
Test Document

for

DigiCampus

Version 1.0

Prepared by

Group #: 1

Dishay Mehta	200341
Abhishek Pardhi	200026
Samarth Arora	200849
Ankur Kumar	200140
Shashwat Gupta	200923
Ananya Agrawal	200117
Girik Maskara	200387
Sarthak Kohli	200886
Aayush Kumar	200008
Aryan Vora	200204

Group Name: Achievers

dishaymehta952@gmail.com
abhipardhi326@gmail.com
samartharora03@gmail.com
ankurk04@gmail.com
guptashashwatme@gmail.com
ananyaagrawal704@gmail.com
girikmaskara552002@gmail.com
sarthak811kohli@gmail.com
aayushk0072@gmail.com
aryanvora23@gmail.com

Course: CS253

Mentor TA: Aman Aryan

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Revisions

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1 Introduction

The team adopted a manual testing strategy, we tested the functionalities of each page and documented their behavior.

Unit testing was conducted in parallel with the implementation, while Integration and System testing were conducted after the implementation was complete.

Two developers were the testers while the other two testers were independent.

No tool was used for testing.

2 Unit Testing

1. Login

The page is correctly rendered. Entered a valid username and password, the login page redirects to the correct page. Entering an invalid username and password, an error message is displayed.

Unit Details: Login

Test Owner: Aryan Vora

Test Date: 23-03-22

Test Results: Login works without errors.

Structural Coverage: Tested for correct and incorrect login details.

Additional Comments: *The unit works as expected.*

2. QR Code

The page is correctly rendered. On displaying the QR Code corresponding to Entry, the user is redirected to the respective page. If the user has not exited from a hall, an error message is displayed.

Unit Details: QR Code

Test Owner: Aryan Vora

Test Date: 23-03-22

Test Results: QR Code redirects successfully.

Structural Coverage: Tested for entry QR Codes when the user is not in a hall and when the user has not to exit from a hall.

Additional Comments: *The unit works as expected.*

3. Entry Portal

The Entry Page is correctly rendered. The Roll Number field only accepts integer inputs, the Laptop field accepts only a set of inputs listed in a dropdown menu. Both the fields are required and cannot be left blank.

Unit Details: Entry Portal

Test Owner: Aryan Vora

Test Date: 23-03-22

Test Results: The Entry Portal has fields accepting only the right format of data, one issue is that the roll number does not have a fixed number of digits, so we can a number of any length. However, this should not be an issue as we are checking if the roll number entered belongs to the hall or not.

Structural Coverage: Tested for entry portal.

Additional Comments: *The unit works as expected.*

4. Mess Extras

The page is rendered correctly. The Add Extras field has a list of items available in the mess. According to the quantity required one can add or subtract the number of items needed.

Unit Details: *Mess Extras*

Test Owner: Dishay Mehta

Test Date: 24-03-22

Test Results: The button works as expected and the quantity is initially zero and can't be negative.

Structural Coverage: Tested for Add Extras and depending on the number of times + and - are clicked and the quantity gets changed accordingly.

Additional Comments: *The unit works as expected.*

5. Mess Checkout

The page is rendered correctly. The total bill for extras is displayed. The checkout button works correctly and updates the data in the database.

Unit Details: *Mess Checkout*

Test Owner: Dishay Mehta

Test Date: 24-03-22

Test Results: The button works as expected and the page is reset after checking out.

Structural Coverage: Tested for Checkout and the total payable is added to the database of the respective profile, this change is reflected in the dashboard.

Additional Comments: *The unit works as expected.*

6. Profile

The page is rendered correctly. The details of the currently logged-in user are displayed.

Unit Details: *Profile*

Test Owner: Aryan Vora

Test Date: 24-03-22

Test Results: The page renders with the correct details.

Structural Coverage: This page is rendered after students log in.

Additional Comments: *The unit works as expected.*

7. Mess Menu Updation

The page is rendered correctly, and can only be accessed by the mess manager. The current menu is displayed, and on adding/deleting an item, the change is reflected on the menu rendered by students and the database.

Unit Details: Mess Menu

Test Owner: Aryan Vora

Test Date: 31-03-22

Test Results: Adding or deleting an item shows the correct change in the menu displayed to the student.

Structural Coverage: Adding and Deleting items were covered.

Additional Comments: *The unit works as expected.*

8. Dashboard Expenses

The dashboard page is accessible by students only. It displays the mess expenses of the current and past months. This was tested by changing the appropriate data in the database as well as by adding extras from the Mess page.

Unit Details: Dashboard Expenses

Test Owner: Aryan Vora

Test Date: 01-04-22

Test Results: The Dashboard Expenses show the correct expenses after calculating the expenses of the mess extras.

Structural Coverage: Added mess items to update the current expenses.

Additional Comments: *The unit works as expected.*

9. Dashboard Chart

The dashboard page is accessible by students only. It displays the mess expenses of the past 10 days. On changing the data in the database, the chart gets updated correctly.

Unit Details: Dashboard Expenses

Test Owner: Aryan Vora

Test Date: 01-04-22

Test Results: The Dashboard Chart show the correct expenses after calculating the expenses of the mess extras over the past 10 days.

Structural Coverage: Added mess items to update the daily expenses and by changing the data in the database.

Additional Comments: *The unit works as expected.*

10. Dashboard Hall History

The dashboard page shows the previous 3 hall entries/exits of the student with the hall number, room number, and entry and exit times. This was tested by changing the appropriate data in the database as well as manually performing the entry and exit of a student from various halls.

Unit Details: *Dashboard Hall History*

Test Owner: Aryan Vora

Test Date: 01-04-22

Test Results: The dashboard displays the last 3 hall visits correctly.

Structural Coverage: Performed entry and exit at various halls.

Additional Comments: *The unit works as expected.*

11. Hall Entry Check

If the user is not in another Hall database, then only he is allowed to enter. Otherwise, he gets the message to first exit from the previous hall.

Unit Details: *Hall Entry Check*

Test Owner: Shashwat Gupta

Test Date: 02-04-22

Test Results: Non-exited user gets the correct message to exit from the current hall. Otherwise, he is allowed to enter the hall.

Structural Coverage: Checking the Hall database

Additional Comments: *The unit works as expected.*

12. Hall Entry Authenticity Check

If the roll number and the room number entered are incorrect, the user gets the message to log in with the correct details. Otherwise, he gets registered in the hall.

Unit Details: *Authenticity Check*

Test Owner: Shashwat Gupta

Test Date: 02-04-22

Test Results: Only the correct present hall students can enter the hall.

Structural Coverage: Checking the Hall database

Additional Comments: *The unit works as expected.*

13. Hall Exit

The security can exit a student from the hall. This updates the data in the database and removes the particular student from the list displayed. The student is on the list if and only if the student has entered the hall.

Unit Details: *Hall Exit*

Test Owner: Aryan Vora

Test Date: 02-04-22

Test Results: The student gets removed from the list and his/her data gets updated in the database.

Structural Coverage: Exit students from a particular hall.

Additional Comments: *The unit works as expected.*

14. Call students

The security can see the list of students in a hall and also their phone numbers, the security can call the students by clicking on the phone number.

Unit Details: *Call students*

Test Owner: Aryan Vora

Test Date: 02-04-22

Test Results: The student's phone number gets loaded into the security's phone's dialer from which he/her can call the student.

Structural Coverage: Check the profiles of the students, as well as their hall presence, and extract their phone numbers.

Additional Comments: *The unit works as expected.*

15. Logout

The users can log out by pressing the Logout button on the navigation bar.

Unit Details: *Logout*

Test Owner: Aryan Vora

Test Date: 02-04-22

Test Results: The user gets successfully logged out and a link to the login page is displayed.

Structural Coverage: Check the profiles of the students and log them out of the system.

Additional Comments: *The unit works as expected.*

16. Admin

The admin page is default built by Django and therefore doesn't require to be tested.

Unit Details: Admin

Test Owner: Aryan Vora

Test Date: 02-04-22

Test Results: Admin functionalities have already been tested.

Structural Coverage: N/A.

Additional Comments: *The unit has been tested extensively.*

17. Order List

The order list is displayed showing all orders by a student. The quantity, price, item and time of the order is displayed. Tested by changing data in the database as well as from the mess extras page.

Unit Details: Order List

Test Owner: Aryan Vora

Test Date: 03-04-22

Test Results: Order List gets updated when order is placed or when data in database gets changed.

Structural Coverage: Updated data in the database as well as from the mess extras page.

Additional Comments: *The unit works as expected.*

3 Integration Testing

1. Dashboard

The page is rendered correctly, and displays the last 3 hall entries correctly, as well as the total mess expenses of the current and previous month.

Tested by entering halls and entering them and by adding mess extras.

Module Details: *Mess Menu*

Test Owner: Aryan Vora and Dishay Mehta

Test Date: 31-03-22

Test Results: Adding or deleting an item on the mess page shows the correct change in the dashboard expenses, exiting from a hall displays the hall in the list of recently visited halls in the dashboard.

Additional Comments: *The module works as expected.*

2. Hall Entry

The page is rendered correctly. Upon entering the roll number and the room number of the registered user, the correct message of "Welcome to Hall x" (where x is the entered Hall) is displayed. The message to exit from the hall is also shown as an indicator to the student to not forget about the exit if the student tries to enter a hall without exiting from the current hall.

Module Details: *Hall Entry*

Test Owner: Dishay Mehta

Test Date: 01-04-22

Test Results: The login of the guest works as expected, it fails when you input the wrong roll number or room number of the host and it tells you to fill the form correctly.

Additional Comments: *The module works as expected.*

3. Hall Exit

The page is rendered correctly. The security guard will get a list of all the guests who have entered the different halls and can manage to notify them when the hall timings for the guests are near to closing. With the confirmation of the guest at the hall gate for the exit, the security guard will exit the guest from the system as well.

Module Details: Hall Exit

Test Owner: Dishay Mehta

Test Date: 01-04-22

Test Results: The list of guests is shown correctly. Management of guests can be done by clicking the “manage guest” button. The exit button once clicked exits the guest from the database and the entry form is shown up in case the guest wants to enter a different hall.

Additional Comments: *The module works as expected.*

4. Student Mess

The page is rendered correctly. The student can see the menu for the meal which includes the basic meal and extras along with their price. The student then selects the quantity of each of the extras, the total price is displayed in the checkout tab. The student can check out which leads to a notification asking for confirmation of the order. The checkout total is added to the monthly expenses in the dashboard and also the database, as well as for the daily expenses in the chart. The order correctly gets added to the order list.

Module Details: Student Mess

Test Owner: Aryan Vora

Test Date: 02-04-22

Test Results: The menu is displayed correctly. The quantities can be changed and the correct amount is shown in the checkout tab. After checking out, the correct order is added to the database and the price is added to the dashboard, chart and the database. The order is also added to the order list.

Additional Comments: *The module works as expected.*

5. Manage Mess

The page is rendered correctly. The manager can edit the menu by selecting whether to add extras or main. This includes deleting pre-existing items or adding items by setting their price.

Module Details: Manage Mess

Test Owner: Aryan Vora

Test Date: 02-04-22

Test Results: The current items in the menu are displayed correctly. On deleting an item, it is removed from the list of items displayed to the manager and also from the menu displayed to the students. On adding an item (main/extra), the item is displayed in the respective menu with the correct price.

Additional Comments: *The module works as expected.*

6. Profile

The page is rendered correctly. The profile details are rendered based on the data in the database, as it is security-critical, it is not editable.

Module Details: Profile

Test Owner: Aryan Vora

Test Date: 02-04-22

Test Results: The correct details from the database are retrieved and displayed.

Additional Comments: *The module works as expected.*

7. Signin/Signout

The page is rendered correctly. The login details are rendered based on the data in the database, as it is security-critical. So based on the 3 kinds of profile (i.e. Mess manager, Security Guard, and Student) it will automatically check which is the corresponding profile that you have logged in to and will redirect you to a new page with access to certain features.

Module Details: Login and Logout

Test Owner: Dishay Mehta

Test Date: 02-04-22

Test Results: The login is successful only if the correct username and password are entered. You are successfully logged out and get a link to log in again.

Additional Comments: *The module works as expected.*

4 System Testing

1. Requirement: Configuring user

Test Owner: Aayush Kumar

Test Date: 01/04/22

Test Results: Login page enables the functionality of user logging in using CC ID and password. Logout is also easily accessible in the header once the login is completed. Through the profile page, the student can also view all additional details like hall number, etc.

Additional Comments: While the initial requirement document mentioned a sign-up functionality, we do not require this as all students will already be in the database.

2. Requirement: QR Scanner

Test Owner: Aayush Kumar

Test Date: 01/04/22

Test Results: QR Code functionality enables entry to the respective hall of the QR Code, and directs to the correct page. QR Code scanner is reliable and accesses the camera after requesting the user.

Additional Comments: The initial requirement document mentioned a QR Code for the mess but this was unnecessary and thus not included finally.

3. Requirement: Hall Entry

Test Owner: Aayush Kumar

Test Date: 01/04/22

Test Results: Upon entering the roll number and room number of the person being visited, the user is allowed entry and added to the outside-student database if the given information matches the user database. If the information doesn't match, the user is prompted to fill the form again correctly and the user is not added to the outside-student database.

Additional Comments: The name of the person being visited was not required and was not implemented in the entry details.

4. Requirement: Hall Exit

Test Owner: Aryan Vora

Test Date: 02/04/22

Test Results: *The security is able to exit a student from any hall.*

Additional Comments: *The requirement is fulfilled.*

5. Requirement: Notification

Test Owner: Aryan Vora

Test Date: 02/04/22

Test Results: *Security has the ability to call the students in the hall at any time.*

Additional Comments: *The requirement has been satisfied in a different way. The initial plan was to have an email/SMS blast at 2350 hrs but now the security has the ability to individually call all students at any time.*

6. Requirement: Query of Students in the Hall

Test Owner: Aryan Vora

Test Date: 02/04/22

Test Results: *Security has the list containing the name, room visiting, roll number and phone number of the students in the hall at any time. Also the security has the ability to exit students from the list that is displayed.*

Additional Comments: *The requirement is fulfilled.*

7. Requirement: Ordering Extras

Test Owner: Aryan Vora

Test Date: 02/04/22

Test Results: *Students can order extras from the mess menu as is specified by the mess manager. There is no need to scan the QR Code. After ordering, a confirmation page is displayed.*

Additional Comments: *The requirement is majorly satisfied with the change being that the need to scan the QR Code is removed.*

8. Requirement: Order History

Test Owner: Aryan Vora

Test Date: 02/04/22

Test Results: *Students after ordering extras can view the order in the order history. This displays all their orders along with the time when they were ordered.*

Additional Comments: *The requirement is fulfilled.*

9. Requirement: Menu Updation

Test Owner: Aryan Vora

Test Date: 02/04/22

Test Results: *Mess managers can update the menu in which they can add/delete items.*

Additional Comments: *The requirement is fulfilled.*

10. Requirement: Entries Updation

Test Owner: Aryan Vora

Test Date: 02/04/22

Test Results: N/A

Additional Comments: *The requirement is not implemented.*

5 Conclusion

The team adopted a manual testing strategy, so testing with extreme values was not possible. This makes the testing not very exhaustive. However, the testing has been done adequately for the values that are expected and in the expected range, and our team has tried to account for all actions possible by all the actors.

The admin functionalities have not been tested by us manually since we are using the functionality provided by the Django tool which has already been well-documented and well-tested.

Since there was no automated tool readily available for us to easily implement in our software, the testing process was quite time-consuming.

By using an automated tool we could have guaranteed that all of our functionality is completely bug-proof, however, with manual testing we couldn't achieve this.

Appendix A - Group Log

23-03-22: Aryan explored testing methods for the Django framework
24-03-22: Dishay explored testing the frontend functionalities.
29-03-22: Samarth and Sarthak fixed authentication bugs.
30-03-22: Samarth fixed the bug in which Hall entry time was being saved in UTC
31-03-22: Sarthak fixed the interlinking of buttons from one view to other view.
1-03-22: Sarthak and Samarth fixed the bug that the hall entry/exit form was not getting refreshed after a failed event.
02-03-22: Dishay did integration testing of the mess and hall entry/exit module.
01-04-22: Aayush did work on testing functional requirements.
02-04-22: Aryan, Dishay, and Shashwat worked on Unit testing.
03-04-22: Shashwat worked on Scheduler testing.
02-04-22: Dishay and Aryan worked on Module Testing.
02-04-22: Aryan worked on System Testing.
23-03-22 to 03-04-22: Sarthak and Samarth sorted out bugs found during testing as well as minor improvements to the project.
23-03-22 to 03-04-22: Girik, Ananya and Ankur worked on User Manual.