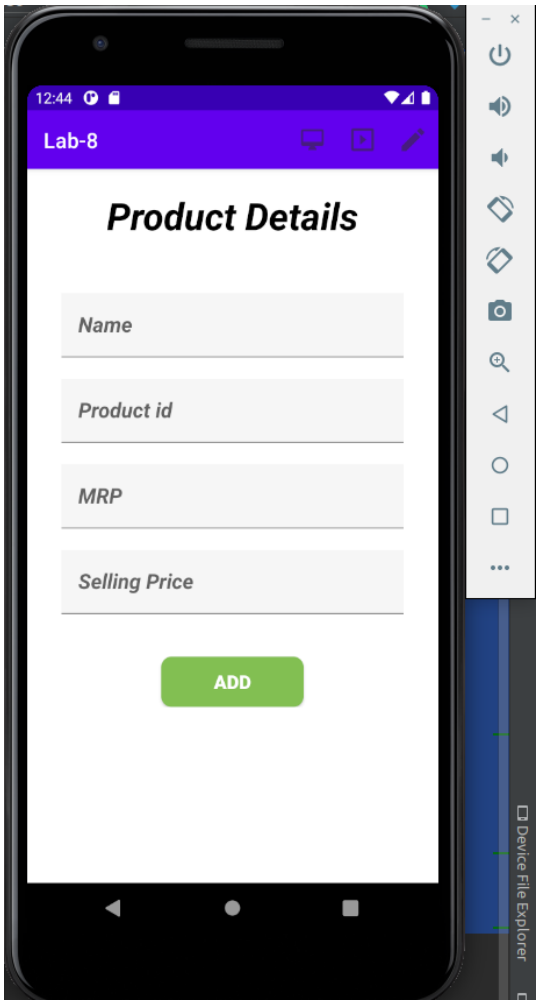
Now I'll click on  **that is display one.**



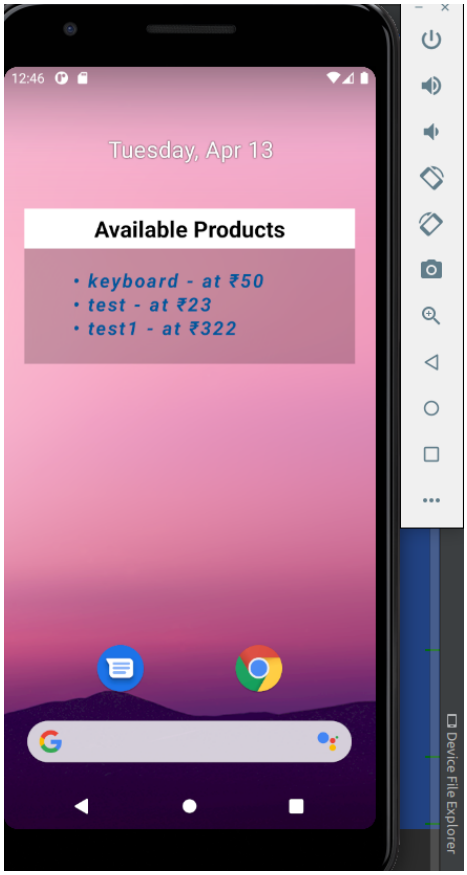
If I enter the correct key, then I can see the details of a single product.



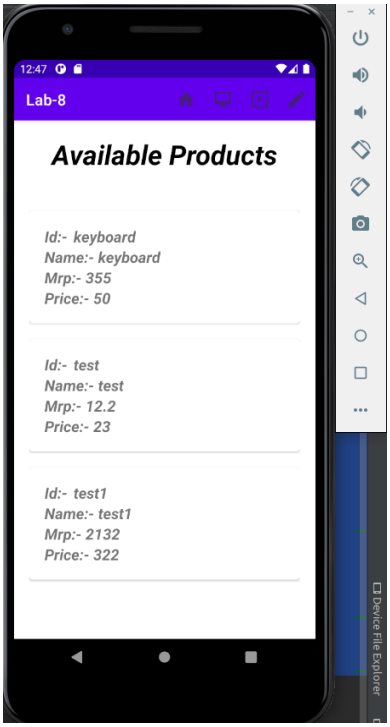
If I click on it  , It'll take me back to the product input activity.



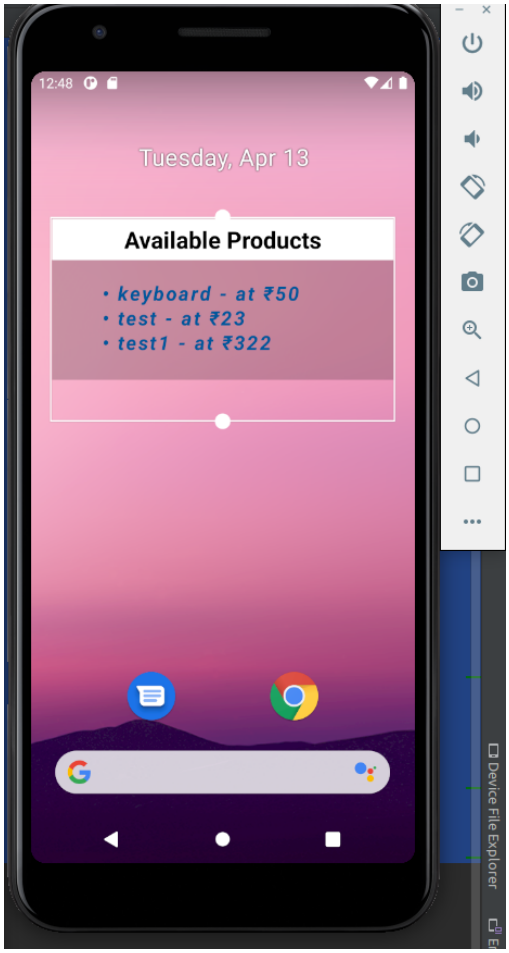
Widgets



If I click on it, it will redirect me to all product list activity.



I can also resize the widget:



Outcomes: The app was developed and run without any bugs/crashes, and we learned to work with Widgets in action.

Practical Applications:

1. Can design an application that shows the live score of sports matches on the widget.
2. Can make an application easier to use and interact using widgets so that user don't need to open the application. They can just get their work done from the widget.