

PAST&E Project – Volunteer Management & Notification System

Validation & Verification Document

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I. Introduction:

This document is created to outline the process of validation and verification (V&V) for the PAST&E Project – Volunteer Management & Notification System. It also includes the V&V plan's scope, method of how the process will be carried out, and how to determine whether the system passes the test cases or not.

This section will give a brief introduction to the V&V document, which includes the document's purpose, scope, and target audiences.

The second section is the V&V Process Description, which list all the test cases, how the test cases are carried out, and how the situation is considered to be passed/no passed.

1. Purpose:

The purpose of this document is to list all the possible test cases with valid and invalid input, output, as well as system's behavior. On the other hand, qualifying determination will also be included.

2. Scope:

The scope of the test plan does not cover any dysfunctional behavior of the current website nor the current system. Test cases are to be applied on the implementing application and system; and hosting service will not be mentioned within the scope of this document.

3. Target Audiences:

The audience for this document is the Aperture test team, development, management and all members at PAST&E organization.

II. Validation and Verification Process Description:

This part contains all the test cases that will be applied on the implementing system, including user interface (UI) and backend process.

Each use case will include valid input/behavior and invalid input/behavior. While valid input will mostly come from users, behavior is to be determined against the system functions to process the queries. These two will result in output, valid output corresponds to valid input while invalid ones are shown in reply to invalid input. Invalid behavior of the system indicates that the system feature or function has failed to be executed, which mean the test case is not passed.

1. Volunteer UI Testing:

a. First-time log in:

Valid behavior: The volunteer is allowed to log in with his/her username and password which is given by the administrator. A valid behavior should display the homepage after the volunteer input the correct username and password. We will try to log in with correct and incorrect usernames and password to test if the credentials is valid or not.

Invalid behavior: The volunteer is unable to log in with his/her username and password. The system cannot link to his/her homepage after he/she log in. Also invalid behavior includes the system cannot verify the corresponding username and password. We will try to a variety of users' account to test if the system can recognize the invalid behaviors.

b. Volunteer change the password:

Valid behavior: a valid password should be no more than 6 characters, which include only a-z letters and 0-9 numbers. Whenever a good password set, the system would display the successful message. We will input a variety of valid passwords to test if the system could verify a serious of valid password.

Invalid behavior: a invalid password might more than 6 characters on length, or include special signs rather than numbers or alphabets. Whenever the wrong password input, the system could display wrong message and require user to reset. We will try a variety of invalid password to test if the system could recognize the bad passwords.

c. Volunteer view their schedules:

Valid behavior: After log in successfully, the volunteer click on the schedule to review his schedule. The system should link to the schedule window, and display the calendar.

Invalid behavior: The volunteer click on the schedule menu, the system would not link to the schedule page or display some other wrong message instead of the calendar.

d. Volunteers create their schedules:

Valid behavior: The volunteer click on the link to create schedule, the system would require the volunteer choose the date and time. The system should allow the volunteer choose any data and time that belong to the domain of PAST&E office hour. We will choose different data and tie to test if the system would accept those valid data.

Invalid behavior: The volunteer clink on the link to create schedule, the system link to an incorrect page. The date and time chosen by volunteer, which are not in the range of PAST&E office hours should be considered as invalid. We will try a group of invalid date and time to test if the system would prevent those invalid behaviors.

e. Volunteers update their schedules:

Valid behavior: The volunteer click on the choice of update, the system would link to the schedule page. Click on the edit, the system should allow the user change or delete the schedule. We will try to change and delete the time to test if the system would be functional on these two behaviors. After the change, the system should allow the user to save the change.

Invalid behavior: The system would not link to the corresponding schedule page. The user fails to choose the edit button.

f. Volunteers view their account information: All information related to this volunteer must be displayed. Any missing message will not pass the test.

Valid behavior: A volunteer is able to view his/her information (first and last name, email address, phone number, profile picture...). Clicking on the view button, the system should link to the information page.

Invalid behavior: If the volunteer is unable to access his/ her account, or click on the view button not bring him/her to the information page, or the information is not displayed correctly and completely.

g. Volunteers update their account information:

Valid behavior: A volunteer is able to update his/her information. Clicking on the update button, the system should link to the information page, and allow the volunteer change his/her personal information. Also, any new information should replace the old one.

Invalid behavior: A volunteer is unable to update his/her information, or the system is not link to corresponding volunteer's account, or the volunteer fail to update his/ her information, or the new information is not saved.

h. Volunteers upload their pictures:

Valid behavior: A volunteer is able to update his/her picture. Click on the upload button, the system should link to this volunteer's account and display his/her current picture. Then the volunteer is able to choose a new picture to replace the old one. The volunteer should be able to have two options on the resources of new pictures. A successful behavior should pass any of these two options.

Invalid behavior: The system link to a wrong page or not the corresponding volunteer's account. The volunteer cannot upload a new picture from hard driver or his/her computer, or the new picture cannot be displayed correctly.

i. Volunteers check the message sending to them:

Valid behavior: Allow the volunteer to view his/her message. The list of messages should be displayed accounting to the time of sending. A valid message should include the sender's name, sending time and the content of message. Any incomplete message should be considered as invalid. We will try different volunteers' account to test if those messages could be received and displayed correctly.

Invalid behavior: The system link to a wrong page which is not this volunteer's message box, or lost the time, sender's name during the transferring. Any message does not include all of the contents should be considered as a failed case.

- j. Volunteers send broadcast message:** The volunteers should be able to send out their messages.

Valid behavior: The system would link to the correct page to allow the volunteer to input his/her message. The volunteer is able to choose the receiver's title (volunteers, staff, and administrator) and fill in the content of message. Valid behaviors should allow the volunteer send message to no matter other volunteers, staff or administrator. We will try to send messages from a variety of volunteers and to different senders. The system should pass all of those cases.

Invalid behavior: The volunteer is unable to broadcast his/her messages, include failing to choose the sender's title and fill in the content of messages. If the message cannot reach to the right person, or the message is not complete, which means the system fail to pass the test.

2. Staff UI Testing:

- a. Retrieving public info of a volunteer:** All public info must be shown. Any missing will not pass the verification process. Clicking on a few username will be carried out in this test.

Valid behavior: A staff is able to access the page which list all the volunteers' users and to retrieve all visible information of a volunteer (first and last name, email address, phone number, profile picture...). Clicking on a volunteer's username should be linked to the public info page of that username.

Invalid behavior: If the staff is unable to access the volunteers' list or clicking on one user does not bring him or her to the volunteer's user profile, or volunteer's info is not totally listed out, the test is not passed.

- b. Creating volunteer's schedule:**

Valid behavior: When entering the volunteer's profile page, the link "Create schedule" should be visible to staff. Clicking on it will pop up a window allowing staff to enter start time and end time of the schedule entry. Clicking "Done" should close the window and bring the staff back to the volunteer's profile.

Invalid behavior/input: The staff is unable to access the page to create a schedule entry. If the system allows staff to enter time manually, input should follow a convention. If the required convention criteria is not met, the system should notify staff members that input is invalid.

Invalid input includes values outside of the valid range (00:00 to 23:59), non-numeric input, or

leaving blank. On the other hand, if time is entered by choosing an entry from a drop-down window, the system will check if the start time and end time are appropriate, which means start time must be smaller than end time. The system should notify staff members if this is not met.

c. Viewing a volunteer's schedule:

Valid behavior: When entering the volunteer's profile page, the link "Schedule" should be visible to staff. Clicking on it should bring the staff to calendar page of the volunteer. The calendar page shows all the entries of that volunteer within the current week.

Invalid behavior: The staff is unable to access the "Schedule" page. The calendar is filled with blank time or missing schedule entries of that volunteer.

d. Updating volunteer's schedule:

Valid behavior: When entering the volunteer's "Schedule" page, clicking on an entry will allow staff to choose whether to update or delete the selected schedule entry. Choosing to update will bring up a window similar to "Creating volunteer's schedule" section. Test plan for this use case is carried out the same as "Creating volunteer's schedule" section (part b). What differs is that after clicking "Done", the system will broadcast a message to all staff notifying about the change.

Invalid behavior/input: testing for invalid behavior or input is also carried out the same as "Creating volunteer's schedule" section (part b). In addition to that, if the system fails to broadcast a message to all staff members, it indicates that the test case is not passed.

e. Deleting a volunteer's schedule entry:

Valid behavior: Following part d (updating volunteer's schedule), choosing to delete the selected entry will ask the staff member to confirm in deleting the selected schedule entry. Choosing yes will delete the entry.

Invalid behavior: If the system fails to confirm with the staff member or the entry still exists after confirming deleted, it indicates the test is not passed.

f. Checking in a volunteer:

Valid behavior: Checking in a volunteer is done via the volunteer's user profile page. Clicking on the "Check In" button will put a timestamp record marking as "Checked In". After that the page is refreshed and there should be a "Check Out" button for later checking out.

Invalid behavior: Checking in didn't put a timestamp in the profile. The page is not refreshed or "Check Out" button does not appear. If any of those cases happens, the test case is not passed.

g. Checking out a volunteer:

Valid behavior: Checking out a volunteer is done via the volunteer's user profile page. Clicking on the "Check Out" button will put a timestamp record marking as "Complete". The timestamp record for checking out is put together with the open check in earlier and form a complete session. After that the page is refreshed and there should be a "Check In" button for later checking out.

Invalid behavior: Checking out didn't put a timestamp in the profile or didn't complete a volunteer's session. The page is not refreshed or "Check In" button does not appear. If any of those cases happens, the test case is not passed.

h. Running a report:

Valid behavior: After staff member clicks on the "Report" button, a window should pop up requiring staff to enter start and end date for the report to executed on. Clicking the "Generate" button should signal the system to run the report and bring up a new page containing the report.

Invalid input/behavior: Invalid input includes input does not follow the required format, start date is after the end date, or non-numeric characters. Invalid behavior is that when the system fails to bring up the report page.

3. Administrator UI Testing:

a. **Creating a user account:** Assuming that admin user is able to access to account creation page already.

Invalid input/behavior: Assuming admin user is taken into account creation page already, several test cases would be carried out. Invalid input would be user will enter missing information (such as email, phone number, physical address...), or enter in the wrong format (i.e. non-numeric

characters in birthday and phone number field...). The system will notify admin user there are fields that haven't been input. Invalid behavior would be the system is unable to retrieve all the input data and create new user account.

b. Retrieving a staff member's account:

Test cases and behavior for this use case is carried out the same as how staff member access to volunteer's public page (part 2a).

c. Updating a staff member's account:

Inherit from the last part, after clicking on staff member username, admin user is able to edit info of a staff user by choosing "Edit". This will bring admin user to the info page which is similar to "Creating a user account". Test case will be carried out the same as "Creating a user account" (3a).