ARPO

Test Document

Version 1.1

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Course: **CS253**
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Contents

Revisions

Version	Primary Author(s)	Description of Version	Date Completed
1.0	Akansh Agrawal Jahnavi Kairamkonda Shubhan R Akshan Agrawal Pranav Singh Manoj Kumar Atharv Tyagi Keshav Kumar Piyush Senwar Lakshay Rastogi	First Version of testing document for ARPO	03/04/2022
1.1	Akansh Agrawal Jahnavi Kairamkonda Shubhan R Akshan Agrawal Pranav Singh Manoj Kumar Atharv Tyagi Keshav Kumar Piyush Senwar Lakshay Rastogi	Updated document as per the feedback from the beta testing group and added logo to cover page	27/04/2022

1 Introduction

We have not used any tool for testing and did all the testing manually, which was very efficient in our case. We conducted testing in parallel with implementation. Some developers, as well as some independent testers, tested the various features of this software. The coverage criteria included seeing if all the features (functional as well as non-functional) worked properly within and across the interface. Broadly we did 3 types of testing: Unit, Integration, and System testing. The details for each type of testing are mentioned in subsequent pages.

2   Unit Testing

1. General Forum for Student, Instructor and TA/Tutor

Posting forums, liking forums, replying to the forum, making sure an actor can not delete anyone else's forum or reply, and making sure the forum can be posted anonymously were tested.
Unit Details: This is where students and instructors, and TA/Tutors of a course can post forums and reply to forums. Posting and replying can be done anonymously also by these actors.
Test Owner: Shubhan R, Akansh Agrawal and Lakshay Rastogi
Test Date: 21/03/2022 - 22/03/2022
Test Results: All the features except the anonymous tick box were working.
Additional Comments: Anonymous tick box was added on 22/03/2022

2. Private Query of Course

Check if a student can add, edit and delete a private query and see the status of the query. Also checked that private queries of other students are not seen.
Unit Details: Students send private queries to instructors and TA/ Tutors which can be resolved by them.
Test Owner: Shubhan R, Akshan Agrawal and Lakshay Rastogi
Test Date: 21/03/2022 - 22/03/2022
Test Results: Everything worked fine.
Additional Comments: No additional comments

3. Announcement panel within course

Checking that Instructors and TA/Tutors can post, delete and edit notifications. We also checked that students could only view and not post, delete or edit notifications

Unit Details: This is where Instructors and TA/Tutors can post and delete course notifications, and students view notifications.
Test Owner: Shubhan R, Lakshay Rastogi and Manoj Kumar
Test Date: 21/03/2022 - 22/03/2022
Test Results: Everything worked perfectly.
Additional Comments: No additional comments

4. Login and Logout

Checking if the users can log in with the correct credentials, and without that, no user can login. Also ensured that the users can successfully log out of the portal.

Unit Details: Using the login page users can enter inside the portal and using the logout tab users can log out of the portal
Test Owner: Akansh Agrawal and Manoj Kumar
Test Date: 19/03/2022 - 20/03/2022
Test Results: The login was working fine on entering correct credentials and also restricted the entry of those who entered the wrong password, thus ensuring that no unauthorized users can log in. Although a prompt was missing for the wrong credentials. The logout was successful for each actor.
Additional Comments: Added wrong credentials prompt

5. Dashboard (Just after login)

Checking if all the features were correctly displayed on the dashboard page for each user and if the linking was correctly done for each feature and that they were redirected to the correct page.
Unit Details: Using the Dashboard page, the users can access various features provided (only which they are authorized of).
Test Owner: Akansh Agrawal, Akshan Agrawal and Manoj Kumar
Test Date: 19/03/2022 - 20/03/2022
Test Results: The access to various features and the linking of pages using the dashboard page worked fine.
Additional Comments: No additional comments

6. Participant list

Checking if the Instructor, TA/Tutor can see the users registered in the course.

Unit Details: This is where the Instructor, TA/Tutor can see people registered in the course.
Test Owner: Shubhan R and Lakshay Rastogi
Test Date: 21/03/2022 - 22/03/2022
Test Results: Instructor, TA/Tutor can see the users registered in the course
Additional Comments: No additional comments.

7. Contacting technical staff from the dashboard

Checking that the actors can send queries to the technical support staff.

Unit Details: This is where all the actors send queries regarding the portal to the technical support staff.
Test Owner: Shubhan R and Akshan Agrawal
Test Date: 21/03/2022 - 22/03/2022
Test Results: The prompt that the query was sent was missing. The sent query reached technical staff successfully.

Additional Comments: The prompt was added on 23/03/2022

8. Contacting Admins from the dashboard

Checking that the actors can send queries to the admins.

Unit Details: This is where all the actors send queries regarding the academic related stuff to the admins.
Test Owner: Shubhan R and Akshan Agrawal
Test Date: 21/03/2022 - 22/03/2022
Test Results: The prompt that the query was sent was missing. The sent query reached technical staff successfully.
Additional Comments: The prompt was added on 23/03/2022

9. Manage Users Button

Manage users button redundant in top of course page of instructor as other button is already there

Unit Details: Instructor uses it to manage the course participants
Primary Test Owner: Team same_storm (Beta Testing group)
Secondary Test Owner: Team Anonymous (Our group)
Test Date: 15/04/2022 - 15/04/2022
Test Results: Redundant Buttons.
Additional Comments: This bug was removed within the deadline.

10. Add Notification Button

No "add notification" button in the "manage notifications" tab of admin and technical staff
Unit Details: This button is used for posting notifications to the platform users.
Primary Test Owner: Team same_storm (Beta Testing group)
Secondary Test Owner: Team Anonymous (Our group)
Test Date: 15/04/2022 - 15/04/2022
Test Results: Button missing
Additional Comments: A minor bug occurred somehow due to which button disappeared. The bug was immediately fixed.

11. Home Page of Technical Staff (TS) and Admin

Home page of TS and Admin was not matching

Unit Details: Homepage similarity was checked here.

Primary Test Owner: Team same_storm (Beta Testing group)

Secondary Test Owner: Team Anonymous (Our group)

Test Date: 15/04/2022 - 15/04/2022

Test Results: Homepages were not similar

Additional Comments: A minor bug. It was fixed immediately

3   Integration Testing

1. General Forum under Course section

The posting forum and replying to the forum feature work properly across the users. Also checked that any user can not edit/delete other user's forum or reply. Checked if the anonymous feature worked correctly and other users could not see the name.

Module Details: This is where students and instructors and TA/Tutors of a course can post forums and reply to forums. Posting and replying can be done anonymously also by these actors.

Test Owner: Shubhan R and Lakshay Rastogi

Test Date: 25/03/2022 - 27/03/2022

Test Results: The forum feature was working fine across the interfaces. The posted forum could be seen to all the participants of the course and all the participants can reply to the forum as well as the reply was visible to all the participants. Other user's can not edit someone else's forum/reply posted as expected. If the anonymous feature was used to post the forum then the other users were not able to view the author's name for that forum.

Additional Comments: No additional comments

2. Notifications/Announcements under Course section

Checked if the posting notifications(announcements) feature works properly across the interfaces under the course section.

Module Details: The instructor(s) and the course tutors/TAs can post the notifications (announcements) which are visible to all the course participants.

Test Owner: Akshan Agrawal and Manoj Kumar

Test Date: 25/03/2022 - 27/03/2022

Test Results: The notification can only be added by the instructor(s) and tutors/TAs of the course as expected. The added notification is visible to all the participants of course under the notification dashboard as expected.

Additional Comments: No additional comments

3. Private Query under Course section

Checking the posting forum and resolving and changing status to the private query feature works properly across the users.

Module Details: The students can post the private query and instructors, tutors/TA can reply to them. The private query feature ensures that only the user who posted the query and instructors, tutors/TA can view it. The instructors, Tutors/TA can reply and change the status of the query.

Test Owner: Akansh Agrawal and Manoj Kumar

Test Date: 25/03/2022 - 27/03/2022

Test Results: The query feature worked fine across the interfaces. The posted private query could be seen only to instructor, tutor/TA and student who posted and no other can view or reply to the private query. Other user's can not edit someone else's private query posted as expected. The resolving feature was also working fine for all the participants.

Additional Comments: No additional comments

4. Manage feature under Course section (on the Instructor's interface)

Checked if managing the course participants with the assigned role (tutors (TAs) or students) worked properly.

Module Details: The instructor(s) can add the course participants and assign the roles accordingly. The added participants with the roles assigned can be viewed in the participants' list.

Test Owner: Akshan Agrawal and Lakshay Rastogi

Test Date: 27/03/2022 - 28/03/2022

Test Results: The manage feature to register the course participants worked fine. This functionality is only available only to the instructor(s) as expected. The participants added could be viewed in the participant's list across the interfaces successfully. The added participants can also access the course as per the roles assigned to them.

Additional Comments: No additional comments

5. Add users feature (on the Admin's and Technical Staff's interface)

Managing the participants on the portal with assigned roles worked properly.

Module Details: The Admin and Technical Staff can add course participants and assign the roles accordingly.

Test Owner: Akansh Agrawal and Shuban R

Test Date: 27/03/2022 - 28/03/2022

Test Results: The manage feature to register the participants of the portal worked fine. The participants added could be viewed in the participants list across the interfaces successfully. The added participants can access the portal as per the roles assigned.

Additional Comments: No additional comments

6. Institute bulletin feature (on the Admin's and Technical Staff's interface)

The posting of institute notifications and links feature works properly across the users.

Module Details: The admins and technical staff can post the notifications and links which are visible to all the users.

Test Owner: Shuban R, Lakshay Rastogi and Akshan Agrawal

Test Date: 27/03/2022 - 28/03/2022

Test Results: Adding the notification feature was working fine across the interfaces. The notification can only be added by the admin and Technical Staff as expected. The added notifications and links are visible to all the participants in the notification dashboard (just after the login page) as expected.
Additional Comments: No additional comments

7. Help Desk feature

The help desk feature to ask for help or address technical queries to the technical staff team worked properly.

Module Details: The Instructor(s), tutors/TAs, students, and admins can post the query to the technical staff team and the technical staff members can view and resolve the posted query.
Test Owner: Akansh Agrawal and Manoj Kumar
Test Date: 29/03/2022 - 30/03/2022
Test Results: The help desk feature was working fine across the users. The posted query can be resolved at technical staff's end and no other users (except the author and the technical staff) can view or resolve other's query as expected.
Additional Comments: No additional comments

8. Admin Query Feature

Checking if the admin query feature to address queries related to the academic-related stuff worked properly.

Module Details: The Instructor(s), tutors/TAs, students can post the query to the admins and the admins can view and resolve the posted query.
Test Owner: Akshan Agrawal and Akansh Agrawal
Test Date: 29/03/2022 - 30/03/2022
Test Results: The admin feature was working fine across the users. The posted query can be resolved at the admin's end and no other users (except the author and the admins) can view or resolve other's queries as expected.
Additional Comments: No additional comments

4 System Testing

1. **Requirement:** Through the student's interface various functionalities (such as posting forum, private query, replying and resolving them etc.) worked properly through the student's login as mentioned in the SRS.
    Test Owner: Akansh Agrawal, Shubhan R, Manoj Kumar and Lakshay Rastogi
    Test Date: 31/03/2022 - 01/04/2022
    Test Results: All the features available at the student's interface worked properly.
    Additional Comments: The future scope for integration with Pingala/Hello iitk portal could be done. The categorize feature would be implemented better in further releases of the software.

2. **Requirement:** Through the instructor's interface various functionalities (such as posting notification, addressing queries/forums and resolving them , managing course participants etc.) worked properly through the instructor's login.
    Test Owner: Akansh Agrawal, Shubhan R and Akshan Agrawal
    Test Date: 31/03/2022 - 01/04/2022
    Test Results: The features available at the instructor's interface worked properly.
    Additional Comments: The future scope for integration with pingala/hello iitk portal could be done. The categorize feature would be implemented better in further releases of the software.

3. **Requirement:** Through the tutor's (TA's) interface various functionalities (such as posting notification, addressing queries/forums and resolving them etc.) worked properly through the tutor's (TA's) login.
    Test Owner: Akansh Agrawal, Shubhan R and Akshan Agrawal
    Test Date: 01/04/2022 - 02/04/2022
    Test Results: All the features available at the student's interface worked properly.
    Additional Comments: The future scope for integration with pingala/hello iitk portal could be done.

4. **Requirement:** Through the Admin's interface various functionalities (such as posting notifications, addressing queries and resolving them and registering participants etc.) worked properly through the admin's login.
    Test Owner: Akansh Agrawal, Shubhan R and Akshan Agrawal
    Test Date: 31/03/2022 - 01/04/2022
    Test Results: All the features available at the student's interface worked properly.
    Additional Comments: The future scope for integration with pingala/hello iitk portal could be done.

5. **Requirement:** Through the Technical Staff's interface, various functionalities (such as posting notifications, addressing queries and resolving them etc.) worked properly through the technical staff's login.

Test Owner: Akansh Agrawal, Shubhan R, Manoj Kumar and Lakshay Rastogi

Test Date: 31/04/2022 - 01/04/2022

Test Results: All the features available at the student's interface worked properly.

Additional Comments: The future scope for integration with pingala/hello iitk portal could be done.

5 Conclusion

The testing was done for every feature of the software and was tested with different test cases. Even the communication and features between various modules were tested thoroughly to ensure there are no bugs. All the modules have been tested thoroughly. The difficulties faced were coming up with extreme cases to test our model to test it thoroughly, but still, we found extreme cases and tested them. The testing process can be improved by using automated software, but in our case, as the software was not heavy, we manually tested it efficiently.

Appendix A - Group Log

There has been a continuous interaction among the team members in formal meets as well as informally through whatsapp group/calls and in person activities. The team members were also in direct touch with the assigned TA through official Whatsapp Group and various zoom meetings for regular feedback and suggestions. Although testing was also done in parallel with the implementation but some of exclusive details of the various meets are as follows:

Meeting Minutes	Agenda
March 17, 2022 02:30 PM-03:30 PM	Group Meet, discussed bringing on the testing document.
March 19, 2022 03:00 PM-04:00 PM	Group Meet, for checking the various linking of pages and corresponding work distribution
March 20, 2022 06:00 PM-07:00 PM	Group Meet with the assigned TA for understanding and asking queries in the testing document.
March 21, 2022 02:00 PM-05:00 PM	Group Meet, for update on the various linking of pages and feature testing
March 25, 2022 10:00 PM-11:00 PM	Group Meet regarding discussion on feedback from the assigned TA for various sections of the testing document.
March 26, 2022 04:00 PM-06:00 PM	Group Meet for the various bugs check
March 28, 2022 04:00 PM-06:30 PM	Group Meet in which each group gave update on the various test cases used and the work done as per the work distribution done
April 1, 2022 05:00 PM-06:30 PM	Group Meet on update of the test case performed
April 2, 2022 12:00 PM-12:30 PM	Group Meet for the discussion on the progress made in the testing document
April 3, 2022 02:00 PM-06:00 PM	Completion of left over part of the testing document and final review
April 22, 2022 03:00 PM-05:00 PM	Meet to update the test document as per the feedback of beta testing
April 27, 2022 08:00 PM- 10:00 PM	To complete and review the newer version of this document