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Nicholas Pippo 30679633 | Sierra Williams 22466205

Erfan Kazemi 53862363

Project Description: COSC 310 Lab 2
Group 29

Our solution is a Coffee shop inventory management system. The goal of our system is to allow different users to access and adjust inventory levels or products, reports on historical sales, as well as automatically place orders when inventory is low. We plan to have three user account types, managers who are able to see reports, admins that can see admin settings, and employees which have the least access and can only edit inventory and see sales records. The app will be developed for a mobile phone with later functionality for tablets.

The github repository is located at:
<https://github.com/Team29Cosc310/assignment2>

The Team has decided to move forward with an agile, incremental development life cycle. This is due to uncertainty on adding all the desired features in such a short timeline. Another consideration is that we will be better able to refine the product features as development progresses.

Our Incremental development includes the following three main phases for concurrent activities.

- **Specification**
  - User Requirements
    - Login
    - Differentiated features for user types
  - System requirements
    - Find database to store data (decided on Firebase)
    - Android studio for development
  - Requirements checking
- **Development (design and implementation)**
  - Create Repository (github)
  - Design app interface

- - - Consistent colour palette
    - Consistent interface design
  - Develop features individually, combine branches
    - User functionality
    - Item details
    - Sales reports
    - Low Stock Warning
    - Auto ordering
- **Validation**
  - Test database and authentication
    - Created new accounts and logged in with them
    - Wrote to database, read changes to app
  - Test features
    - Individually tested features while coding
    - Features checked after each branch merging
  - Customer tests whether system does what is needed

Work Breakdown chart (WBS)

The work breakdown structure below describes the list of tasks and subtasks assigned to each member of the team, along with the timeline for the completion of those tasks as well as the task dependencies. The parent tasks represent the initial five features that are crucial to our project, while the subtasks represent work needed to implement those features.

Andrei was assigned tasks related to authentication of the app. This involved setting up a login page and a settings page, as well as setting up Firebase to perform user authentication. Various features were enabled/disabled based on the logged in user's role. For example, the admin would have access to features that an employee might not have access to, and these features were made visible only to admin users. Andrei also worked on the project report (SDLC section and images of case tools) and completed the readme file.

Ahmed was assigned tasks involved in report generation. Various sales data and employee information was saved in Firebase, including the number of drinks sold and operation costs, as well as number of employee working and

employee hours and pay. The app has a report activity page that would display updated statistics data by reading from the database.

Sierra worked on displaying all the item details for the coffee shop as well as the designs of the pages that show the available items. This includes hot and cold drinks such as coffee, tea, as well as any special drinks offered seasonally. The initial design was done using Figma, and this design was added in the project, including colours and font. She also worked on the video report that describes the operation and functionality of our application.

Nicholas worked on the auto-ordering feature and project report. The auto-ordering system would place a bulk order for items needed to make the products, whenever the available stock becomes low. He configured the database and included a collection for all the necessary components that may need to be purchased. This includes ingredients for the drinks as well as items such as cups, lids and sleeves.

Erfan worked on the low-stock warning and UI. The low-stock warning system is a dependency to the auto-ordering system as it would send the signal that a new order will have to be placed. The warning system would indicate to the user that the stock has become low, which can prompt the user to place a new order. Erfan also worked on the UI elements, adding colours to various elements to improve the aesthetic quality of the app.

Task View:

Tasks	Assigned To	Esti... Hours	Actual Hours	Start Date	End Date	Health	Status
settings	AZ Andrei Zipis	5	15	12/10/22	24/10/22	🟡	In Progress
readme	AZ Andrei Zipis	1	1	21/10/22	24/10/22	🟢	Complete
authenticate users through firebase	AZ Andrei Zipis	3	3	08/10/22	12/10/22	🟢	Complete
project report	AZ Andrei Zipis	0.5	0.5	24/10/22	24/10/22	🟢	Complete
– Reports	AS Ahmed Shahriyar	7	14	05/10/22	20/10/22	🟡	Complete
Create report activity page	AS Ahmed Shahriyar	3	3	15/10/22	17/10/22	🟢	Complete
project report	AS Ahmed Shahriyar	1	1			🟢	Complete
Read from database and update statistics	AS Ahmed Shahriyar	4	10	18/10/22	20/10/22	🟢	Complete
– Item Details	Sierra Williams	12	14	05/10/22	21/10/22	🟢	Complete
create item details page design	Sierra Williams	4	3	07/10/22	15/10/22	🟢	Complete
input item details	Sierra Williams	5	5	16/10/22	21/10/22	🟢	Complete
Video report	Sierra Williams	3	6	20/10/22	24/10/22	🟡	In Progress
– Low Stock Warning	Erfan Kazemi	5	15	16/10/22	23/10/22	🟢	Complete
Alert	Erfan Kazemi	3	8	16/10/22	20/10/22	🟢	Complete
UI	Erfan Kazemi	2	7	20/10/22	21/10/22	🟢	Complete
– Auto-Ordering	Nicholas Pippo	9	16	05/10/22	14/10/22	🟡	In Progress
Configure DB	Nicholas Pippo	2	4	18/10/22	20/10/22	🟢	Complete
Create Order Report	Nicholas Pippo	5	10	18/10/22	20/10/22	🟢	Complete
Integrate with low stock warning	Nicholas Pippo	2	2			🟡	In Progress

Card View:

Andrei Zipis (6)	Ahmed Shahriyar (4)	Sierra Williams (4)	Erfan Kazemi (3)	Nicholas Pippo (4)
Authentication 05/10/22 14/10/22 ● Complete ☰ 5	**Reports** 05/10/22 20/10/22 ● Complete ☰ 3	**Item Details** 05/10/22 21/10/22 ● Complete ☰ 3	**Low Stock Warning** 16/10/22 23/10/22 ● Complete ☰ 2	**Auto-Ordering** 05/10/22 14/10/22 ● In Progress ☰ 3
Authentication **create login page** 05/10/22 08/10/22 ● Complete 🔔	*Reports* **Create report activity page** 15/10/22 17/10/22 ● Complete	*Item Details* **create item details page design** 07/10/22 15/10/22 ● Complete	*Low Stock Warning* **Alert** 16/10/22 20/10/22 ● Complete	*Auto-Ordering* **Configure DB** 18/10/22 20/10/22 ● Complete
Authentication **settings** 12/10/22 24/10/22 ● In Progress	*Reports* **project report** ● Complete	*Item Details* **input item details** 16/10/22 21/10/22 ● Complete	*Low Stock Warning* **UI** 20/10/22 21/10/22 ● Complete	*Auto-Ordering* **Create Order Report** 18/10/22 20/10/22 ● Complete
Authentication **readme** 21/10/22 24/10/22 ● Complete	*Reports* **Read from database and update statistics** 18/10/22 20/10/22 ● Complete	*Item Details* **Video report** 20/10/22 24/10/22 ● In Progress	+	*Auto-Ordering* **Integrate with low stock warning** ● In Progress
Authentication **authenticate users through firebase** 08/10/22 12/10/22 ● Complete	+	+		+

Gantt chart of task and related tasks

Our development was largely independent as the Gantt chart will show, due to this there were few dependencies. However there were two dependencies that can be seen in the Gantt chart. The first is the need for a database to be setup and users created. Since this step is required for the rest of development to proceed it was correctly done first. We can see that it was largely completed by the weekend of the 9th and after which development increased. The second dependency was filling the database with our product items. This was completed around the same time as the user creation so there was little delay in our ability to continue on the project from the weekend of the 9th to completion. Another dependency was that the low stock alert could not be completed until the auto ordering functionality was completed. The auto
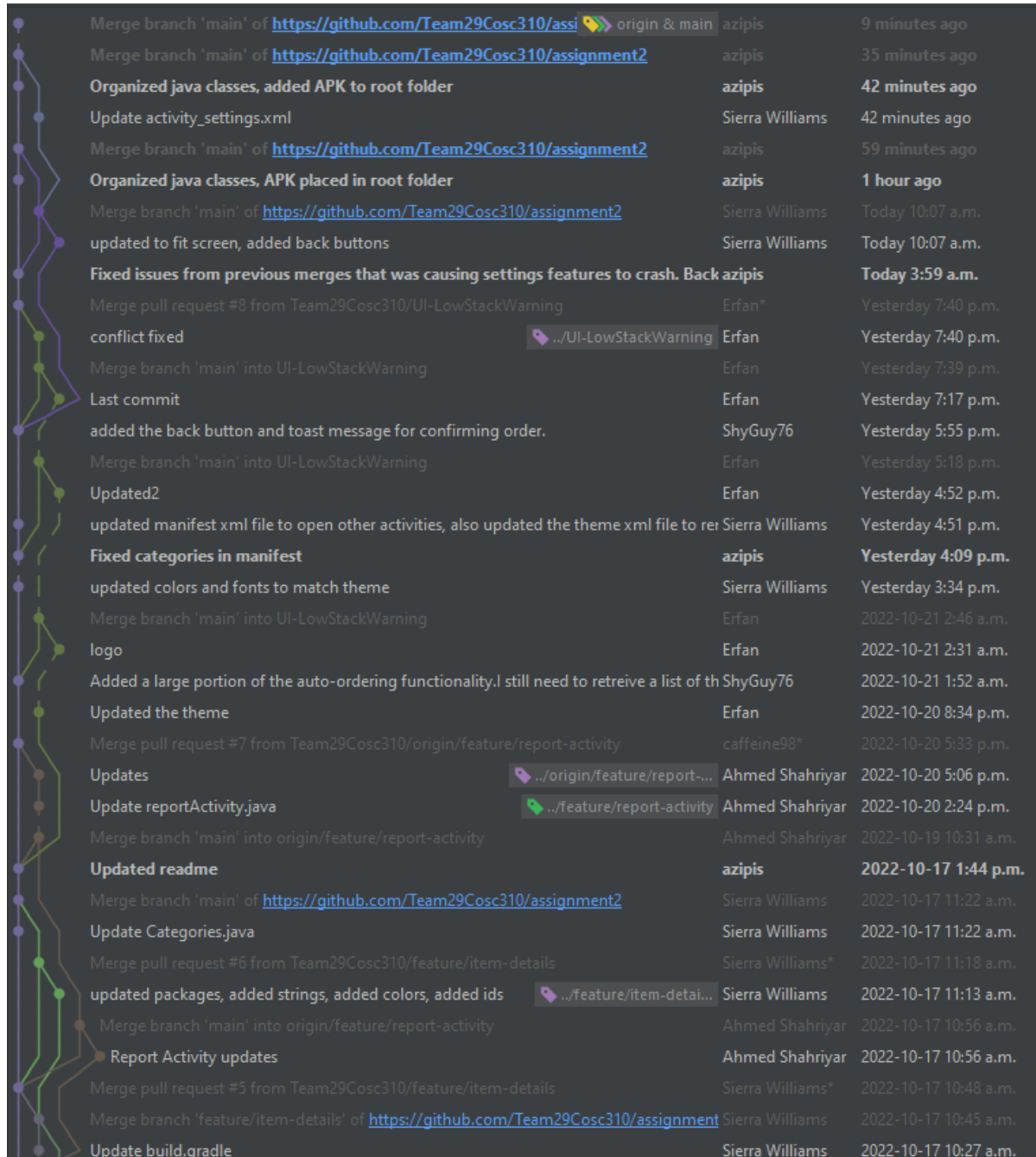
ordering functionality was completed late into the project and so the low stock warning was also pushed back due to this dependency.

Tasks	Assigned To	Esti... Hours	Actual Hours	Oct 2	Oct 9	Oct 16	Oct 23
− Authentication	AZ Andrei Zipis	11	22			Authentication	
create login page	AZ Andrei Zipis	2	3		create login page		
settings	AZ Andrei Zipis	5	15				settings
readme	AZ Andrei Zipis	1	1				readme
authenticate users through firebase	AZ Andrei Zipis	3	3		authenticate users through firebase		
project report	AZ Andrei Zipis	0.5	0.5				project report
− Reports	AS Ahmed Shahriyar	7	14			Reports	
Create report activity page	AS Ahmed Shahriyar	3	3			Create report activity page	
project report	AS Ahmed Shahriyar	1	1				
Read from database and update statistics	AS Ahmed Shahriyar	4	10				Read from database and update statistics
− Item Details	Sierra Williams	12	14			Item Details	
create item details page design	Sierra Williams	4	3			create item details page design	
input item details	Sierra Williams	5	5				input item details
Video report	Sierra Williams	3	6				Video report
− Low Stock Warning	Erfan Kazemi	5	15				Low Stock Warning
Alert	Erfan Kazemi	3	8				Alert
UI	Erfan Kazemi	2	7				UI
− Auto-Ordering	Nicholas Pippo	9	16			Auto-Ordering	
Configure DB	Nicholas Pippo	2	4				Configure DB
Create Order Report	Nicholas Pippo	5	10				Create Order Report
Integrate with low stock warning	Nicholas Pippo	2	2				

Branching Structure of code

Please note this does not show the complete branching structure as it was too long to fit on the page. However this should give a good grasp into how our branches looked.

Pull Requests and Issues

Pull requests and issues were mostly solved outside of GitHub (through Discord), or individually. As a result there were not too many incidents to demonstrate.

September 23, 2022 – October 23, 2022   Period: 1 month ▾

Overview

8 Active pull requests	0 Active issues

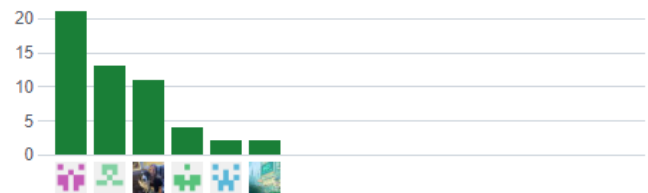| ⅄ **8** Merged pull requests	⇅ **0** Open pull requests	⊘ **0** Closed issues	⊙ **0** New issues

Excluding merges, **6 authors** have pushed **53 commits** to main and **53 commits** to all branches. On main, **0 files** have changed and there have been **0 additions** and **0 deletions**.

⅄ **8 Pull requests merged by 4 people**

⅄ **UI low stack warning**
#8 merged 1 hour ago

⅄ **Added Report Activity and Retrieve Statistics data from Firebase**
#7 merged 3 days ago

⅄ **updated packages, added strings, added colors, added ids**
#6 merged 6 days ago

⅄ **Feature/item details**
#5 merged 6 days ago

⅄ **Users**
#4 merged 6 days ago

⅄ **Users**
#3 merged 10 days ago

⅄ **Users**
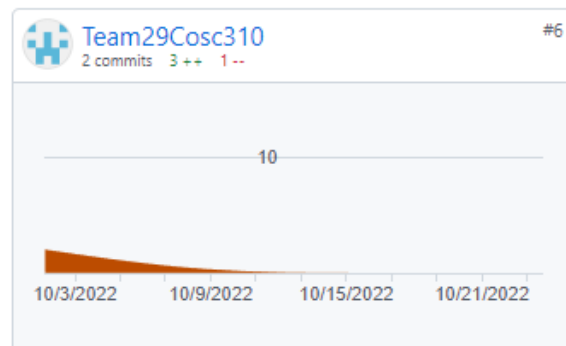#2 merged 11 days ago

⅄ **Added login functionality**
#1 merged 15 days ago

Project Commits

Oct 2, 2022 – Oct 24, 2022

Contributions: Commits ▾

Contributions to main, excluding merge commits and bot accounts

erfan2ubc #1 21 commits 621 ++ 434 --	**azipis** #2 20 commits 5,926 ++ 2,862 --
sierrawillliams #3 13 commits 13,590 ++ 107 --	**caffeine98** #4 4 commits 399 ++ 88 --
ShyGuy76 #5 2 commits 329 ++ 30 --	**Team29Cosc310** #6 2 commits 3 ++ 1 --
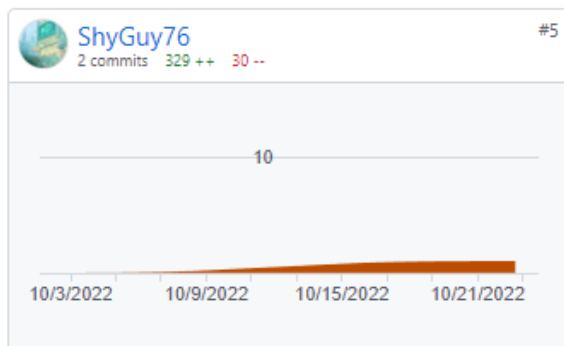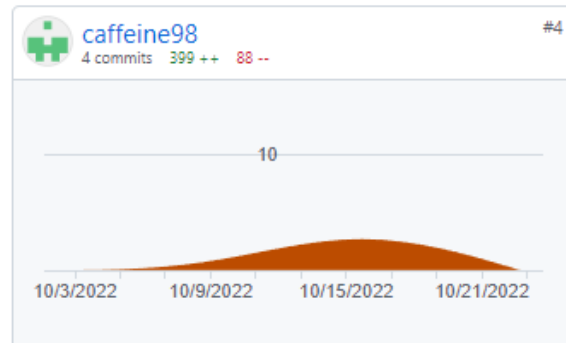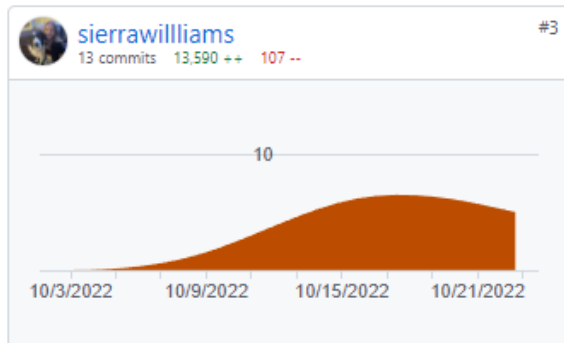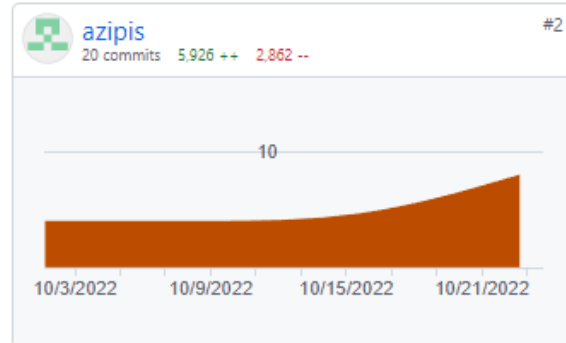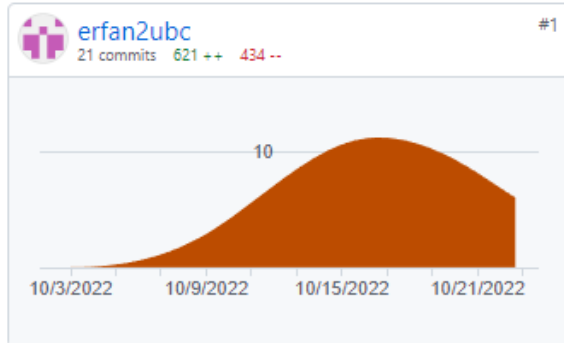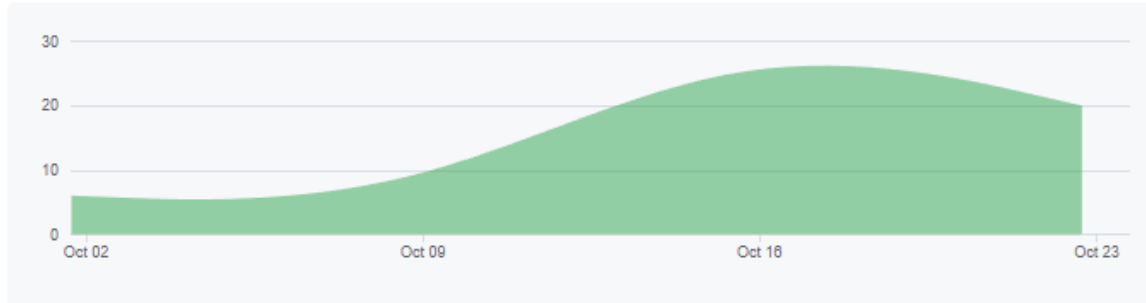
Project Additions

Oct 2, 2022 – Oct 24, 2022

Contributions to main, excluding merge commits and bot accounts

sierrawillliams #1
13 commits   13,590 ++   107 --

azipis #2
20 commits   5,926 ++   2,862 --

erfan2ubc #3
21 commits   621 ++   434 --

caffeine98 #4
4 commits   399 ++   88 --

ShyGuy76 #5
2 commits   329 ++   30 --

Team29Cosc310 #6
2 commits   3 ++   1 --
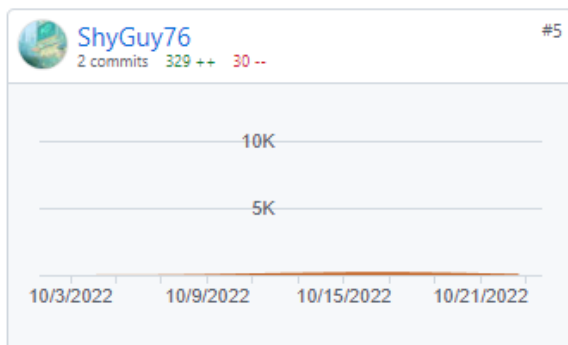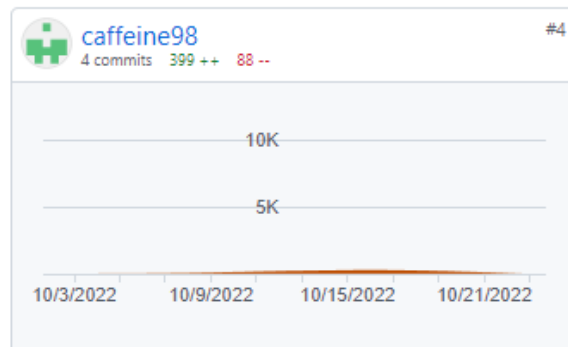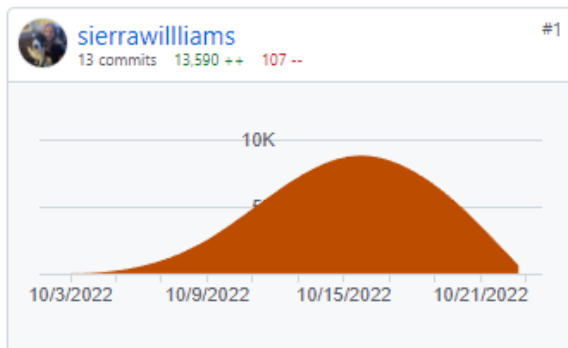
Limitations:

- Delete account and account data not implemented yet (team undecided whether feature should exist at all)
- Edit users not fully implemented yet
- Retrieving list of products that need resupplying
- Final order button not working yet
- An export report feature that will either save the report in the device, or send a copy of the report to an email address
- Hiding certain details of the report depending on the user's role
- Using stock items has not been implemented yet
- Re-ordering does not update database

Sample Output:
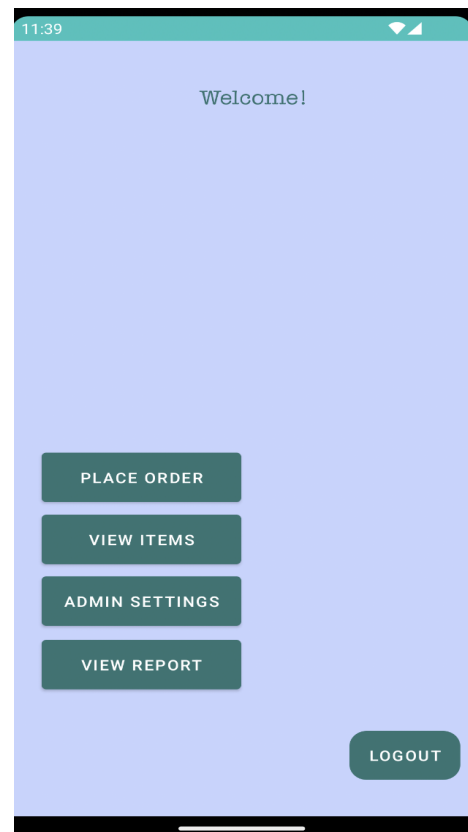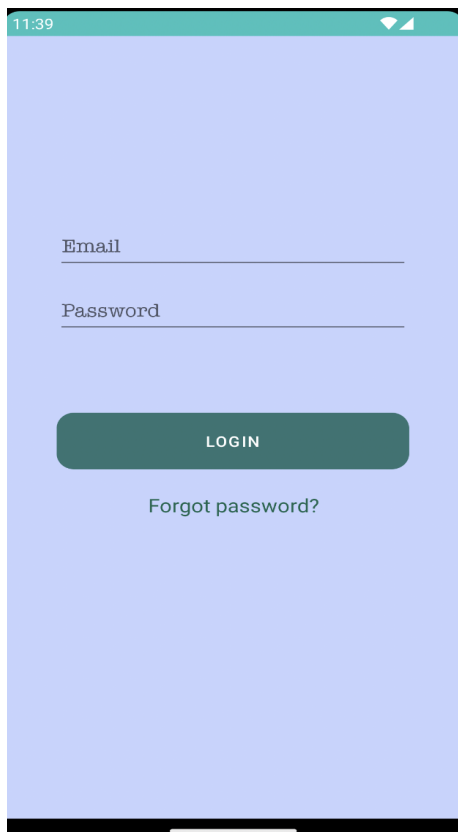
Edit Personal Info

First name

Erfan

Last Name

Kazemi

Email

erfan@example.com

Change password

••••••••

SUBMIT

Account Info:
Firstname: Erfan
Lastname: Kazemi
Email: erfan@example.com
Password: erfan123
Role: admin

EDIT ACCOUNT

EDIT USERS

CREATE ACCOUNT

DELETE ACCOUNT

SUBMIT

CREATE ACCOUNT

Email

Password

First Name

Last Name

Select role:

employee ▼

SUBMIT

Select A Category

HOT COFFEES

COLD COFFEES

Low stock warning

Please resupply chai:

CANCEL   ORDER NOW

COLD DRINKS

OTHER

Select A Category

BACK   CHECK

HOT COFFEES

COLD COFFEES

HOT DRINKS

COLD DRINKS

OTHER

11:39

BACK

tea
  Ordering 300
coffee
  Ordering 200
ice tea
  Ordering 100

CONFIRM

BACK

Sales and Operations Reports

Number of Drinks sold: 175

Rate of Orders (per hour): 21.875

Total Sales Revenue: 1050.0

Net Profit: 800.0

Number of Customers: 50

Number of Employees: 3

Employee wage per hour: 20.0

Employee work hours: 8.0

Total employee costs: 480.0