

SUNWAY UNIVERSITY



School of Computing and Artificial Intelligence

Faculty of Engineering and Technology

Sunway University

SYSTEM TEST DOCUMENT

SEMESTER	: JULY 2025
COURSE NAME	: BIS2102 INFORMATION SYSTEM ANALYSIS AND DESIGN
INSTRUCTOR	: ASSOC. PROF. TS. DR. ASLINA BAHARUM
SYSTEM NAME	: Smart Waitlist System for Enhancing iZone Subject Enrolment
PROGRAM NAME	: Bachelor of Information Systems (Honours) (Data Analytics)
CONTACT PERSON	: <i>Keertana, 23109614@imail.sunway.edu.my, 011-28353640</i>

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DATE OF SUBMISSION	19/07/2025
ACTUAL DATE OF SUBMISSION	1907/2025
NO OF DAYS LATE	0

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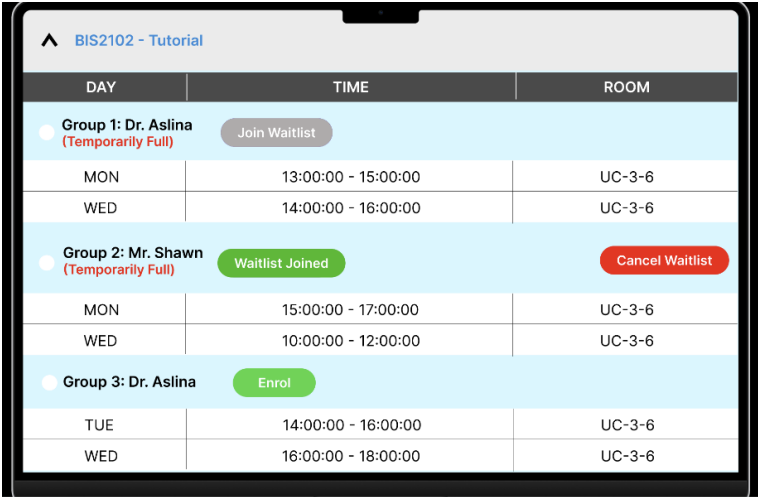
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1.0. Use Case Testing

Tester	<ol style="list-style-type: none">1. Fong Wesley2. Chong Rui Qing3. Prof. Lee Chien Sing4. Low Shan May5. Sanny6. Wong Jo Ee7. Chong Yi Jie8. Soong Shuki9. Goo Weng Xi10. Jacey Ng Siew Fang
Test date	13/7/2025 – 17/7/2025
Prototype developer	<ol style="list-style-type: none">1. Liu Yong Le2. Wong Hui San3. Ayu Wen Li4. Siow Qi Yung5. Keertana A/P Subramaniam

1.1 Join Waitlist

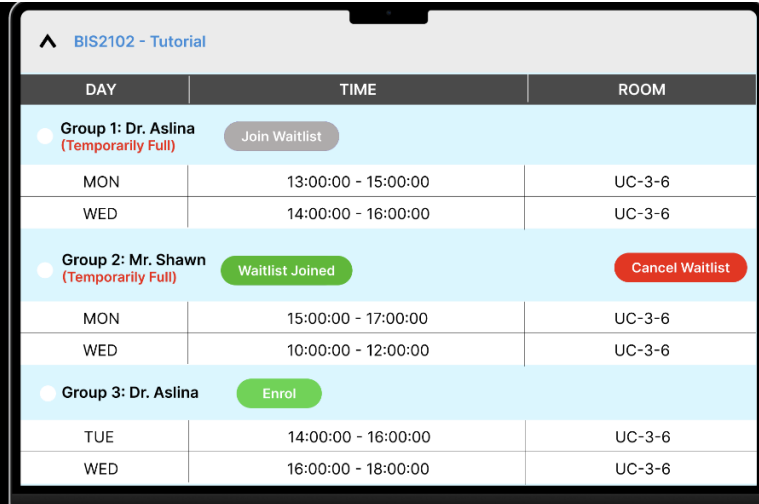
1.1.1 Test Case 1 – Waitlist Joined

Test Objective	When user click on ‘Join Waitlist’ button, it becomes ‘Waitlist Joined’.
Potential Test Inputs (with example)	Click ‘Join Waitlist’ for any timeslot
Expected Test Outputs (with example)	<p>‘Join Waitlist’ button becomes ‘Waitlist Joined’ button in green.</p> 
Test Procedures	<ol style="list-style-type: none"> 1. Log in to iZone 2. Click “Start Enrol” to view the timetable that have been enrolled previously. 3. Click “Edit” to edit the subject enrolment. 4. Choose a subject time slot 5. Click ‘Join Waitlist’ button. 6. ‘Join Waitlist’ button turns to ‘Waitlist Joined’

Actual Test Results

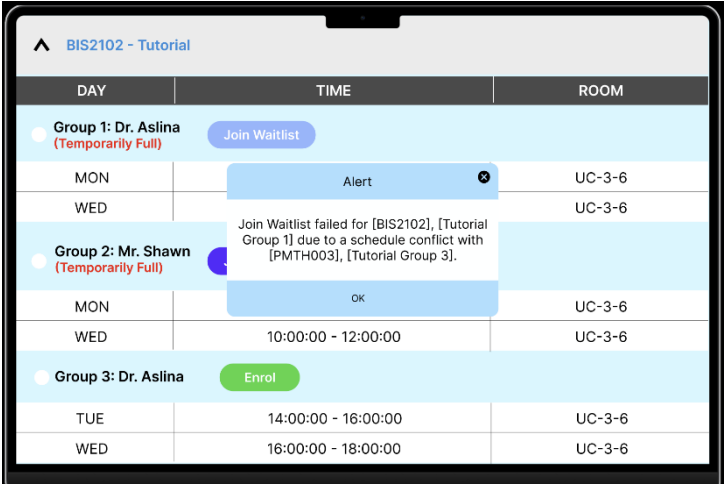
The actual test results are the same as the expected test output.

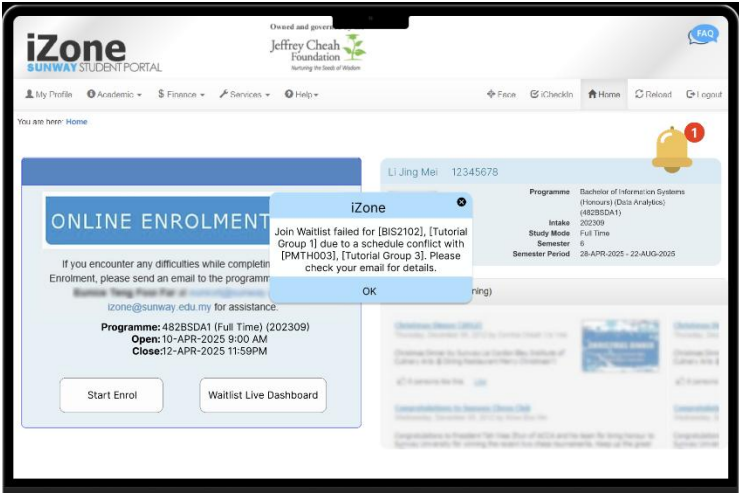
All 10 respondents confirmed that the “Join Waitlist” button updates to “Waitlist Joined” in green after clicking.



DAY	TIME	ROOM
Group 1: Dr. Aslina (Temporarily Full) Join Waitlist		
MON	13:00:00 - 15:00:00	UC-3-6
WED	14:00:00 - 16:00:00	UC-3-6
Group 2: Mr. Shawn (Temporarily Full) Waitlist Joined Cancel Waitlist		
MON	15:00:00 - 17:00:00	UC-3-6
WED	10:00:00 - 12:00:00	UC-3-6
Group 3: Dr. Aslina Enrol		
TUE	14:00:00 - 16:00:00	UC-3-6
WED	16:00:00 - 18:00:00	UC-3-6

1.1.2 Test Case 2 – Schedule Conflict

Test Objective	System prevents students from joining a waitlist if the selected class overlaps with their existing enrolled schedule. An alert is displayed when clicking “Join Waitlist” button.
Potential Test Inputs (with example)	Students click “Join Waitlist” for [BIS2102], [Tutorial Group 1], that clashes with an already enrolled class.
Expected Test Outputs (with example)	<p>When students click “Join Waitlist” for a class that has a time conflict with existing enrolled class, an alert message pops out: “Join Waitlist failed for [Subject Code], [Group Number] due to schedule conflict with [Subject Code], [Group Number].”</p>  <p>When clicking “Back to Homepage” from the enrolment page, a red dot appears on the alert notification icon. When clicked, it shows the message: “Join Waitlist failed for [Subject Code], [Group Number] due to a schedule conflict</p>

	<p>with [Subject Code], [Group Number]. Please check your email for more details.”</p>  <p>The screenshot shows the iZone Sunway Student Portal interface. At the top, there's a navigation bar with links for My Profile, Academic, Finance, Services, and Help. A user profile box for 'Li Jing Mei' (ID: 12345678) is visible, showing program details for 'Bachelor of Information Systems (Honours) (Data Analytics) (4828SDA1)'. A blue notification box in the center states: 'Join Waitlist failed for [BIS2102], [Tutorial Group 1] due to a schedule conflict with [PMTH003], [Tutorial Group 3]. Please check your email for details.' Below this, there's an 'ONLINE ENROLMENT' section with instructions and a 'Start Enrol' button. The enrolment period is listed as 'Open: 10-APR-2025 9:00 AM' and 'Close: 12-APR-2025 11:59 PM'.</p>
<p>Test Procedures</p>	<ol style="list-style-type: none"> 1. Log in to iZone. 2. Click “Start Enrol” to view the timetable that have been enrolled previously. 3. Click “Edit” to edit the subject enrolment. 4. Click “Enrol” to PMTH003 (Tutorial), Group 3 5. Click “Join Waitlist” for BIS2102 (Tutorial), Group 1 6. Alert message pops out showing schedule conflict. 7. Click ‘Back to Homepage’ 8. Click notification icon at the top right 9. Alert message pops out showing schedule conflict.

Actual Test Results

The actual test results are the same as the expected test results. 90% of the respondents stated that the alert worked as intended.

^ BIS2102 - Tutorial

DAY	TIME	ROOM
Group 1: Dr. Aslina (Temporarily Full) Join Waitlist		
MON	Alert	UC-3-6
WED		UC-3-6
Join Waitlist failed for [BIS2102], [Tutorial Group 1] due to a schedule conflict with [PMT003], [Tutorial Group 3].		
Group 2: Mr. Shawn (Temporarily Full) OK		
MON		UC-3-6
WED	10:00:00 - 12:00:00	UC-3-6
Group 3: Dr. Aslina Enrol		
TUE	14:00:00 - 16:00:00	UC-3-6
WED	16:00:00 - 18:00:00	UC-3-6

Owned and governed by Jeffrey Cheah Foundation

iZone SUNWAY STUDENT PORTAL

My Profile Academic Finance Services Help

You are here: Home

Li Jing Mei 12345678

ONLINE ENROLMENT

If you encounter any difficulties while completing enrolment, please send an email to the programme coordinator at izone@sunway.edu.my for assistance.

Programme: 482BSDA1 (Full Time) (202309)
Open: 10-APR-2025 9:00 AM
Close: 12-APR-2025 11:59PM

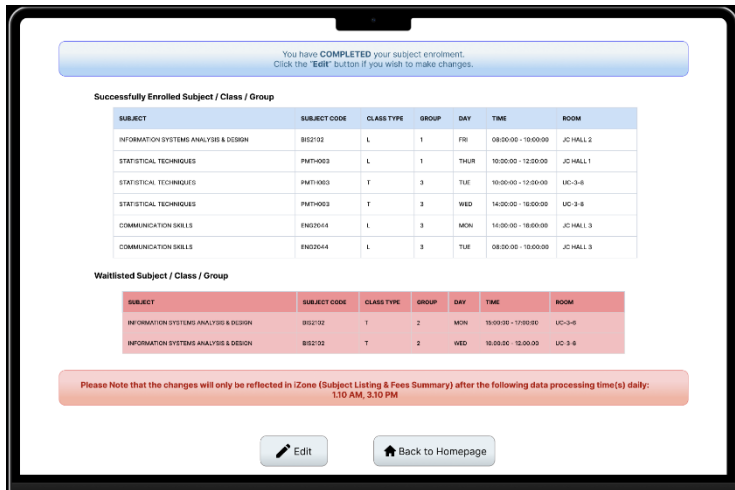
[Start Enrol](#) [Waitlist Live Dashboard](#)

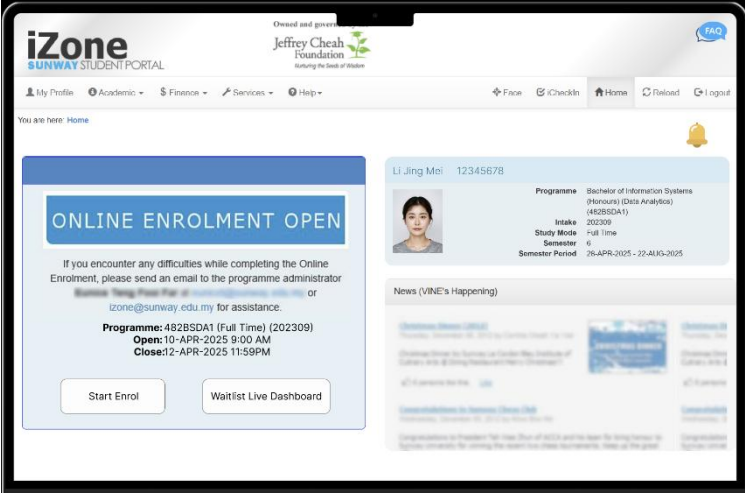
Programme: Bachelor of Information Systems (Honours) (Data Analytics) (482BSDA1) (202309)
Intake: 202309
Study Mode: Full Time
Semester: 6
Semester Period: 28-APR-2025 - 22-AUG-2025

Join Waitlist failed for [BIS2102], [Tutorial Group 1] due to a schedule conflict with [PMT003], [Tutorial Group 3]. Please check your email for details.

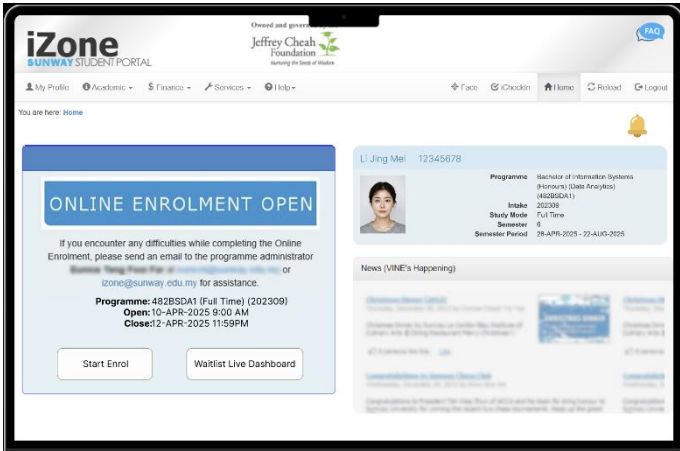
[OK](#)

1.1.3 Test Case 3 – Submit & Back to Homepage

Test Objective	Student clicking “Submit” it will navigate to the timetable page, clicking ‘Back to Homepage’ will navigate to the iZone Homepage.
Potential Test Inputs (with example)	Students click the “Submit” button before or after they joined the waitlist. Students click “Back to Homepage” button.
Expected Test Outputs (with example)	User will be navigated to Subject Enrolment Timetable page when they click ‘Submit’ button. If they joined a waitlist and click ‘Submit’, it will navigate to this Subject Enrolment Timetable page:  <p>The screenshot displays the 'Subject Enrolment Timetable' page. At the top, a blue banner states: 'You have COMPLETED your subject enrolment. Click the "Edit" button if you wish to make changes.' Below this, there are two tables. The first table is titled 'Successfully Enrolled Subject / Class / Group' and lists six subjects with their respective codes, class types, groups, days, times, and rooms. The second table is titled 'Waitlisted Subject / Class / Group' and lists two subjects. At the bottom, a red banner provides a note: 'Please Note that the changes will only be reflected in iZone (Subject Listing & Fees Summary) after the following data processing time(s) daily: 1:10 AM, 3:10 PM'. Two buttons are visible at the bottom: 'Edit' and 'Back to Homepage'.</p>

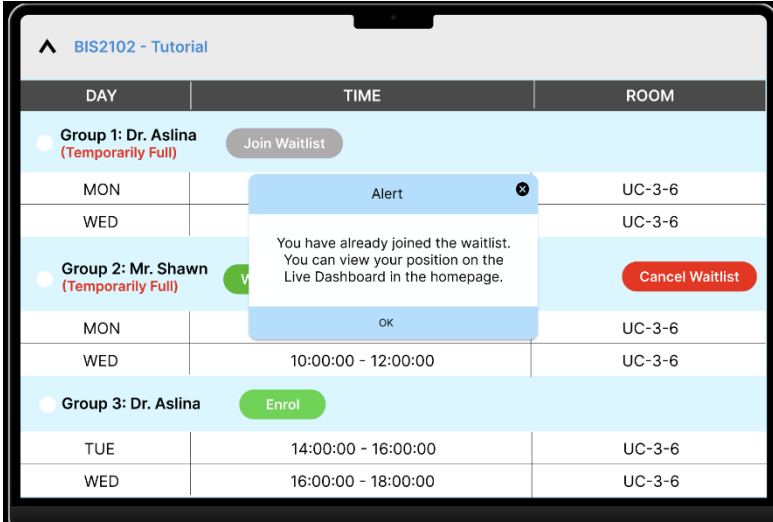
	<p>User will be navigated to iZone Homepage when they click ‘Back to Homepage’ button.</p> 
<p>Test Procedures</p>	<p>For ‘Submit’ button:</p> <ol style="list-style-type: none"> 1. Log in to iZone. 2. Click “Start Enrol” to view the timetable that have been enrolled previously. 3. Click “Edit” to edit the subject enrolment. 4. Choose a subject time lot 5. Click ‘Join Waitlist’ button to join waitlist for a time slot 6. Click ‘Submit’ button 7. Page navigates to Subject Enrollment Timetable Page <p>For ‘Back to Homepage’ button:</p> <ol style="list-style-type: none"> 1. Log in to iZone.

	<div>2. Click “Start Enrol” to view the timetable that have been enrolled previously.</div> <div>3. Click “Edit” to edit the subject enrolment.</div> <div>4. Click ‘Back to Homepage’ button if user didn’t wish to do join any waitlist or enroll in any class.</div> <div>5. Page navigates to iZone Homepage</div>																																																																						
Actual Test Results	<div>The actual test results are the same as the expected test output.</div> <div>When user joined a waitlist and click ‘Submit’, it navigated to this Subject Enrolment Timetable page:</div> <div><div><div><div>You have COMPLETED your subject enrolment. Click the ‘Edit’ button if you wish to make changes.</div><div><div>Successfully Enrolled Subject / Class / Group</div><table><thead><tr><th>SUBJECT</th><th>SUBJECT CODE</th><th>CLASS TYPE</th><th>GROUP</th><th>DAY</th><th>TIME</th><th>ROOM</th></tr></thead><tbody><tr><td>INFORMATION SYSTEMS ANALYSIS & DESIGN</td><td>BS2102</td><td>L</td><td>1</td><td>FR</td><td>09:00:00 - 10:00:00</td><td>JC HALL 2</td></tr><tr><td>STATISTICAL TECHNIQUES</td><td>PMTH063</td><td>L</td><td>1</td><td>THUR</td><td>10:00:00 - 12:00:00</td><td>JC HALL 1</td></tr><tr><td>STATISTICAL TECHNIQUES</td><td>PMTH063</td><td>T</td><td>3</td><td>TUE</td><td>10:00:00 - 12:00:00</td><td>UC 3-8</td></tr><tr><td>STATISTICAL TECHNIQUES</td><td>PMTH063</td><td>T</td><td>3</td><td>WED</td><td>14:00:00 - 15:00:00</td><td>UC 3-8</td></tr><tr><td>COMMUNICATION SKILLS</td><td>PM20014</td><td>L</td><td>3</td><td>MON</td><td>14:00:00 - 15:00:00</td><td>JC HALL 1-3</td></tr><tr><td>COMMUNICATION SKILLS</td><td>PM20014</td><td>L</td><td>3</td><td>TUE</td><td>08:00:00 - 10:00:00</td><td>JC HALL 1-3</td></tr></tbody></table><div><div>Waitlisted Subject / Class / Group</div><table><thead><tr><th>SUBJECT</th><th>SUBJECT CODE</th><th>CLASS TYPE</th><th>GROUP</th><th>DAY</th><th>TIME</th><th>ROOM</th></tr></thead><tbody><tr><td>INFORMATION SYSTEMS ANALYSIS & DESIGN</td><td>BS2102</td><td>T</td><td>2</td><td>MON</td><td>15:00:00 - 17:00:00</td><td>UC 3-8</td></tr><tr><td>INFORMATION SYSTEMS ANALYSIS & DESIGN</td><td>BS2102</td><td>T</td><td>2</td><td>WED</td><td>10:00:00 - 12:00:00</td><td>UC 3-8</td></tr></tbody></table><div>Please Note that the changes will only be reflected in iZone (Subject Listing & Fees Summary) after the following data processing time(s) daily: 1:10 AM, 3:10 PM</div><div><div>Edit</div><div>Back to Homepage</div></div></div></div></div></div></div>	SUBJECT	SUBJECT CODE	CLASS TYPE	GROUP	DAY	TIME	ROOM	INFORMATION SYSTEMS ANALYSIS & DESIGN	BS2102	L	1	FR	09:00:00 - 10:00:00	JC HALL 2	STATISTICAL TECHNIQUES	PMTH063	L	1	THUR	10:00:00 - 12:00:00	JC HALL 1	STATISTICAL TECHNIQUES	PMTH063	T	3	TUE	10:00:00 - 12:00:00	UC 3-8	STATISTICAL TECHNIQUES	PMTH063	T	3	WED	14:00:00 - 15:00:00	UC 3-8	COMMUNICATION SKILLS	PM20014	L	3	MON	14:00:00 - 15:00:00	JC HALL 1-3	COMMUNICATION SKILLS	PM20014	L	3	TUE	08:00:00 - 10:00:00	JC HALL 1-3	SUBJECT	SUBJECT CODE	CLASS TYPE	GROUP	DAY	TIME	ROOM	INFORMATION SYSTEMS ANALYSIS & DESIGN	BS2102	T	2	MON	15:00:00 - 17:00:00	UC 3-8	INFORMATION SYSTEMS ANALYSIS & DESIGN	BS2102	T	2	WED	10:00:00 - 12:00:00	UC 3-8
SUBJECT	SUBJECT CODE	CLASS TYPE	GROUP	DAY	TIME	ROOM																																																																	
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COMMUNICATION SKILLS	PM20014	L	3	TUE	08:00:00 - 10:00:00	JC HALL 1-3																																																																	
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INFORMATION SYSTEMS ANALYSIS & DESIGN	BS2102	T	2	WED	10:00:00 - 12:00:00	UC 3-8																																																																	

	<p>User is navigated to iZone Homepage when they clicked ‘Back to Homepage’ button.</p>  <p>All the respondents mentions that upon clicking both the “Submit” and “Back to Homepage” button, they were redirected appropriately.</p>
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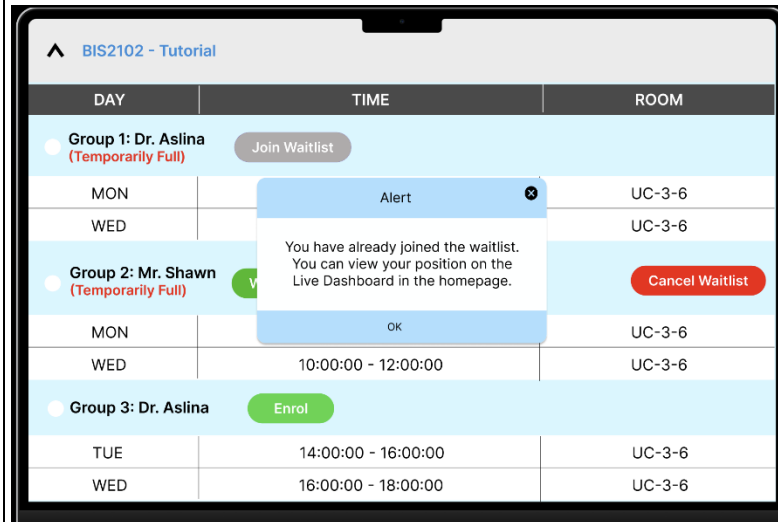
1.1.4 Test Case 4 – Duplicate Join Alert

Test Objective	If student click ‘Waitlist Joined’ again it will show a pop-up notification saying students already join waitlist.
Potential Test Inputs (with example)	Students click the Join Waitlist button again after they have joined the waitlist

<p>Expected Test Outputs</p> <p>(with example)</p>	<p>Waitlist Joined message pop up: “You have already joined the waitlist. You can view your position on the Live Dashboard in homepage.”</p>  <p>The screenshot shows a mobile application interface for 'BIS2102 - Tutorial'. It features a table with columns for DAY, TIME, and ROOM. There are three groups listed: Group 1 (Dr. Aslina, Temporarily Full), Group 2 (Mr. Shawn, Temporarily Full), and Group 3 (Dr. Aslina). Group 1 has a 'Join Waitlist' button. Group 2 has a green 'V' icon and a 'Cancel Waitlist' button. Group 3 has a green 'Enrol' button. An alert pop-up is displayed over the table, stating: 'Alert', 'You have already joined the waitlist. You can view your position on the Live Dashboard in the homepage.', and an 'OK' button.</p>
<p>Test Procedures</p>	<ol style="list-style-type: none"> 1. Log in to iZone. 2. Click “Start Enrol” to view the timetable that have been enrolled previously. 3. Click “Edit” to edit the subject enrolment. 4. Choose a subject time lot (BIS2102, Tutorial Group 2). 5. Click ‘Join Waitlist’ button 6. Click ‘Waitlist Joined’ button again 7. Alert message pops out showing waitlist joined

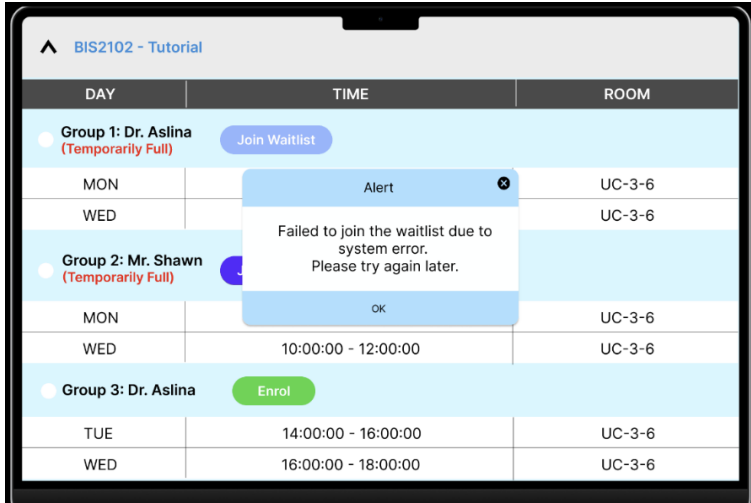
Actual Test Results

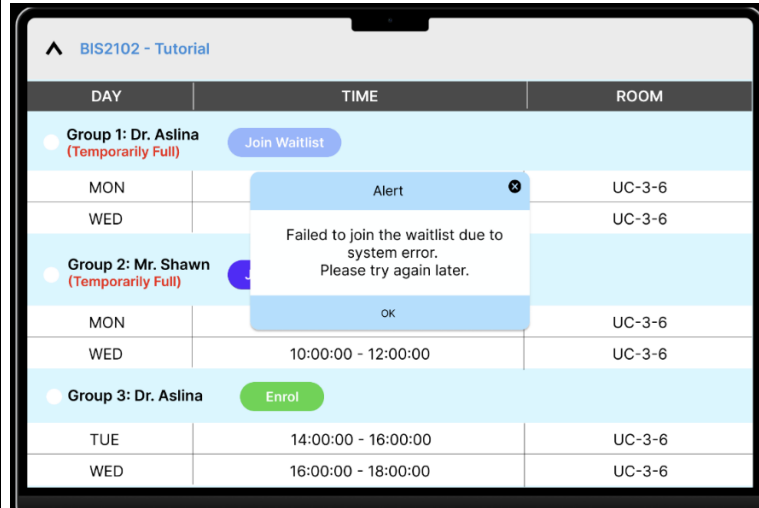
The actual test results are the same as the expected test output.



All the respondents stated that the alert was displayed correctly.

1.1.5 Test Case 5 – System Error

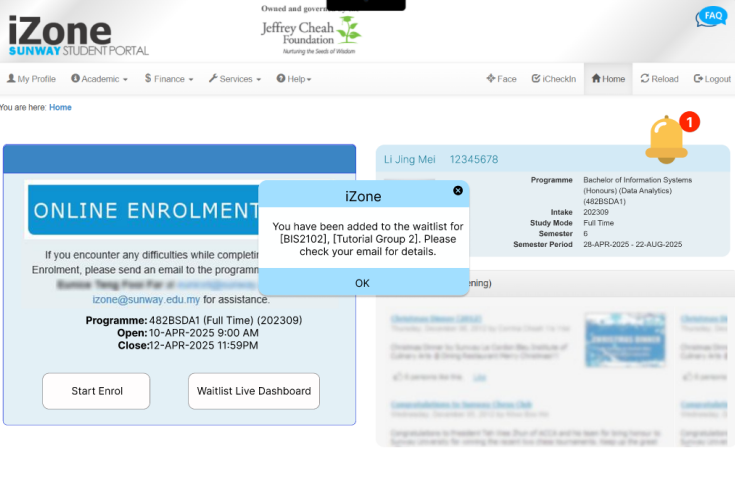
Test Objective	System shows error message when user click on 'Join Waitlist' button.
Potential Test Inputs (with example)	Click 'Join Waitlist' for any timeslot on 'System Error' page
Expected Test Outputs (with example)	<p>Error message pop up: "Failed to join waitlist due to system error. Please try again later."</p>  <p>The screenshot shows a mobile application interface for 'BIS2102 - Tutorial'. It features a table with columns 'DAY', 'TIME', and 'ROOM'. There are three groups of subjects: Group 1 (Dr. Aslina, Temporarily Full), Group 2 (Mr. Shawn, Temporarily Full), and Group 3 (Dr. Aslina). Group 1 and 2 have 'Join Waitlist' buttons, while Group 3 has an 'Enrol' button. An error message pop-up is displayed over the table, stating: 'Failed to join the waitlist due to system error. Please try again later.' with an 'OK' button.</p>
Test Procedures	<ol style="list-style-type: none"> 1. Click 'System Error When Join Waitlist' flow on the left panel. 2. Choose a subject time slot 3. Click 'Join Waitlist' button 4. Alert message pops out showing system error
Actual Test Results	The actual test results are the same as the expected test output.

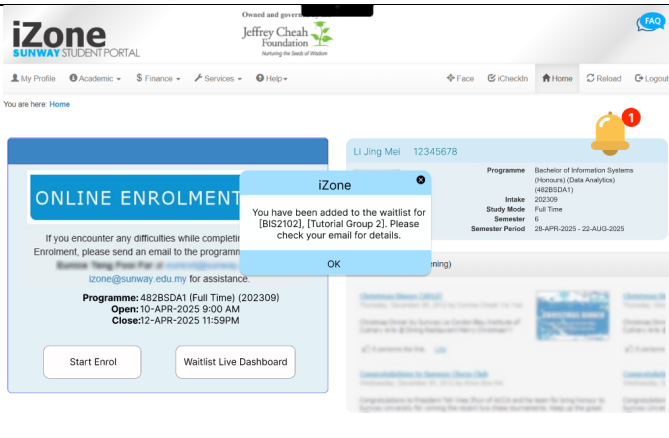


60% of the respondents saw the correct error message whereas the other 40% did not. This may be due to difficulty in navigation to the system error page.

1.2 Auto Enrolment with Notification

1.2.1 Test Case 1 – Alert Notification (Join Waitlist)

Test Objective	When a user joins the waitlist, an alert on the iZone homepage will display "You have been added to the waitlist for [Subject code], [Group Number]. Please check your email for details."
Potential Test Inputs (with example)	After a user clicks 'Join Waitlist' for a full class, a red dot appears on the alert notification when they return to the homepage. Users can click the alert icon to view the message.
Expected Test Outputs (with example)	 <p>The screenshot shows the iZone Student Portal homepage. A user is logged in as Li Jing Mei (12345678). A blue alert notification box is displayed in the center, stating: "You have been added to the waitlist for [BIS2102], [Tutorial Group 2]. Please check your email for details." The notification has an "OK" button. In the top right corner, a bell icon with a red dot indicates a new alert. The background shows the "ONLINE ENROLMENT" banner and various program details.</p> <p>An alert notification pops up on the homepage after joining a waitlist and clicking the bell icon with red dot. Click “OK” or “x” to return to the page, and the red dot from the bell icon will disappear.</p> <p>Example: After joining a waitlist, an alert message is displayed: “You have been added to the waitlist for</p>

	<p>[BIS2102], [Tutorial Group 2]. Please check your email for details.” This appears when you return to the homepage and click the bell icon.</p>
Test Procedures	<ol style="list-style-type: none"> 1. Click “Start Enrol” to begin subject enrolment. 2. Choose desired subject time slot that is temporarily full. 3. Click “Join Waitlist” button 4. Click on the “Submit button” 5. User will be redirected to a page showing timetables of subjects enrolled and waitlist joined. 6. Click on “Back to Homepage” button to return to the iZone homepage. 7. The homepage will show a bell icon with a red dot, click on the icon. 8. A pop up notification displaying “You have been added to the waitlist for [Subject code], [Group Number]. Please check your email for details.”
Actual Test Results	 <p>The screenshot displays the iZone Sunway Student Portal interface. At the top, the header includes the Sunway logo, navigation links (My Profile, Academic, Finance, Services, Help), and user information (Li Jing Mei, 12345678). A notification bell icon with a red dot is visible. A modal window titled "ONLINE ENROLMENT" is open, displaying a message: "You have been added to the waitlist for [BIS2102], [Tutorial Group 2]. Please check your email for details." Below the message are "OK" and "Cancel" buttons. The background shows the main portal content, including a "Programme" section for Bachelor of Information Systems (Honours) (Data Analytics) (402BISDA1) and a "Start Enrol" button.</p>

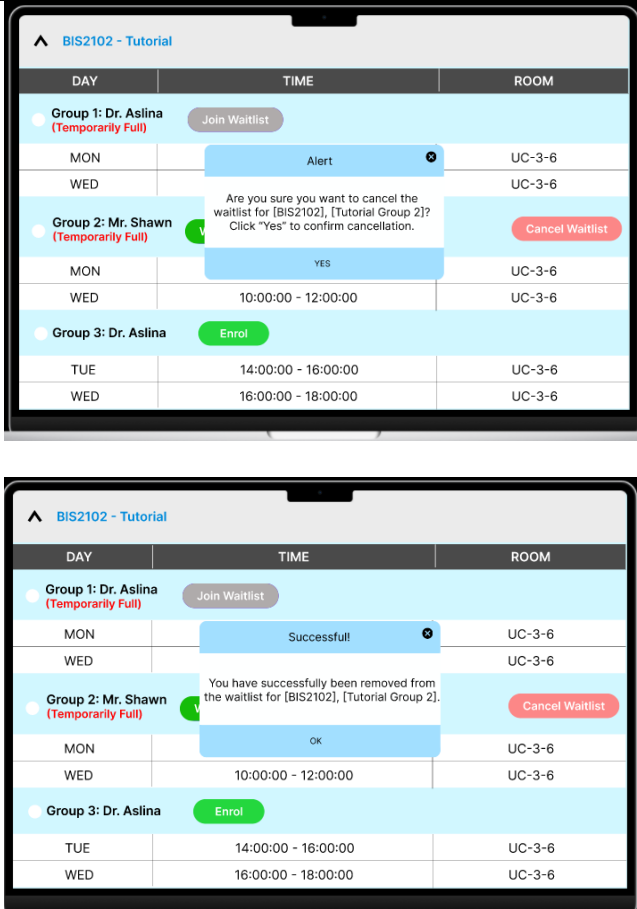
	10/10 respondents stated that the notification appeared as expected.
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1.2.2 Test Case 2 – Cancel Waitlist

Test Objective	<p>System shows a message to confirm cancellation when clicking ‘Cancel Waitlist’ button and another alert message to show successful cancellation.</p> <p>By closing the alert message on successful cancellation, the page will navigate back to the initial subject enrollment page.</p>
Potential Test Inputs (with example)	Click ‘Cancel Waitlist’ button for a ‘Waitlist Joined’ time slot.
Expected Test Outputs (with example)	<p>1. Confirmation message pop up: “Are you sure you want to cancel waitlist for [Subject Code], [Group Number]? Click yes to confirm cancellation.”</p> <p>2. After clicking ‘Yes’, alert message pop up: “You have successfully been removed from the waitlist for [Subject Code], [Group Number]. Please check your email for details.”</p> <p>3. Page navigate back to the initial subject enrollment page after closing the alert message.</p>

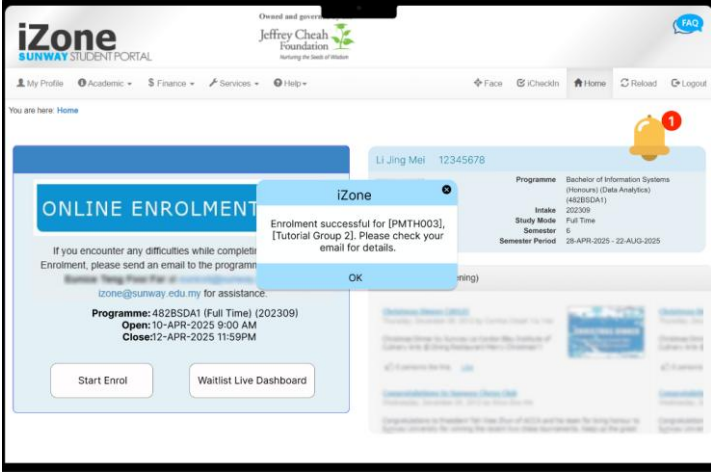
Test Procedures

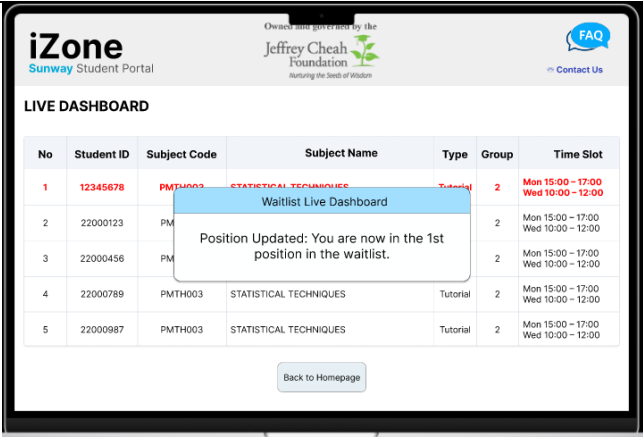
1. Open the subject enrolment page
2. Choose a subject time slot
3. Click 'Join Waitlist' button

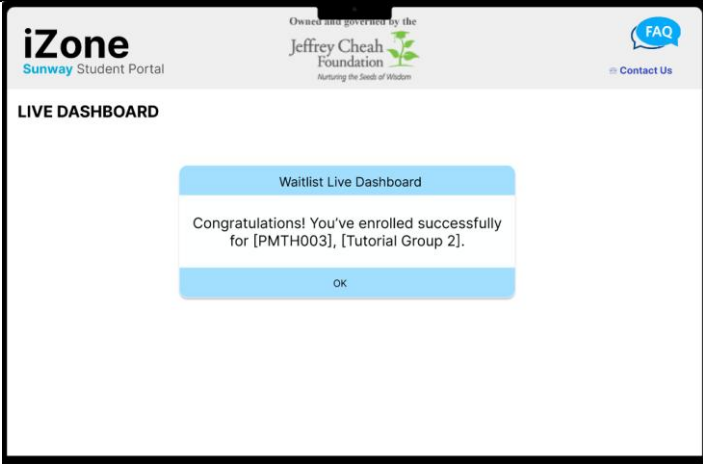
	<p>4. Click ‘Cancel Waitlist’ button next to ‘Waitlist Joined’ button</p> <p>5. Click ‘Yes’ to confirm cancellation</p> <p>6. Click ‘Ok’ or ‘x’ on successful cancellation alert message</p>
Actual Test Results	 <p>All the respondents noted that they receive the confirmation and success message after cancelling the waitlist.</p>

1.2.3 Test Case 4 – Auto-Enrol

Test Objective	To confirm that when a waitlist slot becomes available, the system auto-enrols the student, removes them from the
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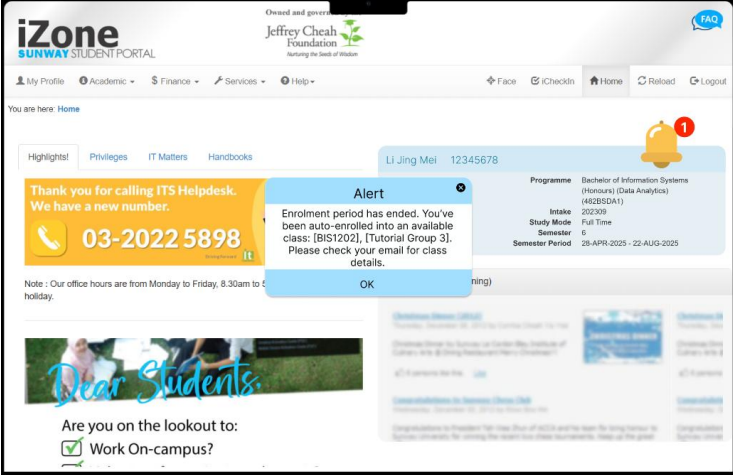
	waitlist, and displays a confirmation alert on the iZone homepage.
Potential Test Inputs (with example)	Click ‘View Live Dashboard’ for any timeslot and refresh the page. Next, return to the homepage and click on the bell icon with a red dot indicating that there is an alert.
Expected Test Outputs (with example)	 <p>After refreshing the live dashboard which shows that the user has moved up to be the first in the dashboard, an alert notification pops up on the homepage, displaying "Enrolment successful for [Subject Code], [Group Number]. Please check your email for details."</p>
Test Procedures	<ol style="list-style-type: none"> 1. Click “Waitlist Live Dashboard” to view position in the waitlist 2. The page will auto-refresh, showing that the user went from being 5th in the waitlist queue to being the 1st.

	<p>3. The dashboard will have a pop-up notification displaying “Position Updated: You are now in the 1st position in the waitlist.”</p> <p>4. The page will then auto-refresh again and the dashboard will display “Congratulations! You’ve enrolled successfully for [PMTH003], [Tutorial Group 2].”</p> <p>5. The dashboard will be empty as the user is removed from the waitlist</p> <p>6. Click on “OK” button of the pop-up notification to return to the iZone homepage.</p> <p>5. The homepage will show a bell icon with a red dot, click on the icon.</p> <p>6. A pop up notification displaying “Enrolment successful for [Subject Code], [Group Number]. Please check your email for details.”</p>
Actual Test Results	

	 <p>80% noted that they saw an alert saying that they were auto enrolled when the period for enrolment have ended.</p>
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1.2.4 Test Case 5 – Enrolment Period Ends

Test Objective	To confirm that the system displays an automatic alert after the enrolment period ends, informing students of their auto-enrolment into a time slot and guiding them to check their email.
Potential Test Inputs (with example)	When the enrolment period ends, students cannot click 'Start Enrol' or 'Live Dashboard'. An alert notification will appear on the homepage, and students can click on it to view the message.

<p>Expected Test Outputs</p> <p>(with example)</p>	 <p>The screenshot shows the iZone Student Portal homepage. At the top, there's a navigation bar with links like 'My Profile', 'Academic', 'Finance', 'Services', and 'Help'. Below this, there's a 'Highlight' section with a 'Thank you for calling ITS Helpdesk' message and a phone number '03-2022 5898'. An 'Alert' message is displayed in the center, stating: 'Enrolment period has ended. You've been auto-enrolled into an available class: [BIS1202], [Tutorial Group 3]. Please check your email for class details.' To the right, there's a user profile section for 'Li Jing Mei' with a red bell icon indicating a notification. Below the alert, there's a 'Dear Students' banner and a 'Work On-campus?' checkbox.</p> <p>When the enrolment period ends, the bell icon on homepage displays a red dot, when clicked it, alert message pops up showing “Enrolment period has ended. You’ve been auto enrolled into an available class: [Subject Code], [Group Number]. Please check your email for class details.” Students are enrolled to other available class.</p>
<p>Test Procedures</p>	<ol style="list-style-type: none"> 1. Log into iZone 2. Click on the bell icon in the iZone homepage 3. A notification will pop up showing “Enrolment period has ended. You’ve been auto enrolled into an available class: [Subject Code], [Group Number]. Please check your email for class details.”

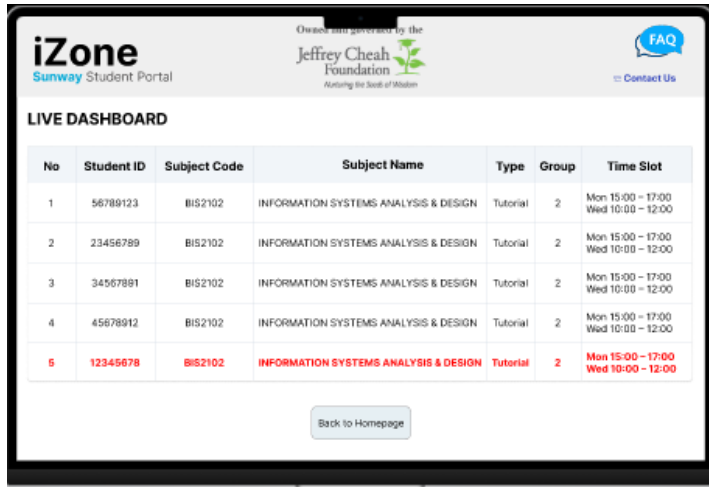
Actual Test Results

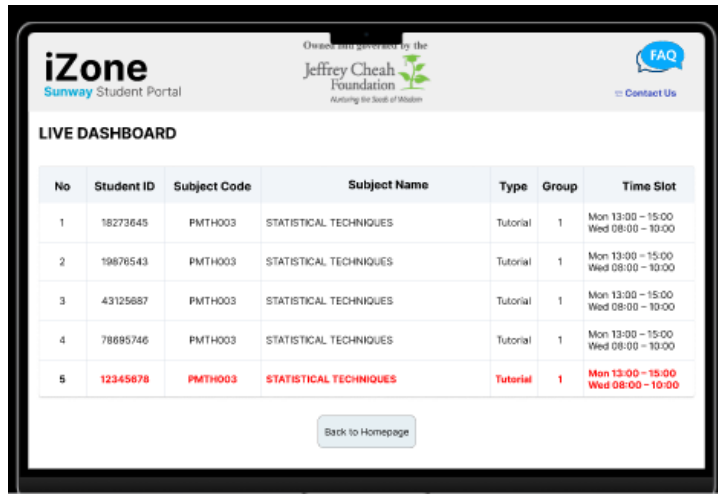
The screenshot displays the iZone Sunway Student Portal interface. At the top, the header includes the iZone logo, the text "SUNWAY STUDENT PORTAL", and the Jeffrey Cheah Foundation logo with the tagline "Nurturing the Seeds of Wisdom". Navigation links for "My Profile", "Academic", "Finance", "Services", and "Help" are present, along with "Face", "iCheckin", "Home", "Reload", and "Logout" options. A user profile bar shows the name "Li Jing Mei" and ID "12345678". A notification bell icon with a red "1" indicates a new alert. The alert box, titled "Alert", states: "Enrolment period has ended. You've been auto-enrolled into an available class: [BIS1202], [Tutorial Group 3]. Please check your email for class details." Below the alert is an "OK" button. To the left of the alert is a yellow banner for the ITS Helpdesk with the number "03-2022 5898". Below the alert is a "Dear Students" banner with a photo of students and a "Work On-campus?" checkbox. On the right, a sidebar displays student details: "Programme: Bachelor of Information Systems (Honours) (Data Analytics) (402BISDA1)", "Intake: 202309", "Study Mode: Full Time", "Semester: 6", and "Semester Period: 28-APR-2025 - 22-AUG-2025".

80% mentioned that the alert appeared after the enrolment period ended.

1.3 Live Dashboard

1.3.1 Test Case 1 – Current Waitlist Status

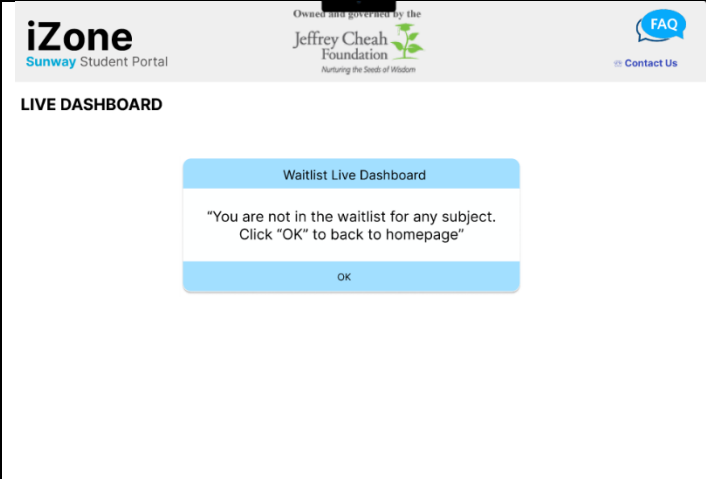
Test Objective	To confirm that the live dashboard shows the most current waitlist status immediately after a student joins the waitlist.
Potential Test Inputs (with example)	After enrolling for a waitlist, the dashboard will display the student’s waitlist position in the dashboard. After clicking the “Live Dashboard” button, the user will be navigated to the dashboard page.
Expected Test Outputs (with example)	<p>The dashboard shows that the Student with ID 12345678 is on the BIS2102 waitlist for Tutorial Group 2.</p> <p>Waitlist position is shown. The position of the student is at No 5.</p> <div></div>
Test Procedures	<ol style="list-style-type: none">After enrolled to the waitlist for BIS2124 Tutorial Group 2 by clicking “Join Waitlist” button, and then click the “Submit” button.Then, click the “Back to Homepage” button.

	<p>3. Click the “Live Dashboard” button on the enrolment section.</p> <p>4. The user will be navigated to the dashboard page and now can view their position in the waitlist.</p>																																										
Actual Test Results	<p>100% of the respondents mention that the waitlist position was displayed correctly.</p> <div><p>The screenshot displays the iZone Sunway Student Portal interface. At the top, there are logos for iZone, Sunway Student Portal, and the Jeffrey Cheah Foundation. Below the logos is a 'LIVE DASHBOARD' section containing a table with the following data:</p><table><thead><tr><th>No</th><th>Student ID</th><th>Subject Code</th><th>Subject Name</th><th>Type</th><th>Group</th><th>Time Slot</th></tr></thead><tbody><tr><td>1</td><td>18273645</td><td>PMTH003</td><td>STATISTICAL TECHNIQUES</td><td>Tutorial</td><td>1</td><td>Mon 13:00 – 15:00 Wed 08:00 – 10:00</td></tr><tr><td>2</td><td>19876543</td><td>PMTH003</td><td>STATISTICAL TECHNIQUES</td><td>Tutorial</td><td>1</td><td>Mon 13:00 – 15:00 Wed 08:00 – 10:00</td></tr><tr><td>3</td><td>43125687</td><td>PMTH003</td><td>STATISTICAL TECHNIQUES</td><td>Tutorial</td><td>1</td><td>Mon 13:00 – 15:00 Wed 08:00 – 10:00</td></tr><tr><td>4</td><td>78695746</td><td>PMTH003</td><td>STATISTICAL TECHNIQUES</td><td>Tutorial</td><td>1</td><td>Mon 13:00 – 15:00 Wed 08:00 – 10:00</td></tr><tr><td>5</td><td>12345678</td><td>PMTH003</td><td>STATISTICAL TECHNIQUES</td><td>Tutorial</td><td>1</td><td>Mon 13:00 – 15:00 Wed 08:00 – 10:00</td></tr></tbody></table><p>Below the table is a 'Back to Homepage' button.</p></div>	No	Student ID	Subject Code	Subject Name	Type	Group	Time Slot	1	18273645	PMTH003	STATISTICAL TECHNIQUES	Tutorial	1	Mon 13:00 – 15:00 Wed 08:00 – 10:00	2	19876543	PMTH003	STATISTICAL TECHNIQUES	Tutorial	1	Mon 13:00 – 15:00 Wed 08:00 – 10:00	3	43125687	PMTH003	STATISTICAL TECHNIQUES	Tutorial	1	Mon 13:00 – 15:00 Wed 08:00 – 10:00	4	78695746	PMTH003	STATISTICAL TECHNIQUES	Tutorial	1	Mon 13:00 – 15:00 Wed 08:00 – 10:00	5	12345678	PMTH003	STATISTICAL TECHNIQUES	Tutorial	1	Mon 13:00 – 15:00 Wed 08:00 – 10:00
No	Student ID	Subject Code	Subject Name	Type	Group	Time Slot																																					
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5	12345678	PMTH003	STATISTICAL TECHNIQUES	Tutorial	1	Mon 13:00 – 15:00 Wed 08:00 – 10:00																																					

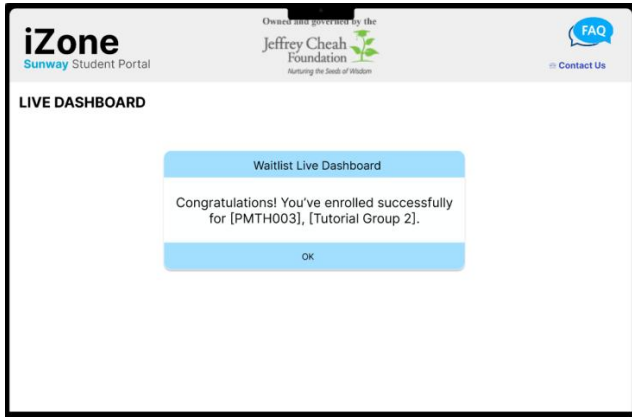
1.3.2 Test Case 2 – Updated Dashboard (Cancel Waitlist)

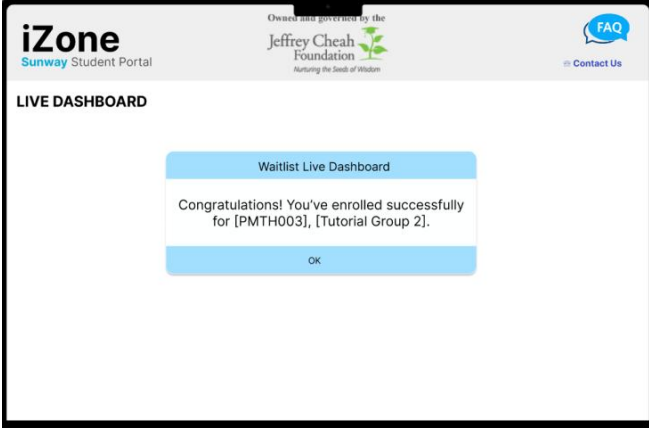
Test Objective	To validate the functionality of the live dashboard for updates when a student cancels their waitlisted course.
Potential Test Inputs (with example)	After cancel waitlist, the dashboard will display that “You are not in the waitlist for any subject.”
Expected Test Outputs (with example)	The dashboard will only show a message saying that the student is not in any waitlist.

	<p>The screenshot shows the iZone Sunway Student Portal interface. At the top, there are logos for iZone Sunway Student Portal, Jeffrey Cheah Foundation (Nurturing the Seeds of Wisdom), and an FAQ/Contact Us link. Below the header, the section is titled 'LIVE DASHBOARD'. A central message box states: 'Waitlist Live Dashboard. You are not in the waitlist for any subject. Click "OK" to back to homepage.' There is an 'OK' button at the bottom of the message box.</p>
Test Procedures	<ol style="list-style-type: none"> 1. The student cancels the waitlist by clicking the “Cancel Waitlist” button in the enrolment page and clicks “Submit” button. 2. Then click the “Back to Homepage” button. 3. Later, clicks the “Live Dashboard” button on the enrolment section of the homepage. 4. The dashboard will display the message saying “You are not in the waitlist for any subject. Click “OK” to back to homepage.”
Actual Test Results	<p>60% of the respondents saw the updated message when they cancelled the waitlist whereas the other 40% either didn’t check or were unclear.</p>

	
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1.3.3 Test Case 3 – Status Update for Auto-Enrolment

Test Objective	To confirm that the live dashboard updates when the student is auto enrolled into PMTH003 Tutorial Group 2 that the student waitlisted for.
Potential Test Inputs (with example)	After enrolling for a waitlist, the dashboard will display a message saying “Congratulation! You’ve enrolled successfully for [PMTH003], [Tutorial Group 2].”
Expected Test Outputs (with example)	<p>The student is auto-enrolled to the class that they were waitlisted for.</p> 

Test Procedures	<ol style="list-style-type: none"> 1. The student is on the waitlist at No 5 position. 2. The waitlist is refreshed; hence the dashboard now displays that the student is at No 1 position of the waitlist. 3. Then, the student will be auto enrolled to the PMTH003 Group 2 tutorial when there is a slot available since they were the first in the waitlist. The waitlist and auto-enrolment follow First Come First Serve basis. 4. Once the student is auto enrolled the dashboard page will now display the following message: “Congratulation! You’ve enrolled successfully for [PMTH003], [Tutorial Group 2].”
Actual Test Results	 <p>90% of the respondents mentioned that they saw the success message however the 10% did not check.</p>

2.0. Initial Prototype

Link: <https://www.figma.com/proto/AIRvWYK8g5C3TqoSxjjj4A/iZone-Waitlist-System?node-id=875-6361&t=qksV4VllHkzIRH72-1&scaling=scale-down&content-scaling=fixed&page-id=0%3A1&starting-point-node-id=875%3A6361&show-prototype-sidebar=1>

3.0. Testing Process

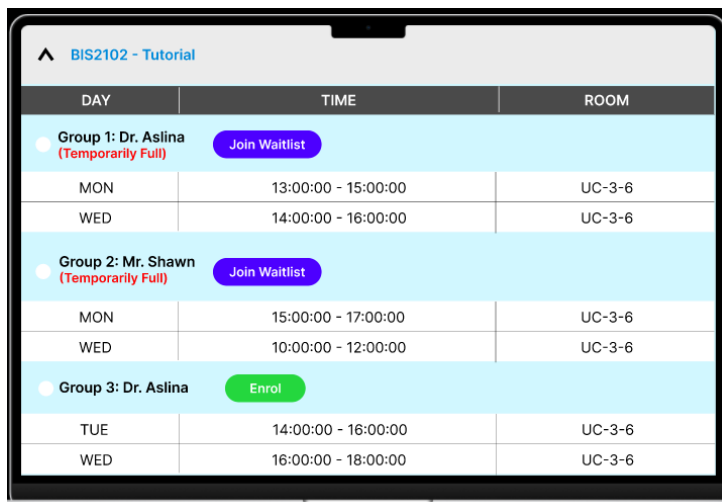
3.1. User Interface Design

The user interface (UI) for the waitlist enrolment system is designed to be intuitive. Efficient, and focused on the user experience. The design prioritizes clarity, accessibility, and responsiveness across key user flows, especially during critical actions such as joining waitlist, viewing status, and receiving notification.

3.1.1 Design Principles Applied

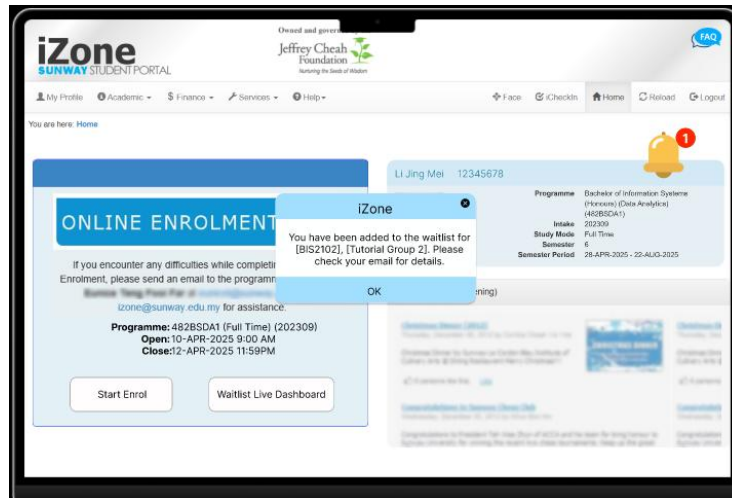
- Simplicity: Clean layout with minimal clutter to guide user actions

Proof:



- Consistency: Uniform styling for button, alerts, and fonts throughout all screens
- User-Centered Design: Focus on student needs during high-stress enrolment periods.
- Feedback-Oriented: Immediate visual and message feedback for actions taken.

Proof:



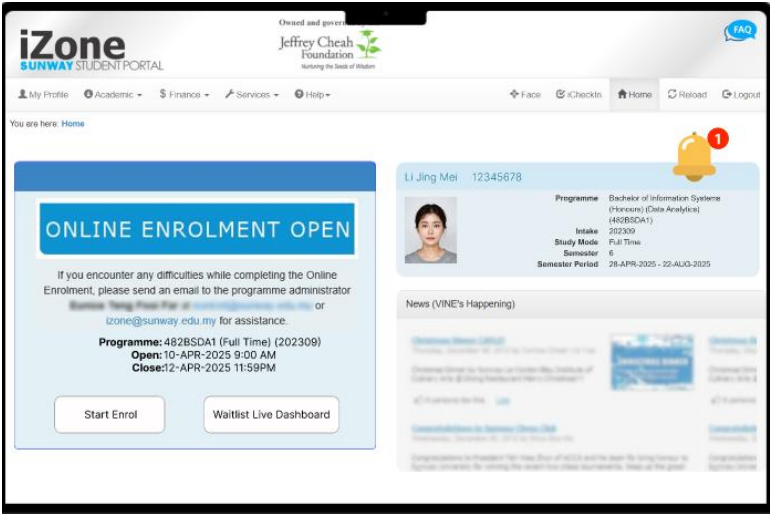
- Accessibility: High-contrast colours and large button sizes to accommodate various users.

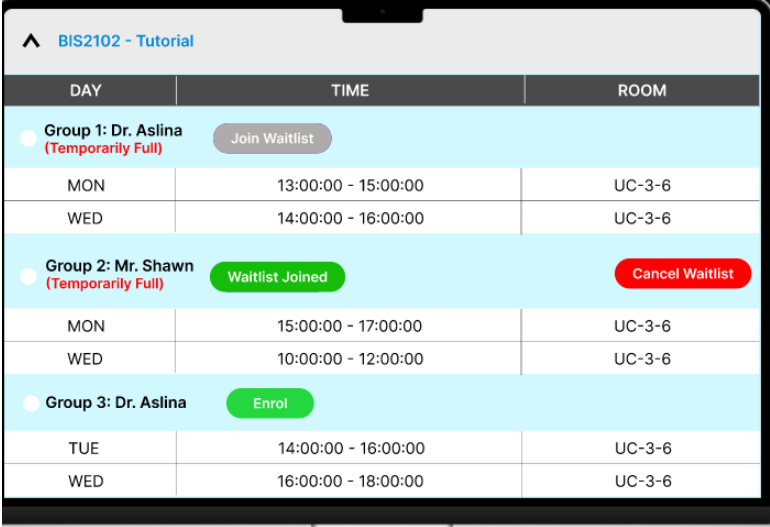
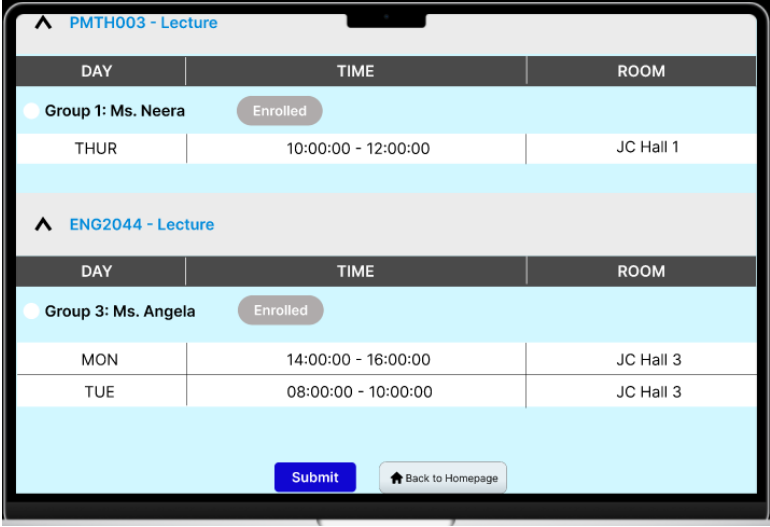
Proof:

BIS2102 - Tutorial		
DAY	TIME	ROOM
<div> Group 1: Dr. Aslina (Temporarily Full) <div>Join Waitlist</div> </div>		
MON	13:00:00 - 15:00:00	UC-3-6
WED	14:00:00 - 16:00:00	UC-3-6
<div> Group 2: Mr. Shawn (Temporarily Full) <div>Join Waitlist</div> </div>		
MON	15:00:00 - 17:00:00	UC-3-6
WED	10:00:00 - 12:00:00	UC-3-6
<div> Group 3: Dr. Aslina <div>Enrol</div> </div>		
TUE	14:00:00 - 16:00:00	UC-3-6
WED	16:00:00 - 18:00:00	UC-3-6

BIS2102 - Tutorial		
DAY	TIME	ROOM
Group 1: Dr. Aslina (Temporarily Full) Join Waitlist		
MON	13:00:00 - 15:00:00	UC-3-6
WED	14:00:00 - 16:00:00	UC-3-6
Group 2: Mr. Shawn (Temporarily Full) Waitlist Joined Cancel Waitlist		
MON	15:00:00 - 17:00:00	UC-3-6
WED	10:00:00 - 12:00:00	UC-3-6
Group 3: Dr. Aslina Enrol		
TUE	14:00:00 - 16:00:00	UC-3-6
WED	16:00:00 - 18:00:00	UC-3-6

3.1.2 Key Screens & Descriptions

Screen	Descriptions
Homepage (iZone)	<p>Central dashboard with quick access to “Start Enrol” button, “Live Dashboard” button and notification bell with red-dot indicator for new alerts.</p> 

<p>Subject Enrolment Page</p>	<p>Displays all available classes. Users can click “join Waitlist” or “Cancel Waitlist”. Also contains “Submit” and “Back to Homepage” buttons.</p>  
<p>Live Dashboard</p>	<p>Shows real-time waitlist position and updates. Includes refresh button and auto-enrolment success messages.</p>

<div><div>iZone</div><div>Sunway Student Portal</div></div>	<div>Owned and governed by the</div> <div><div>Jeffrey Cheah Foundation</div><div>Nurturing the Seeds of Wisdom</div></div>	<div>FAQ</div> <div>Contact Us</div>																																								
<div>LIVE DASHBOARD</div>																																										
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<div>Back to Homepage</div>																																										

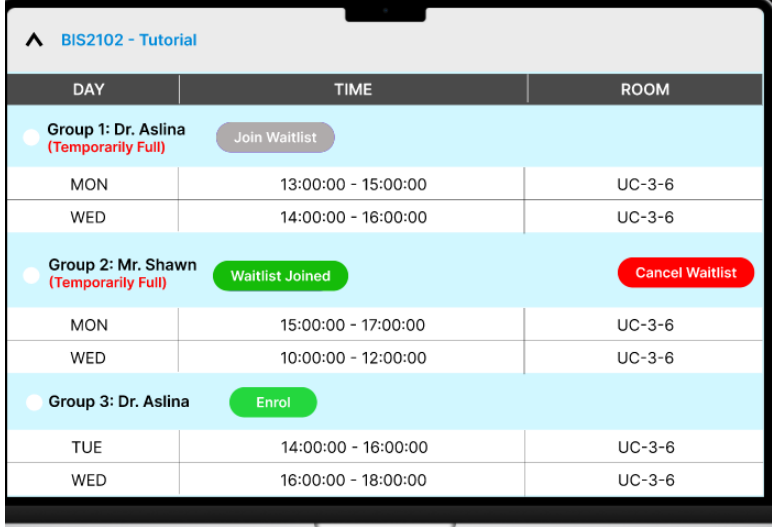
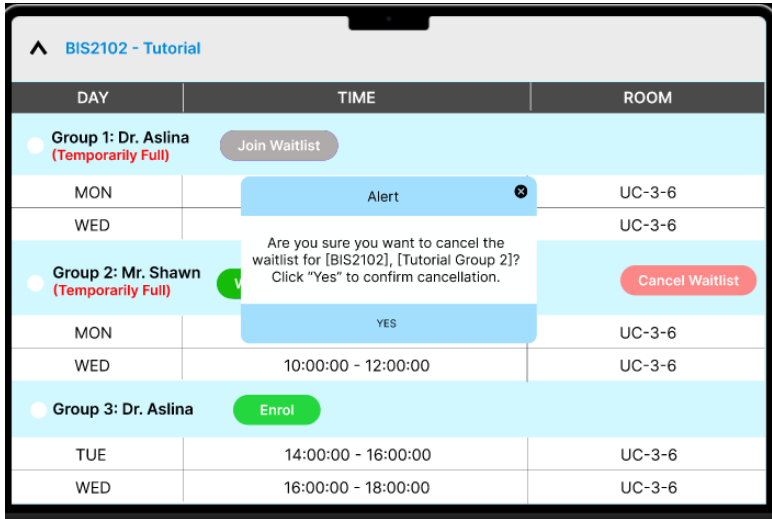
Notification Panel

Accessed via the bell icon. Displays pop-up alerts like waitlist join success, schedule conflicts, enrolment success, or system errors.

<div><div>iZone</div><div>SUNWAY STUDENT PORTAL</div></div>	<div>Owned and governed by the</div> <div><div>Jeffrey Cheah Foundation</div><div>Nurturing the Seeds of Wisdom</div></div>	<div>FAQ</div>
<div>My Profile Academic Finance Services Help Face iChecks Home Reload Logout</div> <div>You are here: Home</div>		
<div><div><div>ONLINE ENROLMENT</div><div>If you encounter any difficulties while completing Enrolment, please send an email to the programme coordinator at izone@sunway.edu.my for assistance.</div><div>Programme: 482BSDA1 (Full Time) (202309) Open: 10-APR-2025 9:00 AM Close: 12-APR-2025 11:59PM</div><div>Start Enrol</div><div>Waitlist Live Dashboard</div></div><div><div>Li Jing Mei 12345678</div><div><div><div>Programme</div><div>Bachelor of Information Systems (Honours) (Data Analytics) (482BSDA1)</div></div><div><div>Intake</div><div>202309</div></div><div><div>Study Mode</div><div>Full Time</div></div><div><div>Semester</div><div>6</div></div><div><div>Semester Period</div><div>28-APR-2025 - 22-AUG-2025</div></div></div><div><div>You have been added to the waitlist for [BIS2102], [Tutorial Group 2]. Please check your email for details.</div><div>OK</div></div></div></div>		

3.1.3 Interactive Elements

Element	Function
Join Waitlist	Adds student to class waitlist and changes to “Waitlist Joined” in green. “cancel Waitlist” button pops up in red.

	
Cancel Waitlist	<p>Prompts confirmation and removes student from waitlist upon confirmation.</p> 
Submit	<p>Finalizes enrolment/waitlist choices and navigates to timetable view.</p>

iZone
Sunway Student Portal

Owned and governed by the
Jeffrey Cheah
Foundation
Nurturing the Seeds of Wisdom

FAQ
Contact Us

LIVE DASHBOARD

No	Student ID	Subject Code	Subject Name	Type	Group	Time Slot
1	56789123	BIS2102	INFORMATION SYSTEMS ANALYSIS & DESIGN	Tutorial	2	Mon 15:00 – 17:00 Wed 10:00 – 12:00
2	23456789	BIS2102	INFORMATION SYSTEMS ANALYSIS & DESIGN	Tutorial	2	Mon 15:00 – 17:00 Wed 10:00 – 12:00
3	34567891	BIS2102	INFORMATION SYSTEMS ANALYSIS & DESIGN	Tutorial	2	Mon 15:00 – 17:00 Wed 10:00 – 12:00
4	45678912	BIS2102	INFORMATION SYSTEMS ANALYSIS & DESIGN	Tutorial	2	Mon 15:00 – 17:00 Wed 10:00 – 12:00
5	12345678	BIS2102	INFORMATION SYSTEMS ANALYSIS & DESIGN	Tutorial	2	Mon 15:00 – 17:00 Wed 10:00 – 12:00

Back to Homepage

End Enrolment Period

Triggers automatic enrolment into available slots and notifies user

iZone
SUNWAY STUDENT PORTAL

Owned and governed by the
Jeffrey Cheah
Foundation
Nurturing the Seeds of Wisdom

FAQ

My Profile Academic Finance Services Help Face iCheckin Home Reload Logout

You are here: Home

ONLINE ENROLMENT

If you encounter any difficulties while completing Enrolment, please send an email to the programme Enrolment Officer at izone@sunway.edu.my for assistance.

Programme: 4826SDA1 (Full Time) (202309)
Open: 10-APR-2025 9:00 AM
Close: 12-APR-2025 11:59PM

Start Enrol

Waitlist Live Dashboard

Li Jing Mei 12345678

Programme: Bachelor of Information Systems (Honours) (Data Analytics) (4826SDA1)
Intake: 202309
Study Mode: Full Time
Semester: 6
Semester Period: 28-APR-2025 - 22-AUG-2025

You have been added to the waitlist for [PMTH003], [Tutorial Group 2]. Please check your email for details.

OK

3.1.4 Colour and Layout Consistency

- Green = success state (Ex: “Waitlist Joined”)
- White backgrounds with clear sections to improve readability
- Consistent font and button styles across all screens

3.1.5 Accessibility & Responsiveness

- All buttons and text use high-contrast colours.

- Minimal use of dropdowns or hidden components – everything is easily clickable.
- Design works well on desktops.

3.2. Pilot Test

Assumption 1: Students can only join one waitlist at a time; If a student joins a waitlist for subject A, they can't join waitlist for subject B.

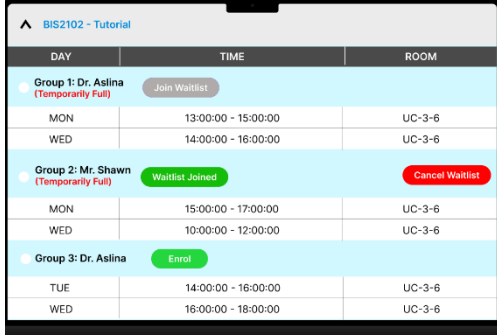
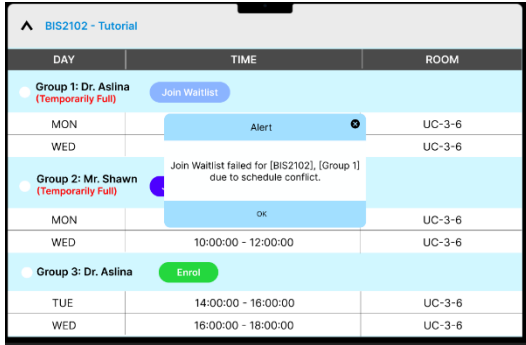
Assumption 2: Students can only choose to either ‘enroll’ into an available time slot or ‘join waitlist’ for a temporary full time slot for a subject; They can't enroll in a group and join a waitlist in another group of the same subject.

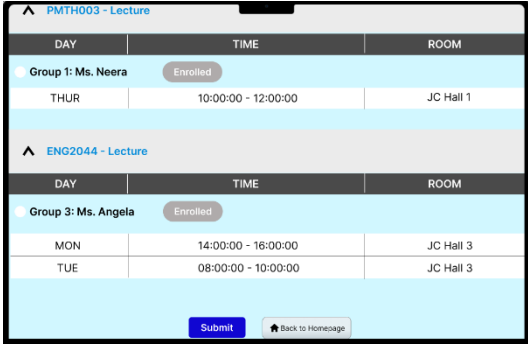
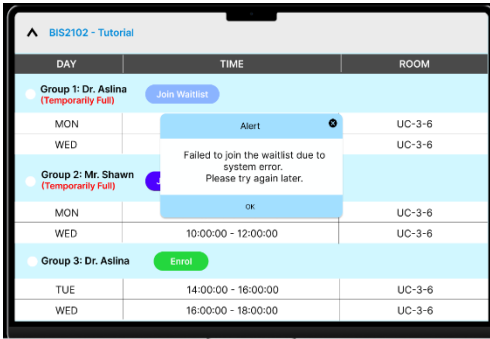
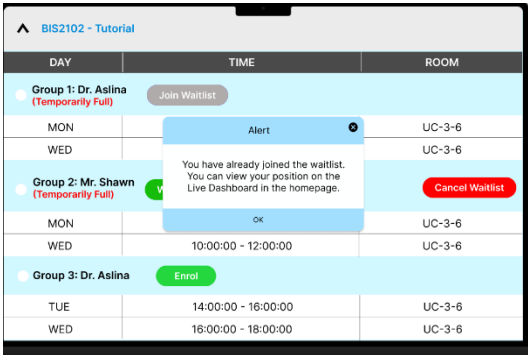
Testers Information

Use Case	Testers Name	Student ID
1. Join Waitlist	Cheong Jun Yuan	22065585
2. Auto Enrolment with Notification	Leong Khee Yan	22074124
3. Live Dashboard	Chen Shen	22065833

Use Case 1: Join Waitlist



Feedback from Tester 1

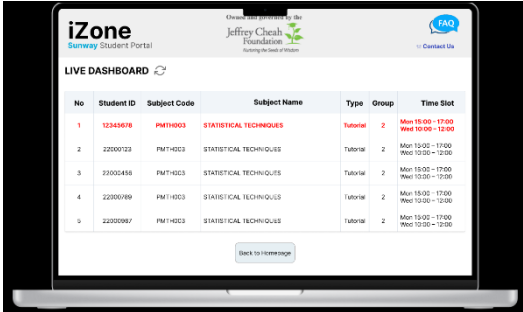
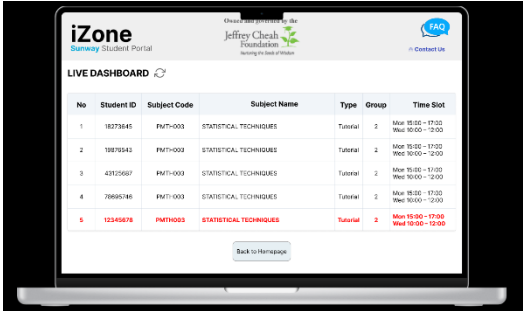
Test Case	Test Case Title	Actual Result	Feedback/Comments
1.1.1	Waitlist Joined	 <p>Button change to “Wishlist Joined” after click on it</p>	Work as expected. The response is immediate.
1.1.2	Schedule Conflict	 <p>The user is blocked from joining due to a clash.</p>	The Logic works. showing a clearer error message to users

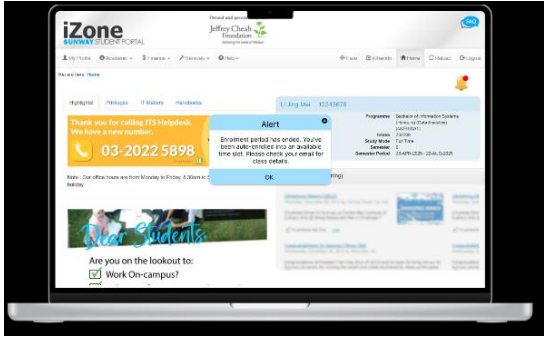
1.1.3	Submit & Back Navigation		The navigation is functional. No unexpected routing.
1.1.4	System Error	 <p>The system displays an error message when it crashed.</p>	The error handling exists for the system exist.
1.1.5	Duplicate Join Alert		The alert works successfully when a student is already on the waitlist for that time zone.

Use Case 2: Auto Enrolment with Notification

Feedback from Tester 2


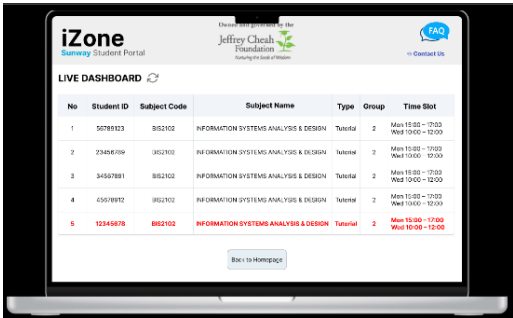
Test Case	Test Case Title	Actual Result	Feedback/Comments
1.2.1	Alert Notification	 <p>Notification bell icon appears on homepage after waitlist submission.</p>	It takes effort to notice the notification bell.
1.2.2	Cancel Waitlist		The cancel button is functional and user-friendly.


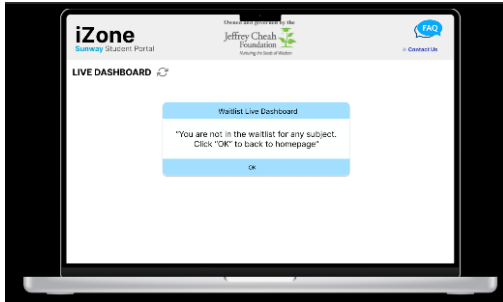
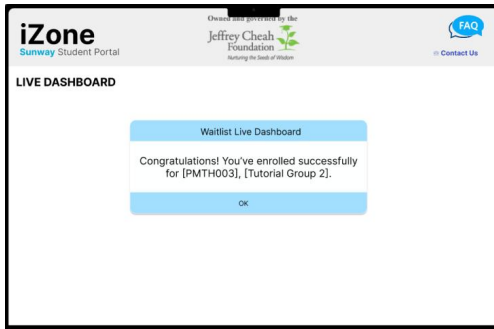
		<p>Cancel prompt appears, and after confirmation, a success alert is shown.</p>	
1.2.3	Auto-Enrol	<div></div>	Works correctly.

1.2.4	Enrolment Period Ends		The system behaves as expected. Email delivery confirmed.
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Use Case 3: Live Dashboard

Feedback from Tester 3

Test Case ID	Test Case Title	Actual Result	Feedback/Comments
1.3.1	After Join Waitlist	 	Real-time updates work well.

		The waiting Dashboard displays waitlist position immediately	
1.3.2	After Cancel Waitlist	  <p>Dashboard updates immediately and no waitlist entries are shown.</p>	Successfully removes waitlist entry
1.3.3	Auto-Enrol Confirmation		End-to-end flow works. Great clarity.

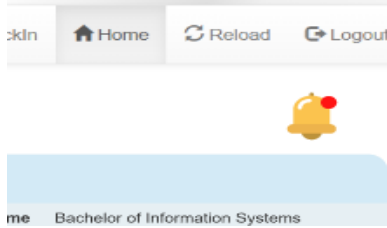
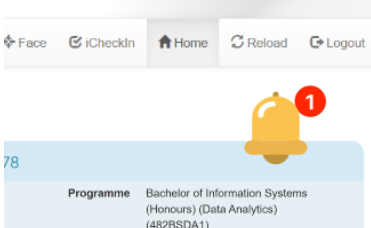
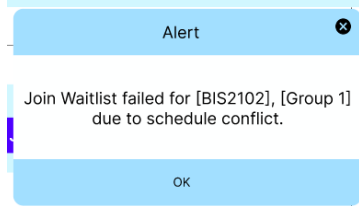
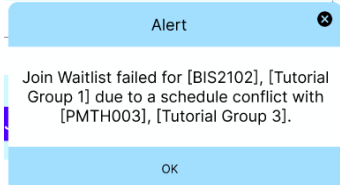
Overall Feedback

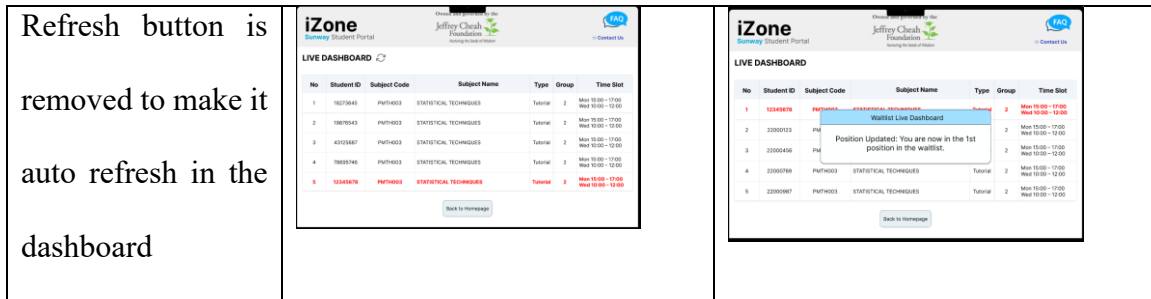
The system is easy to use and navigate. The flows work really well and the system updates in real-time making it easier for the users to be up to date with everything. The users find

the notification alert to be useful as it updates and reminds them to see their emails for more updates and such.

Areas of Improvements

The users believe the bell icon is not visible enough especially when they receive a notification. The users also believe its best to include with which subject the schedule conflict occurs with to be clearer and make it easier for them to choose other groups. One of the testers also mentioned to make refreshing for live dashboard into automated once instead of clicking it manually so that it is auto refreshing when the waitlist position is being updated in real-time.

Changes	Before	After
Bell Icon – made it more visible in the homepage		
Amend the schedule conflict message		



3.3. Usability Testing

Link to the survey questions: <https://forms.gle/Ro7jyi51GUykDrhV6>

Link to the responses by the respondents:

https://docs.google.com/spreadsheets/d/16PRW_PLOq5dH84QmoiF-HwaEwLnq2zVWbCO0K7gcbLM/edit?usp=sharing

Overall Feedback from the System Usability Scale (SUS)

According to the SUS, the result was a high score of 80.75 indicating that the system has a strong performance of effective, efficiency, and overall satisfaction among the testers. They believed this system were very well integrated and that it would be very easy for most people to learn this system.

Based on the feedback above, it is sure that this system has all the core flows functioning reliably. The visual and system feedback is also consistent and clear. The users found that the interface is intuitive, simple and navigable.

Although there are some areas for improvement where some of the functions such as the auto-enrolment, and error handling need clearer instructions for testers. A few users reported friction so we should consider streamlining flows further or providing first-time user guidance.

4.0. Final Prototype

Link: <https://www.figma.com/proto/AIRvWYK8g5C3TqoSxjjj4A/iZone-Waitlist-System--Initial-Prototype-?node-id=419-388&p=f&t=OVNLSf8JjvIHRSFs-1&scaling=scale-down&content-scaling=fixed&page-id=10%3A3&starting-point-node-id=502%3A246&show-prot-sidebar=1>

Improvements made compared to the initial prototype was that the notification icon when notifying the student was made bigger with a red dot so that the student can see the bell icon more visibly and clearly to know that they received a notification from the system.

The second improvement made was to mention with which class was the schedule conflict occurred with. Ex: For BIS 2104 Tutorial Group 1 have a schedule conflict with PMTH003 Tutorial Group 2. This will be shown clearly to the student when they click the “Join Waitlist” button.

5.0. Digital Mockup



Figure 1: Login Page

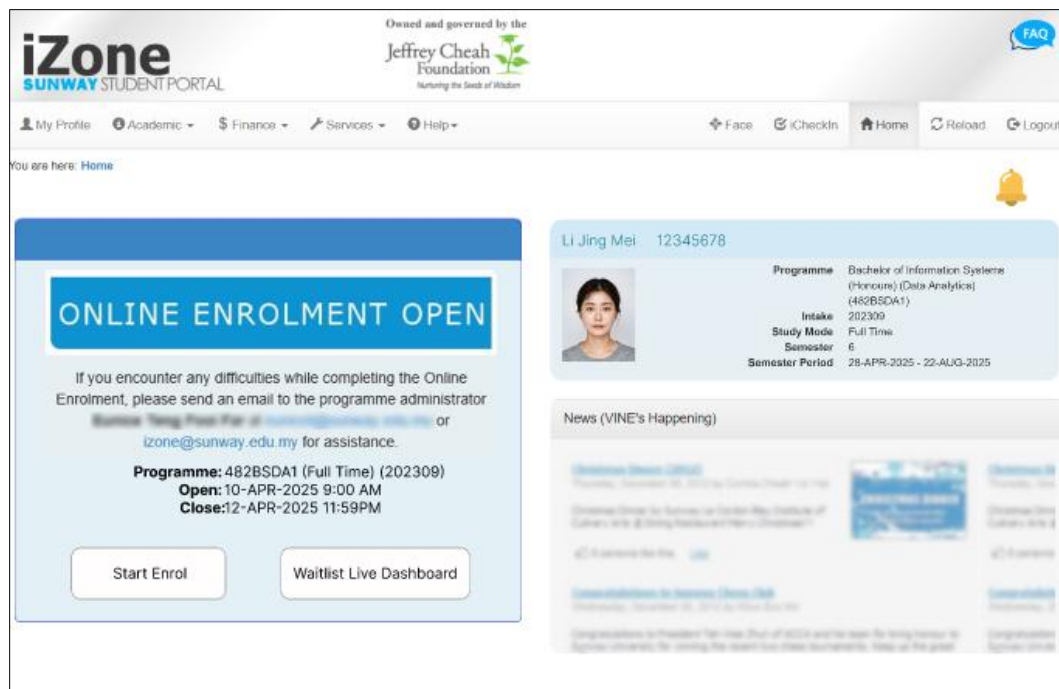


Figure 2: iZone Homepage

You have **COMPLETED** your subject enrolment.
Click the "Edit" button if you wish to make changes.

Successfully Enrolled Subject / Class / Group

SUBJECT	SUBJECT CODE	CLASS TYPE	GROUP	DAY	TIME	ROOM
INFORMATION SYSTEMS ANALYSIS & DESIGN	BIS2102	L	1	FRI	08:00:00 - 10:00:00	JC HALL 2
STATISTICAL TECHNIQUES	PMTH003	L	1	THUR	10:00:00 - 12:00:00	JC HALL 1
COMMUNICATION SKILLS	ENG2044	L	3	MON	14:00:00 - 16:00:00	JC HALL 3
COMMUNICATION SKILLS	ENG2044	L	3	TUE	08:00:00 - 10:00:00	JC HALL 3

Please Note that the changes will only be reflected in iZone (Subject Listing & Fees Summary) after the following data processing time(s) daily:
1:10 AM, 3:10 PM

Edit

Back to Homepage

Figure 3: Timetable View Page

^ BIS2102 - Tutorial		
DAY	TIME	ROOM
<div> ● Group 1: Dr. Aslina (Temporarily Full) Join Waitlist </div>		
MON	13:00:00 - 15:00:00	UC-3-6
WED	14:00:00 - 16:00:00	UC-3-6
<div> ● Group 2: Mr. Shawn (Temporarily Full) Join Waitlist </div>		
MON	15:00:00 - 17:00:00	UC-3-6
WED	10:00:00 - 12:00:00	UC-3-6
<div> ● Group 3: Dr. Aslina Enrol </div>		
TUE	14:00:00 - 16:00:00	UC-3-6
WED	16:00:00 - 18:00:00	UC-3-6

Figure 4: Subject Enrolment & Join/Cancel Waitlist Page

BIS2102 - Tutorial		
DAY	TIME	ROOM
Group 1: Dr. Aslina (Temporarily Full) Join Waitlist		
MON		UC-3-6
WED		UC-3-6
Group 2: Mr. Shawn (Temporarily Full)		
MON		UC-3-6
WED	10:00:00 - 12:00:00	UC-3-6
Group 3: Dr. Aslina Enrol		
TUE	14:00:00 - 16:00:00	UC-3-6
WED	16:00:00 - 18:00:00	UC-3-6

Figure 7: System Error Page

<div> <div> Owned and governed by the Jeffrey Cheah Foundation <i>Nurturing the Seeds of Wisdom</i> </div> <div> Contact Us </div> </div>						
LIVE DASHBOARD						
No	Student ID	Subject Code	Subject Name	Type	Group	Time Slot
1	12345678	PMTH003	STATISTICAL TECHNIQUES	Tutorial	2	Mon 15:00 – 17:00 Wed 10:00 – 12:00
2	22000123	PMTH003	STATISTICAL TECHNIQUES	Tutorial	2	Mon 15:00 – 17:00 Wed 10:00 – 12:00
3	22000456	PMTH003	STATISTICAL TECHNIQUES	Tutorial	2	Mon 15:00 – 17:00 Wed 10:00 – 12:00
4	22000789	PMTH003	STATISTICAL TECHNIQUES	Tutorial	2	Mon 15:00 – 17:00 Wed 10:00 – 12:00
5	22000987	PMTH003	STATISTICAL TECHNIQUES	Tutorial	2	Mon 15:00 – 17:00 Wed 10:00 – 12:00

Figure 8: Refresh for Auto-Enrolment Page

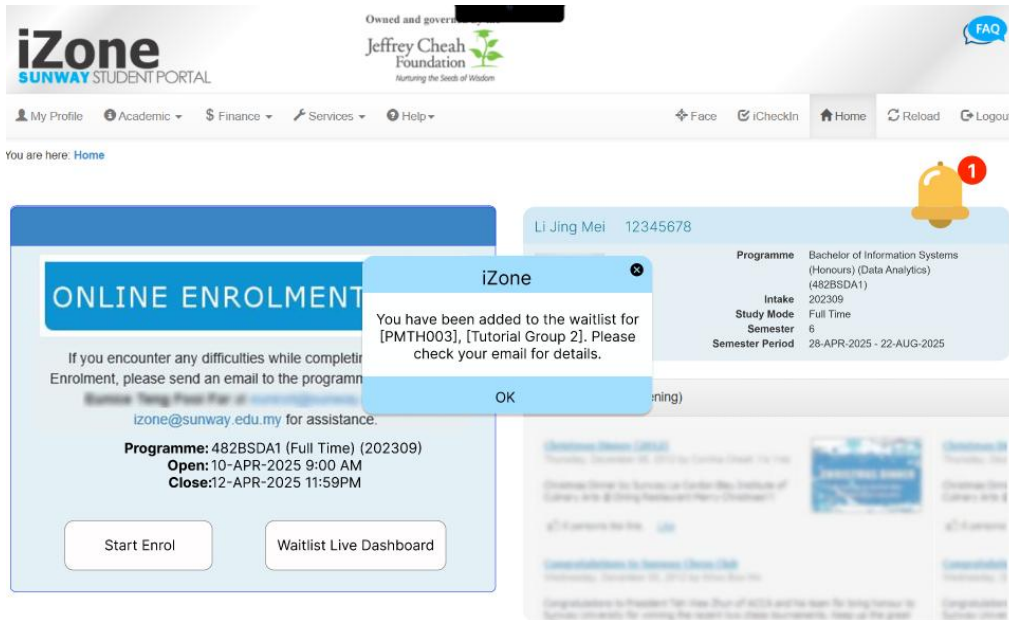
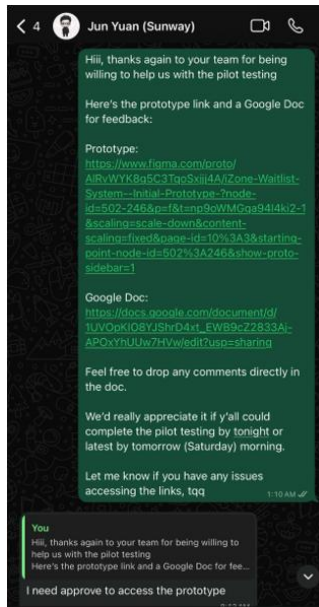


Figure 9: Notification for Auto-Enrolment

6.0 Appendices

Evidence of requesting another assignment group (BIS 3-4) from the same tutorial group to participate in the testing.



Evidence of requesting students and staff from both FET and other schools who are not from the same tutorial group.

