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# Test Document

for

## HC Reimbursement Automation

Version 1.0

Prepared by

Group 6:

Group Name: Quarantined  
Developers

Gaurav Kumar  
Rahul Rathod  
Subhrojyoti Chatterjee  
Shantanu Thakur  
Priyanka Jalan  
Shorya Kumar  
Sanchit Sinha  
Atreya Goswami  
Harsh Kumar  
Nakula Neeraje

190337  
190667  
190866  
190792  
190649  
190818  
190753  
190201  
190360  
190525

[gauravkg@iitk.ac.in](mailto:gauravkg@iitk.ac.in)  
[rrathod@iitk.ac.in](mailto:rrathod@iitk.ac.in)  
[sjyoti@iitk.ac.in](mailto:sjyoti@iitk.ac.in)  
[sthakur@iitk.ac.in](mailto:sthakur@iitk.ac.in)  
[prianka@iitk.ac.in](mailto:prianka@iitk.ac.in)  
[shoryak@iitk.ac.in](mailto:shoryak@iitk.ac.in)  
[sanchits@iitk.ac.in](mailto:sanchits@iitk.ac.in)  
[atreya@iitk.ac.in](mailto:atreya@iitk.ac.in)  
[harshku@iitk.ac.in](mailto:harshku@iitk.ac.in)  
[nakula@iitk.ac.in](mailto:nakula@iitk.ac.in)

Course: CS253

Mentor TA: *Nikhil Kumar Singh*

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## Revisions

Version	Primary Author(s)	Description of Version	Date Completed
Initial Draft (v1)	Gaurav Kumar, Nakula Neeraje, Rahul Rathod, Shantanu Thakur, Shorya Kumar,Sanchit Sinha Subhrojyoti Chatterjee, Priyanka Jalan, Harsh Kumar, Atreya Goswami	Built a web app that will allow users to apply for reimbursement claims online by simply filling an online form and providing required details. The system would also help users view already submitted forms and their status. The HC staff can scrutinize and verify the applications. They can approve and send the details to the Accounts department or reject the claims and update the status of the form..	03/04/22

# 1 Introduction

## *Mention the test strategy*

We have used Automation as well as manual testing depending on different types of testing , we have automated unit tests as well as manual integration and system tests to determine the robustness of our software.

## *When was the testing conducted?*

We have done testing in two stages , one in parallel with the implementation which is mostly manual testing that we have done while reviewing pull requests whenever a new implementation was added. We have tried to review all pull requests before merging them to the main branch and corrected all issues found while reviewing concurrently or in subsequent PRs.

In the Second stage when implementation was completed we wrote several unit tests to automated unit testing and again did manual integration testing and system testing to ensure the robustness of our software.

## *Who were the testers?*

In our project all the contributors acted both as developers and testers. Developers themselves became testers for PRs by other Developers and Vice Versa.

## *What coverage criteria were used?*

For automated unit testing we used the coverage tool provided by django and for the manual part we used the number of lines of code reviewed manually as well as how many functional requirements are being fulfilled by the software.

## *Have you used any tool for testing?*

For the automated Unit testing we used the test tool provided by Django.

## 2 Unit Testing

### *1. Mapping login url maps to login function in view.py*

**Unit Details:** Url Pattern, name = 'login'

**Test Owner:** Shorya Kumar

**Test Date:** 27/03/2022

**Test Results:** Successful

**Structural Coverage:** 100%

**Additional Comments:**

### *2. Mapping signup url maps to signup function in view.py*

**Unit Details:** Url Pattern, name = 'signup'

**Test Owner:** Shorya Kumar

**Test Date:** 27/03/2022

**Test Results:** Successful

**Structural Coverage:** 100%

**Additional Comments:**

### *3. Mapping registerPatient url maps to login function in view.py*

**Unit Details:** Url Pattern, name = 'login'

**Test Owner:** Shorya Kumar

**Test Date:** 27/03/2022

**Test Results:** Successful

**Structural Coverage:**100%

**Additional Comments:**

### *4. Mapping loginUser url maps to login function in view.py*

**Unit Details:** Url Pattern, name = 'login'

**Test Owner:** Shorya Kumar

**Test Date:** 27/03/2022

**Test Results:** Successful

**Structural Coverage:**100%

**Additional Comments:**

### *5. Mapping logout url maps to login function in view.py*

**Unit Details:** Url Pattern, name = 'login'

**Test Owner:** Shorya Kumar

**Test Date:** 27/03/2022

**Test Results:** Successful

**Structural Coverage:**100%

**Additional Comments:**

### *6. Mapping `patient_dashboard_display` url maps to `patient_dashboard_display` function in view.py*

**Unit Details:** Url Pattern, name = 'patient\_dashboard\_display'

**Test Owner:** Shorya Kumar

**Test Date:** 27/03/2022

**Test Results:** Successful

**Structural Coverage:**100%

**Additional Comments:**

7. Mapping *doctor\_dashboard\_display* url maps to *doctor\_dashboard\_display* function in *view.py*

**Unit Details:** Url Pattern, name = 'doctor\_dashboard\_display'

**Test Owner:** Shorya Kumar

**Test Date:** 27/03/2022

**Test Results:** Successful

**Structural Coverage:** 100%

**Additional Comments:**

8. Mapping *hadmin\_dashboard\_display* url maps to *hadmin\_dashboard\_display* function in *view.py*

**Unit Details:** Url Pattern, name = 'hadmin\_dashboard\_display'

**Test Owner:** Shorya Kumar

**Test Date:** 27/03/2022

**Test Results:** Successful

**Structural Coverage:**100%

**Additional Comments:**

9. Mapping *accounts\_dashboard\_display* url maps to *accounts\_dashboard\_display* function in *view.py*

**Unit Details:** Url Pattern, name = 'accounts\_dashboard\_display'

**Test Owner:** Shorya Kumar

**Test Date:** 27/03/2022

**Test Results:** Successful

**Structural Coverage:** 100%

**Additional Comments:**

10. Mapping *form* url maps to *form* function in *view.py*

**Unit Details:** Url Pattern, name = 'form'

**Test Owner:** Shorya Kumar

**Test Date:** 27/03/2022

**Test Results:** Successful

**Structural Coverage:** 100%

**Additional Comments:**

**11. Mapping** *acceptForDoctorApproval**url maps to acceptForDoctorApproval**function in view.py***Unit Details:** Url Pattern, name = 'acceptForDoctorApproval'**Test Owner:** Shorya Kumar**Test Date:** 27/03/2022**Test Results:** Successful**Structural Coverage:** 100%**Additional Comments:****12. Mapping** *acceptFormByHC**url maps to acceptFormByHC**function in view.py***Unit Details:** Url Pattern, name = 'acceptFormByHC'**Test Owner:** Shorya Kumar**Test Date:** 27/03/2022**Test Results:** Successful**Structural Coverage:** 100%**Additional Comments:****13. Mapping** *rejectFormByHC**url maps to rejectFormByHC**function in view.py***Unit Details:** Url Pattern, name = 'rejectFormByHC'**Test Owner:** Shorya Kumar**Test Date:** 27/03/2022**Test Results:** Successful**Structural Coverage:** 100%**Additional Comments:****14. Mapping** *acceptByDoctor**url maps to acceptByDoctor**function in view.py***Unit Details:** Url Pattern, name = 'acceptByDoctor'**Test Owner:** Shorya Kumar**Test Date:** 27/03/2022**Test Results:** Successful**Structural Coverage:** 100%**Additional Comments:**

**15. Mapping** *rejectByDoctor**url maps to rejectByDoctor**function in view.py***Unit Details:** Url Pattern, name = 'rejectByDoctor'**Test Owner:** Shorya Kumar**Test Date:** 27/03/2022**Test Results:** Successful**Structural Coverage:** 100%**Additional Comments:****16. Mapping** *acceptByAccounts**url maps to acceptByAccounts**function in view.py***Unit Details:** Url Pattern, name = 'acceptByAccounts'**Test Owner:** Shorya Kumar**Test Date:** 27/03/2022**Test Results:** Successful**Structural Coverage:** 100%**Additional Comments:****17. Mapping** *rejectByAccounts**url maps to rejectByAccounts**function in view.py***Unit Details:** Url Pattern, name = 'rejectByAccounts'**Test Owner:** Shorya Kumar**Test Date:** 27/03/2022**Test Results:** Successful**Structural Coverage:** 100%**Additional Comments:****18. Mapping** *adminsignup**url maps to adminsignup**function in view.py***Unit Details:** Url Pattern, name = ''**Test Owner:** Shorya Kumar**Test Date:** 27/03/2022**Test Results:** Successful



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**Structural Coverage: 100%****Additional Comments:****19. Mapping** *register\_any\_user**url maps to register\_any\_user**function in view.py***Unit Details:** Url Pattern, name = 'register\_any\_user'**Test Owner:** Shorya Kumar**Test Date:** 27/03/2022**Test Results:** Successful**Structural Coverage: 100%****Additional Comments:****20. Mapping** *patient\_profile**url maps to patient\_profile**function in view.py***Unit Details:** Url Pattern, name = 'patient\_profile'**Test Owner:** Shorya Kumar**Test Date:** 27/03/2022**Test Results:** Successful**Structural Coverage: 100%****Additional Comments:****21. Mapping** *update\_patient\_profile**url maps to update\_patient\_profile**function in view.py***Unit Details:** Url Pattern, name = 'update\_patient\_profile'**Test Owner:** Shorya Kumar**Test Date:** 27/03/2022**Test Results:** Successful**Structural Coverage: 100%****Additional Comments:****22. Mapping** *doctor\_profile**url maps to doctor\_profile**function in view.py***Unit Details:** Url Pattern, name = 'doctor\_profile'

**Test Owner:** Shorya Kumar

**Test Date:** 27/03/2022

**Test Results:** Successful

**Structural Coverage:** 100%

**Additional Comments:**

*23. Mapping update\_doctor\_profile*

*url maps to update\_doctor\_profile*

*function in view.py*

**Unit Details:** Url Pattern, name = 'update\_doctor\_profile'

**Test Owner:** Shorya Kumar

**Test Date:** 27/03/2022

**Test Results:** Successful

**Structural Coverage:** 100%

**Additional Comments:**

*24. Mapping accounts\_profile*

*url maps to accounts\_profile*

*function in view.py*

**Unit Details:** Url Pattern, name = 'accounts\_profile'

**Test Owner:** Shorya Kumar

**Test Date:** 27/03/2022

**Test Results:** Successful

**Structural Coverage:** 100%

**Additional Comments:**

*25. Mapping update\_accounts\_profile*

*url maps to update\_accounts\_profile*

*function in view.py*

**Unit Details:** Url Pattern, name = 'update\_accounts\_profile'

**Test Owner:** Shorya Kumar

**Test Date:** 27/03/2022

**Test Results:** Successful

**Structural Coverage:** 100%

**Additional Comments:**

*26. Mapping*

*url maps to* `hcadmin_profile`

*function in view.py* `hcadmin_profile`

**Unit Details:** Url Pattern, name = 'hcadmin\_profile'

**Test Owner:** Shorya Kumar

**Test Date:** 27/03/2022

**Test Results:** Successful

**Structural Coverage:** 100%

**Additional Comments:**

*27. Mapping* `update_hcadmin_profile`

*url maps to* `update_hcadmin_profile`

*function in view.py*

**Unit Details:** Url Pattern, name = 'update\_hcadmin\_profile'

**Test Owner:** Shorya Kumar

**Test Date:** 27/03/2022

**Test Results:** Successful

**Structural Coverage:** 100%

**Additional Comments:**

*28. Testing patientsignup by checking the status code and the template rendered in views.py*

**Unit Details:** Views, name = 'patientsignup'

**Test Owner:** Nakula Neeraje

**Test Date:** 28/03/2022

**Test Results:** Successful

**Structural Coverage:** 90%

**Additional Comments:** [Enter any summary comments]

*29. Testing login by checking the status code and the template rendered in views.py*

**Unit Details:** Views, name = 'login'

**Test Owner:** Nakula Neeraje

**Test Date:** 28/03/2022

**Test Results:** Successful

**Structural Coverage:** 100%

**Additional Comments:** [Enter any summary comments]

*30. Testing registerPatient by making sure the redirection works fine in views.py*

**Unit Details:** Views, name = 'registerPatient'

**Test Owner:** Nakula Neeraje

**Test Date:** 28/03/2022

**Test Results:** Successful

**Structural Coverage:** 100%

**Additional Comments:** [Enter any summary comments]

*31. Testing loginUser by checking the redirection and the template asserted in views.py*

**Unit Details:** Views, name = 'loginUser'

**Test Owner:** Nakula Neeraje

**Test Date:** 28/03/2022

**Test Results:** Successful

**Structural Coverage:** 100%

**Additional Comments:** [Enter any summary comments]

*32. Testing logout by checking the redirection and the template asserted in views.py*

**Unit Details:** Views, name = 'logout'

**Test Owner:** Nakula Neeraje

**Test Date:** 28/03/2022

**Test Results:** Successful

**Structural Coverage:** 100%

**Additional Comments:** [Enter any summary comments]

*33. Testing form by checking the status code and the template rendered in views.py*

**Unit Details:** Views, name = 'form'

**Test Owner:** Nakula Neeraje

**Test Date:** 28/03/2022

**Test Results:** Successful

**Structural Coverage:** 90%

**Additional Comments:** [Enter any summary comments]

*34. Testing submitForm by checking the redirection and the template asserted in views.py*

**Unit Details:** Views, name = 'submitForm'

**Test Owner:** Nakula Neeraje

**Test Date:** 28/03/2022

**Test Results:** Successful

**Structural Coverage:** 95%

**Additional Comments:** [Enter any summary comments]

*35. Testing doctor\_dashboard\_display by checking the redirection and the template asserted in views.py*

**Unit Details:** Views, name = 'doctor\_dashboard\_display'

**Test Owner:** Nakula Neeraje

**Test Date:** 28/03/2022

**Test Results:** Successful

**Structural Coverage:** 90%

**Additional Comments:** [Enter any summary comments]

*36. Testing patient\_dashboard\_display by checking the redirection and the template asserted in views.py*

**Unit Details:** Views, name = 'patient\_dashboard\_display'

**Test Owner:** Nakula Neeraje

**Test Date:** 28/03/2022

**Test Results:** Successful

**Structural Coverage:** 90%

**Additional Comments:** [Enter any summary comments]

*37. Testing hcadm\_in\_dashboard\_display by checking the redirection and the template asserted in views.py*

**Unit Details:** Views, name = 'hcadm\_in\_dashboard\_display'

**Test Owner:** Nakula Neeraje

**Test Date:** 28/03/2022

**Test Results:** Successful

**Structural Coverage:** 90%

**Additional Comments:** [Enter any summary comments]

*38. Testing accounts\_dashboard\_display by checking the redirection and the template asserted in views.py*

**Unit Details:** Views, name = 'accounts\_dashboard\_display'

**Test Owner:** Nakula Neeraje

**Test Date:** 28/03/2022

**Test Results:** Successful

**Structural Coverage:** 90%

**Additional Comments:** [Enter any summary comments]

*39. Testing acceptForDoctorApproval by checking the user redirection and response status code*

**Unit Details:** Views, name = 'acceptForDoctorApproval'

**Test Owner:** Nakula Neeraje

**Test Date:** 28/03/2022

**Test Results:** Successful

**Structural Coverage:** 90 - 100

**Additional Comments:** [Enter any summary comments]

### 3 Integration Testing

#### 1. Checking the Interface between login and Dashboard for Patient

**Module Details:** *patient\_dashboard\_display , login*

**Test Owner:** *Shorya Kumar*

**Test Date:** *03/28/2022*

**Test Results:** *On entering correct login credentials of the patient software redirects to the patient dashboard*

#### 2. Checking the Interface between login and Dashboard for Doctor

**Module Details:** *doctor\_dashboard\_display , login*

**Test Owner:** *Shorya Kumar*

**Test Date:** *03/28/2022*

**Test Results:** *On entering correct login credentials of the Doctors software redirects to the doctor dashboard*

#### 3. Checking the Interface between login and Dashboard for HC\_Admin

**Module Details:** *hcadmin\_dashboard\_display , login*

**Test Owner:** *Shorya Kumar*

**Test Date:** *03/28/2022*

**Test Results:** *On entering correct login credentials of the HC\_admin software redirects to the hc\_admin dashboard*

#### 4. Checking the Interface between login and Dashboard for accounts

**Module Details:** *accounts\_dashboard\_display , login*

**Test Owner:** *Shorya Kumar*

**Test Date:** *03/28/2022*

**Test Results:** *On entering correct login credentials of the accounts software redirects to the accounts dashboard*

#### 5. Patient Can't register with already used email / rollno / username

**Module Details:** *login , registerUser*

**Test Owner:** *Shorya Kumar*

**Test Date:** *03/28/2022*

**Test Results:** *Successful*

**Additional Comments:** *[Enter any summary comments]*

## **6. HC Admin/ doctors/ Accounts officials can't register with already used email / rollno / username**

**Module Details:** *register\_any\_user*

**Test Owner:** *Sanchit Sinha*

**Test Date:** *03/28/2022*

**Test Results:** *Successful*

**Additional Comments:** *After testing this module, HC Admins, doctors, account officials were not able to sign up using already used email, roll number or usernames*

## **7. Only authorized users are able to make POST and GET requests**

**Module Details:** *register\_any\_user, registerPatient, loginUser, submitForm, role\_based\_redirection, acceptForDoctorApproval, acceptFormByHC, rejectFormByHC, acceptByDoctor, rejectByDoctor, acceptByAccounts, doctor\_profile, patient\_profile, hcadmin\_profile*

**Test Owner:** *Sanchit Sinha*

**Test Date:** *03/28/2022*

**Test Results:** *Successful*

**Additional Comments:** *After testing this module, we restricted the access to pages or form submission without if the user is logged in. A user of another role can not access the dashboard of other users.*

## **8. Displayed correct messages with proper colour on the respective pages**

**Module Details:** *register\_any\_user, registerPatient, loginUser, submitForm, role\_based\_redirection,*

**Test Owner:** *Sanchit Sinha*

**Test Date:** *03/28/2022*

**Test Results:** *Successful*

**Additional Comments:** *Correct messages are now displayed on the pages. Error messages are now popping over the screen with red colour while the successful messages are popping over the screen with green colour.*

## **9. Incorrect credentials do not allow login**

**Module Details:** *login*

**Test Owner:** *Shorya Kumar*

**Test Date:** *03/28/2022*

**Test Results:** *User cannot login with incorrect credentials , it shows error and asks to re enter details*



**10. A patient can login after registering**

**Module Details:** *registerPatient , login*

**Test Owner:** *Shorya Kumar*

**Test Date:** *03/29/2022*

**Test Results:** *After registering a new patient , login with new credentials was working properly.*

**11. Negative fields are not allowed for quantities while filling a new form**

**Module Details:** *Nil*

**Test Owner:** *Shorya Kumar*

**Test Date:** *03/29/2022*

**Test Results:** *Form did not allow entering negative values in quantities while creating a new form.*

**12. Logout redirects any user to login page**

**Module Details:** *logout*

**Test Owner:** *Shorya Kumar*

**Test Date:** *03/29/2022*

**Test Results:** *Test successful for all roles*

**13. If confirm password field does not match with password field user is not allowed to signup**

**Module Details:** *login*

**Test Owner:** *Shorya Kumar*

**Test Date:** *03/30/2022*

**Test Results:** *Successful it shows error as passwords do not match*

**14. All role update profiles options do not allow a invalid format of phone number**

**Module Details:** *update\_patient\_profile, update\_hcadmin\_profile, update\_doctor\_profile, update\_accounts\_profile,*

**Test Owner:** *Shorya Kumar*

**Test Date:** *03/30/2022*

**Test Results:** *Successful*

**15. Delete medicine and Tests functionality**

**Module Details:** *med\_and\_test , add\_test , delete\_test , add\_medicine , delete\_medicine*

**Test Owner:** Shorya Kumar

**Test Date:** 03/3/2022

**Test Results:** Delete button successfully working in the profile

### **16. Users cannot register as Doctors/HC Admin/Accounts Official from the general sign up page**

**Module Details:** registerPatient

**Test Owner:** Harsh Kumar

**Test Date:** 03/29/2022

**Test Results:** There is no option for the user to register as Doctor/HC Admin/Accounts Official, and any user registered through this process is registered as a Patient only.

### **17. Checking the interface between HC\_Admin dashboard and Register User**

**Module Details:** AdminSignUp, hcadmin\_dashboard\_display

**Test Owner:** Harsh Kumar

**Test Date:** 03/29/2022

**Test Results:** Clicking on the 'Register User' option on the HC Admin Page redirects the user to the Admin Sign Up page.

### **18. HC Admin Official can register Doctors/HC Admin/Accounts Official using the 'Register User' option on the HC Admin dashboard**

**Module Details:** AdminSignUp

**Test Owner:** Harsh Kumar

**Test Date:** 03/29/2022

**Test Results:** The HC Admin can use the 'role' field on the Admin Sign Up Page to register users as Doctors/HC Admin/Accounts Official.

### **19. Checking interface between 'Log Out' option with every dashboard**

**Module Details:** logout

**Test Owner:** Harsh Kumar

**Test Date:** 03/29/2022

**Test Results:** Clicking on the 'Log Out' option redirects the user to the Login page from every dashboard and the user gets logged out of the portal successfully.

### **20. HC Admin can add Medicine/Tests using the 'Medicine & Tests' option on the HC Admin**

**Module Details:** add\_medicine , add\_test

**Test Owner:** Gaurav Kumar

**Test Date:** 03/30/2022

**Test Results:** Clicking on the 'Medicine & Tests' option on the HC Admin Page redirects the user to the Medicines & Tests page.

**21. Doctors/HC Admin/Accounts Official can add Medicine/Tests using the 'Medicine & Tests' option on the HC Admin Dashboard**

**Module Details:** add\_medicine , add\_test

**Test Owner:** Gaurav Kumar

**Test Date:** 03/30/2022

**Test Results:** Clicking on the "Medicine & Tests" option on the HC Admin Page redirects the user to the Medicines & Tests page.

**22. Patient can view form using the 'View Form' option available in every reimbursement request in the Patient dashboard**

**Module Details:** view\_form

**Test Owner:** Gaurav Kumar

**Test Date:** 03/30/2022

**Test Results:** Clicking on the "View Form" option on any form entry in dashboard opens a popup showing details of the form.

**23. Patient can view reimbursement transaction details using the 'View Request' option available in every entry in the Patient dashboard**

**Module Details:** view\_request

**Test Owner:** Gaurav Kumar

**Test Date:** 03/30/2022

**Test Results:** Clicking on the "View Request" option on any form entry in dashboard opens a popup showing details of that reimbursement transaction details.

**24. HC Admin can view form using the 'View Form' option available in every reimbursement request in the HC Admin dashboard**

**Module Details:** view\_form

**Test Owner:** Gaurav Kumar

**Test Date:** 03/30/2022

**Test Results:** Clicking on the "View Form" option on any form entry in dashboard opens a popup showing details of the form.

**25. HC Admin can view reimbursement transaction details using the 'View Request' option available in every entry in the HC Admin dashboard**

**Module Details:** *view\_request*

**Test Owner:** *Gaurav Kumar*

**Test Date:** *03/30/2022*

**Test Results:** *Clicking on the "View Request" option on any form entry in dashboard opens a popup showing details of that reimbursement transaction details.*

**26. Doctor can view form details using the 'View Form' option available in every reimbursement request in the Doctor dashboard**

**Module Details:** *view\_form*

**Test Owner:** *Gaurav Kumar*

**Test Date:** *03/30/2022*

**Test Results:** *Clicking on the "View Form" option on any form entry in dashboard opens a popup showing details of the form.*

**27. Doctor can view reimbursement transaction details using the 'View Request' option available in every entry in the Doctor dashboard**

**Module Details:** *view\_request*

**Test Owner:** *Gaurav Kumar*

**Test Date:** *03/30/2022*

**Test Results:** *Clicking on the "View Request" option on any form entry in the dashboard opens a popup showing details of that reimbursement transaction details.*

**28. Account can view form details using the 'View Form' option available in every reimbursement request in the Account dashboard**

**Module Details:** *view\_form*

**Test Owner:** *Gaurav Kumar*

**Test Date:** *03/30/2022*

**Test Results:** *Clicking on the "View Form" option on any form entry in dashboard opens a popup showing details of the form.*

**29. Account can view reimbursement transaction details using the 'View Request' option available in every entry in the Account dashboard**

**Module Details:** *view\_request*

**Test Owner:** *Gaurav Kumar*

**Test Date:** *03/30/2022*

**Test Results:** *Clicking on the “View Request” option on any form entry in the dashboard opens a popup showing details of that reimbursement transaction details.*

**30. Patient can view/update it's Profile details using the 'Profile' option available in the Patient Dashboard**

**Module Details:** *patient\_dashboard, patient\_profile*

**Test Owner:** *Gaurav Kumar*

**Test Date:** *03/31/2022*

**Test Results:** *Clicking on the “Profile” option on the dashboard redirects to the Patient profile page, showing details of that patient.*

**31. Patients can update their profile details using the 'Update' option after changing the details that need to be changed in the Patient Profile page.**

**Module Details:** *patient\_profile, update\_patient\_profile*

**Test Owner:** *Gaurav Kumar*

**Test Date:** *03/31/2022*

**Test Results:** *After changing the details needed to change and then clicking on the “Update” button in the profile page, updates the changed details in the database. These changes are also visible above in profile details.*

**32. HC Admin can view/update it's Profile details using the 'Profile' option available in the HC Admin Dashboard**

**Module Details:** *hadmin\_dashboard, hadmin\_profile*

**Test Owner:** *Gaurav Kumar*

**Test Date:** *03/31/2022*

**Test Results:** *Clicking on the “Profile” option on the dashboard redirects to the HC Admin profile page, showing details of that HC Admin.*

**33. HC Admin can update its profile details using the 'Update' option after changing the details that need to be changed in the HC Admin Profile page.**

**Module Details:** *hadmin\_profile, update\_hadmin\_profile*

**Test Owner:** *Gaurav Kumar*

**Test Date:** *03/31/2022*

**Test Results:** *After changing the details needed to be changed and then clicking on the “Update” button in the profile page, updates the changed details in the database. These changes are also visible above in profile details.*

**34. Doctor can view/update it's Profile details using the 'Profile' option available in the Doctor Dashboard**

**Module Details:** *doctor\_dashboard, doctor\_profile*

**Test Owner:** *Gaurav Kumar*

**Test Date:** *03/31/2022*

**Test Results:** *Clicking on the "Profile" option on the dashboard redirects to the doctor profile page, showing details of that doctor.*

**35. Doctors can update their profile details using the 'Update' option after changing the details that need to be changed in the Doctor Profile page.**

**Module Details:** *doctor\_profile, update\_doctor\_profile*

**Test Owner:** *Gaurav Kumar*

**Test Date:** *03/31/2022*

**Test Results:** *After changing the details needed to change and then clicking on the "Update" button in the profile page, updates the changed details in the database. These changes are also visible above in profile details.*

**36. Accounts can view/update it's Profile details using the 'Profile' option available in the Accounts Dashboard**

**Module Details:** *accounts\_dashboard, accounts\_profile*

**Test Owner:** *Gaurav Kumar*

**Test Date:** *03/31/2022*

**Test Results:** *Clicking on the "Profile" option on the dashboard redirects to the account profile page, showing details of that account.*

**37. Accounts can update their profile details using the 'Update' option after changing the details that need to be changed in the Accounts Profile page.**

**Module Details:** *accounts\_profile, update\_accounts\_profile*

**Test Owner:** *Gaurav Kumar*

**Test Date:** *03/31/2022*

**Test Results:** *After changing the details needed to be changed and then clicking on the "Update" button in the profile page, updates the changed details in the database. These changes also visible above in profile details.*

**38. The form is passed to respective users in correct order**

**Module Details:** *acceptForDoctorApproval, acceptFormByHC, rejectFormByHC, acceptByDoctor, rejectByDoctor, acceptByAccounts, rejectByAccounts*

**Test Owner:** *Sanchit Sinha*

**Test Date:** 03/31/2022

**Test Results:** Successful

**Additional Comments:** *The status of the form is now changing correctly. The form after submission is transferred to HC Admins for verification, which is then sent to doctors for approval and then again passed on to HC-Admins to verify the feedback and provide consent. It is then sent to Account officials and finally marked as Approved when accepted by all the non-patient roles.*

## 4 System Testing

- 1. Requirement:** *Users should be able to apply for reimbursement claims online, fill an online form and submit scanned copies of the required documents.*

*We tested the following functions*

- *formssubmit*
- *acceptFormByHC*
- *rejectFormByHC*
- *acceptByDoctor*
- *rejectByDoctor*
- *acceptByAccounts*
- *rejectByAccounts*

*Upon successfully testing all the components the form was now successfully submitted and its status was updated correspondingly.*

**Test Owner:** *Sanchit Sinha*

**Test Date:** *[03/27/2022] - [04/02/2022]*

**Test Results:** *The test was successfully conducted. The testing began from the user profile by filling up the online form and then was tracked upon in other non-patient roles to check if the form flow logic is being implemented properly or not. Minor bugs were fixed in the process and changes were integrated in the main application by creating and testing PRs over github.*

**Additional Comments:** *The status of the form is now changing correctly. The form after submission is transferred to HC Admins for verification, which is then sent to doctors for approval and then again passed on to HC-Admins to verify the feedback and provide consent. It is then sent to Account officials and finally marked as Approved when accepted by all the non-patient roles.*

- 2. Requirement:** *The system would also help users view already submitted forms and their status.*

*We tested the following functions*

- *patient\_dashboard\_display*
- *doctor\_dashboard\_display*
- *hadmin\_dashboard\_display*
- *accounts\_dashboard\_display*

*Upon successfully testing all the components all the forms with their corresponding status and details were correctly displayed over the dashboard.*

**Test Owner:** *Sanchit Sinha*

**Test Date:** *[03/27/2022] - [04/02/2022]*



**Test Results:** *The test was successfully conducted. The testing was done on the dashboard page of patients, HC Admins, doctors and account officials. Minor frontend issues were fixed and integrated in the main application by creating and testing PRs over github.*

**Additional Comments:** *The form tables over all the dashboard pages is now being correctly displayed.*

**3. Requirement:** *The HC staff can scrutinize and verify the applications. Then they can approve and send the details to the Accounts department or reject the claims and update the status of the form accordingly.*

*We tested the following functions*

- *acceptForDoctorApproval*
- *acceptFormByHC*
- *rejectFormByHC*
- *acceptByDoctor*
- *rejectByDoctor*
- *acceptByAccounts*
- *rejectByAccounts*

*Upon successfully testing all the components the admins are now able to accept/reject forms and even provide feedback.*

**Test Owner:** *Sanchit Sinha*

**Test Date:** *[03/27/2022] - [04/02/2022]*

**Test Results:** *The test was successfully conducted. The testing was done on the dashboard page of HC Admins, doctors and account officials. Minor issues were fixed and integrated in the main application by creating and testing PRs over github.*

**Additional Comments:** *The admins are now able to scrutinize and verify the application.*

**4. Requirement:** *External interface requirement*

*We tested for the following components*

- *User Interfaces*
- *Software Interfaces*

*All the pages and databases were tested manually to check whether everything was working properly or not. The API testing was automated, while some of the requests were tested manually.*

**Test Owner:** *Sanchit Sinha*

**Test Date:** *[03/20/2022] - [04/02/2022]*

**Test Results:** *The test was successfully conducted. The testing was done on all the HTML pages. All the APIs used were also tested and properly integrated. Minor issues were fixed and integrated in the main application by creating and testing PRs over github.*

**Additional Comments:** -

**5. Requirement:** *Non-functional requirements*

*We tested for the following components*

- *Performance Requirements*
- *Safety and Security Requirements*

*API response time was tested for smoothness. The page loading time and other security issues were tested.*

**Test Owner:** *Sanchit Sinha*

**Test Date:** *[03/20/2022] - [04/02/2022]*

**Test Results:** *The test was successfully conducted. The main aim of the testing was to check whether all API requests were responding in the stipulated time or not . We even checked whether the login system was secure or not, that is whether the access to pages was restricted based on role or not.*

**Additional Comments:** -

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## 5 Conclusion

### *How Effective and exhaustive was the testing?*

Testing was quite effective because of our mandatory reviews of all pull requests before merging them which helped us in detecting bugs early on in the development and we merged PRs only after sufficient testing by other contributors in the repository. And for the automated testing part the interface django provided helped us in automating a portion of unit testing thus enhancing exhaustiveness of our tests.

### *Which components have not been tested adequately?*

Almost all the components have been tested adequately. Some of the functionality like that of the admin page as provided by Django has not been tested separately, because there is no chance of bugs in that component.

### *What difficulties have you faced during testing?*

Manual testing for integration testing was quite time taking , we could not find a feasible way to automate integration testing , we were able to test different functionalities just because we had maintained everything nicely on github in PRs and issues testing all those requirements was possible.

### *How could the testing process be improved?*

Nice github repo has helped us a lot while testing so we feel that maintaining a nice track of development would improve the testing process, especially for security critical softwares. Good documentation allows us to identify the portions that need testing. Moreover, completely automating all testing processes can result in a lot of improvement and even save a lot of time.



## Appendix A - Group Log

*<Please include here all the minutes from your group meetings, your group activities, and any other relevant information that will assist in determining the effort put forth to produce this document>*

- We organised meetings over google meet to initiate the testing procedures and in case of any issue.
- Informal discussions were always being done on discord or Whatsapp channels
- Major portion of the testing and resolving issues was also done over Github.