Test Documentation for London Underground Ticketing System

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# Prerequisites

* The system is running Windows 10
* The system has NetBeans 12.0 installed
* The system has Tomcat server 8.0 installed
* Tomcat server has been linked to NetBeans (follow readme.md instructions for help)

# Test Set-Up

1. Tomcat should already be set up on the test machine. If it isn’t read the Readme.md.
2. In NetBeans click file >> open and select the project folder under test. Ensure the check box on the right is checked so it opens the projects in sub folders.
3. On the left of NetBeans there should be 8 projects the bottom two should have blue globe icons to left and be called project-web and project-web client. Right click on those and select run.

# Test Procedure 1

## Purpose

The purpose of this test procedure is to test the creation, deletion and editing of stations.

## TP1

|  |  |  |
| --- | --- | --- |
| **TP** | **Test Instructions** | **Pass / Fail** |
| 1.1 | If you ran both web apps earlier there should be a tab on your web browser called Station controller start page. If not go back to NetBeans and right click project-web and press run. The page should then open. The page should have 4 links and an image of station gates. This page is the index page. |  |
| 1.2 | **Precondition: a list of stations shall be returned from database using underlying code.** |  |
| Click on stationList.jsp a new web page should open it should have 12 buttons: create new station, delete all stations, show all zones, zone 1 – 9. Underneath those should be a complete list of stations with their zone, modify station button and delete station buttons. |
| 1.2.1 | Wait 20 seconds and the page should auto-refresh |  |
| 1.2.2 | Scroll through the station list and compare against LondonStation.xml they should match. |  |
| 1.2.3 | Click through zone 1 – 9 buttons and ensure the stations listed are within the corresponding zones. |  |
| 1.3 | **Precondition: when create new station button is clicked it creates a new station.** |  |
| Click create new station button, it should take you to another web page with green text stating the station has been created, please update station name. |
| 1.3.1 | Enter “test” in station name and click update station name button. The green text should change to station name updated from <original name> to test. |  |
| 1.3.2 | Replace zone 0 with test and press update station zone. An error message should appear where the green text currently is saying there is an issue with updating the zone. |  |
| 1.3.3 | Replace test in zone with 1 and click update station zone button. The error message should clear, and green text should replace it stating the zones been updated. |  |
| 1.4 | Click the button return to station list button. |  |
| 1.5 | The previous webpage should open, scroll to the bottom of the page and the created station should be at the very bottom. |  |
| 1.6 | Click modify station button, it should take you back to the web page to edit the name and zone. |  |
| 1.7 | Click return to station list button. Scroll to the bottom of the page and press the delete station button next to the test station. The message station deleted: test should be in green at the top of the page. If the page auto-refreshed there will now be an error as it tries to delete a page that doesn’t exist. |  |
|  | Return to the index page |  |

## TP1 Comments

|  |  |
| --- | --- |
|  | |
| Pass / Fail |  |

# Test Procedure 2

## Purpose

The purpose of this test procedure is to test the creation, deletion and modification of ticket machines.

## TP2

|  |  |  |
| --- | --- | --- |
| **TP** | **Test Instructions** | **Pass / Fails** |
| 2.1 | **Precondition: no ticket machines exist yet.** |  |
| Click on ticketMachineList.jsp. A new webpage should load with 2 buttons and an empty table with just the headings “Ticket machine name” and “Ticket machine station”. |
| 2.2 | Click the create new ticket machine button. It should take you to a new webpage and in green writing should appear “new ticket machine created, assign a station to it please”. Under that should be a button to return to the previous webpage, click it. |  |
| 2.3 | **Precondition: the ticket machine was successfully created.** |  |
| The table in page should be populated with a ticket machine with a UUID and station should be “UNASSIGNED”. To the right of that should be modify ticket machine and delete ticket machine buttons. |
| 2.4 | **Precondition: the ticket machine was successfully created.** |  |
| Click the delete ticket machine button. The machine should be removed from the list next auto-refresh. |
| 2.5 | **Precondition: the ticket machine was successfully deleted.** |  |
| Click create new ticket machine button again. There should be a Ticket Machine UUID text box, write test in it and press the button to update the UUID. A message in green text should appear stating the machine has been updated. The new UUID will auto-populate the text box. |
| 2.6 | **Precondition: the ticket machine was successfully created.** |  |
| Click return to machine list button and the table should now have one machine in it called “test” and zone still unassigned. |
| 2.7 | **Precondition: the ticket machine was successfully created.** |  |
| Click modify ticket machine button. The webpage to modify the machine should reappear. |
| 2.7.1 | In the station drop-down select Abbey Road and press the button to add the machine to the station. Green text should appear saying machine updated. |  |
| 2.7.2 | **Precondition: the ticket machine was successfully assigned.** |  |
| Click the return to machine list button. The table should now be updated to show test has station Abbey Road assigned to it. |
| 2.8 | Click the delete all stations button at the top of the page. The table should clear on next auto-refresh. |  |
| 2.9 | Repeat TP 2.5 to 2.7.2 to create a test ticket machine. |  |

## TP2 Comments

|  |  |
| --- | --- |
|  | |
| Pass / Fail |  |

# Test Procedure 3

## Purpose

This test procedure will test the customer side of the web application. It will test if a ticket can be bought by entering: a start date, start zone and end zone. It will also test if a price is calculated correctly for said ticket. This test procedure will also ensure the gate will only open with a valid ticket. It will also test the change config jsp as that is required for buying a ticket.

## TP3

|  |  |  |
| --- | --- | --- |
| **TP** | **Test Instructions** | **Pass / Fail** |
| 3.1 | Right click on project-web-client and select run. Ensure a webpage appears containing an image of a London underground gate and links to several different webpages. This is known as the index page. |  |
| 3.2 | Click the link to buy a ticket “ticketMachine.jsp”. Ensure a new page is loaded containing – top to bottom – 1 drop down box, 4 text boxes, 2 buttons and a big text area. The words Ticket machine UUID is invalid should appear at the top of the page in red writing. The very top should say Station: UNDEFINED. |  |
| 3.3 | Click the end station drop down box, the only options should be 2 “—Select--”. |  |
|  | Return to the index page. |  |
| 3.4 | Click the link that says changeConfig.jsp. Ensure a web page loads with 2 populated fields last update attempt and last successful update. These should be populated with the time and date of when you first entered the page. There should also be station name and zone both with null next to them. There should be one editable text box that has Ticket machine UUID to the left. The text box should be auto populated with a random UUID. |  |
| 3.4.1 | Remove the UUID and type in “test”. This ticket machine should exist from the one created previously in test procedure 2. Click the change ticket machine UUID button. The station name and zone should update to Abbey Road, 2. The last update and last successful update should update to the current time. |  |
| 3.4.2 | Remove test and write fail. Click the button. An error message should appear stating there was an issue updating the ticket machine UUID. |  |
| 3.4.3 | Enter test again in the UUID text box and click the button. |  |
| 3.4.4 | Press the return to index button. This should take you back to the index page. |  |
| 3.5 | Click the link to buy a ticket “ticketMachine.jsp”. Ensure a new page is loaded containing – top to bottom – 1 drop down box, 4 text boxes, 2 buttons and a big text area. The very top should say Station: Abbey Road. |  |
| 3.5.1 | Click on the drop-down box and ensure the list of stations in [Annex 1](#_Annex_1_-) is the same as the ones in the drop-down box. |  |
| 3.6 | The “valid from time” box should be editable and have the current time and date from when the web page was first opened. |  |
| 3.7.1 | Select any station in the dropdown box. Type in “test” into the valid from time and press the “checkout” button. An error message should appear in red underneath “Generate new ticket” stating the date/time was not valid. |  |
| 3.7.2 | Go back to the index page (start page) of the web app and click “ticketMachine.jsp” again. Keep end station on “—Select--" and press the “Checkout” button. An error message should appear in same place as last stating the station isn’t valid. |  |
| 3.8 | Select “Balham” for end station. Keep the “valid from time” to as it was when page loaded. Click “checkout” button. Start station and End station should clear and “price” should be updated. The value should be “£2.5” or “£5.0”. The value shouldn’t be editable. |  |
| 3.9.1 | For card number enter “111”. Click buy ticket. An error message should appear stating the card is invalid. |  |
| 3.9.2 | For card number enter “test”. Click buy ticket. The same error message should appear. |  |
| 3.10 | For card number enter “12345678901”. Click buy ticket. Printed ticket text area should be populated with xml the same as [Annex 2](#_Annex_2_–). The issue date and rate may be different due to time differences. |  |
| 3.11 | Copy the printed ticket and go back to the index page. Click openGate.jsp. Ensure a new web page opens which contains a big text area a button and “gate locked” in big red writing. |  |
| 3.12 | Paste the printed ticket into the text area. Click open gate button and gate locked should change to gate open in green. |  |
| 3.13.1 | Edit the cost in the printed ticket to 1.0. click open gate button. The text should revert to gate locked and be red. |  |
| 3.13.2 | Revert the price to 2.5 and change the rate to PEAK. Click the open gate button. The text should not be changed. |  |
| 3.13.3 | Revert rate to OFFPEAK and edit the issue date to be 1 day more this will be the last number representing the date. For example 2021-01-03 you would change the 03 to 04. Then click the open gate button. The text shouldn’t change. |  |
| 3.13.4 | Revert the date back and change the number of zones to 2 and click the open gate button. The text shouldn’t change. |  |
| 3.13.5 | Revert the number of zones back to 1 and delete the last character from the encrypted hash before the “=”. Click open gate and the text shouldn’t change. |  |
| 3.13.6 | Revert the hash back and remove the last character of ID. Click open gate button and the text shouldn’t change. |  |
| 3.13.7 | Revert the ID and click the open gate button. The text should change to gate open. |  |
| 3.14 | Go to the project folder location and open \project\web-client\Logger\TIcketLogger.txt. The file should contain the ticket xml that was seen in previous TPs. |  |
|  | Return to localhost:8080/projectwebfacade-client/ |  |

## TP3 Comments

|  |  |
| --- | --- |
|  | |
| Pass / Fail |  |

# Test Procedure 4

## Purpose

The purpose of this test procedure is to test the UI for changing the pricing schedule.

## TP4

|  |  |  |
| --- | --- | --- |
| **TP** | **Test Instructions** | **Pass / Fail** |
| 4.1 | Click on Scheduler.jsp. Ensure a new webpage opens containing 4 text boxes and a button. |  |
| 4.2 | Wait 10 seconds, the page should refresh. |  |
| 4.3.1 | The first text box “current pricing off peak” should not be editable |  |
| 4.3.2 | The second text box “current pricing peak” should not be editable |  |
| 4.4 | The top 2 text boxes should have values in them 2.5 the first and 5.0 the second. |  |
| 4.5.1 | In enter new peak pricing enter “test”. Press change pricing(s) button. An error message should appear at the top of the page stating there was an issue with the new pricing. |  |
| 4.5.2 | Remove “test” from enter peak pricing and put it in new off-peak pricing. Click the change pricing(s) button and the error message should still be displayed. |  |
| 4.5.3 | Enter “test” in both text boxes and click the button. The error message should not clear. |  |
| 4.6 | Enter 89 in peak pricing and click the button. Wait for the page to auto-refresh and the current peak pricing should change to 89. |  |
| 4.7 | Enter 89 in off-peak pricing and click the button. Wait for the page to auto-refresh and the current off-peak pricing should change to 89. |  |
| 4.8 | Enter 2.5 in off-peak text box and 5.0 to peak text box. Press the button. Wait for the page to refresh and the peak text box should change to 5.0 and the off-peak text box should change to 2.5. |  |
| 4.9 | Change the values of both peak and off-peak prices back to 89, the same way done in TP4. Refresh the page to ensure the changes were made and return to the index page. |  |
| 4.10 | Open the TicketMachine.jsp and select “Angel from the drop-down box”. Click checkout. |  |
| 4.10.1 | The price should have £89.0 in it. |  |

## TP4 Comments

|  |  |
| --- | --- |
|  | |
| Pass / Fail |  |

# Test Procedure 5

## Purpose

The purpose of this test procedure is to test changing the schedule of peak and off-peak rates.

## TP5

|  |  |  |
| --- | --- | --- |
| **TP** | **Test Instruction** | **Pass / Fail** |
| 5.1 | Go to the timeScheduler.jsp and click the hyperlink at the bottom. It should take you to a new web page with 4 buttons and 4 text boxes. |  |
| 5.2 | Type 17 into the hour text box for peak pricing and 19 in off peak pricing. Leave the minutes as 0. |  |
| 5.2.1 | Press the add time(s) button and wait for the page to auto-refresh. The list of text areas at the bottom should update with the new times entered. |  |
| 5.3 | Repeat TP 5.2 |  |
| 5.3.1 | Press the remove time(s) button and wait for the page to auto-refresh. The list of text areas should return to how it was when you first entered the page. |  |
| 5.4 | Press the remove all time(s) button, wait for the page to reload. You should be left with just 1 text area that has 0 hours and 0 minutes. |  |
| 5.5 | Add back: hour 9 minute 0 for peak and hour 11 minute 30 for off peak. Press add time(s) button and after the refresh the list of text areas should update. |  |
| 5.6 | Press the add time(s) button with no data entered in hour for both text boxes. An error message should appear in red stating there was an issue. |  |
| 5.7 | Do the same for remove time(s) button. |  |
| 5.8 | Put “test” in both hour text boxes and click add time(s) button, an error message stating there was an issue should appear again. |  |
| 5.9 | Do the same for remove time(s) button |  |
| 5.10 | Add a new peak schedule for the current hour and return to ticketMachine.jsp |  |
| 5.10.1 | Set the station to Aldgate and click checkout. The price should be 5.0 |  |
|  | Close the browser and exit NetBeans. |  |

## TP5 Comments

|  |  |
| --- | --- |
|  | |
| Pass / Fail |  |

# Annex 1 - Stations

An XML document containing the station list can be found in the same folder as this Test Document.

# Annex 2 – Ticket XML

<?xml version="1.0" encoding="UTF-8" standalone="yes"?>

<ticket>

<startStation>Abbey Road</startStation>

<cost>2.5</cost>

<encryptedHash>bCXe4+yoj0/ZUqvG3+mvvjRvdRkjeZo67ipF/pmgDc+i2dRmvFnCv+LXRLs2Tk061jRY9ySwu4G1lZ0/Ecrll4/gPmLktZwv1W0Phu477YzKf53WS6ijtx6B46f/R4cYN52qF/L8L4w8eEBC0n5lE5c+5YUWV9w/r3r4zCzfLOs=</encryptedHash>

<rate>OFFPEAK</rate>

<issueDate>2021-01-03T12:53:54Z</issueDate>

<numberOfZones>1</numberOfZones>

<Id>8d43d89e-abbd-4899-be17-1085f99d0203</Id>

</ticket>