



STIA1123 PROGRAMMING 2
SESI 2020/2021 (A202) GROUP I

PROJECT REPORT

SPORT BUSINESS / EVENT

Lecturer

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Company Background

Background of the Project

Our main project is based on the sport business event. There are various types of sport in Malaysia and not just a physical sport, indoor sport and e-sport for the person who not active in physical activities provided. Our group are managing bowling centre business, futsal centre business, taekwando centre business, gaming centre business and also basketball centre business. Each person from our group are assigned to a different sport and also a different location to make sure each place in our country have sport facilities. The main reason our group starting this business is to build a society that not just focus on academic but also focus on their health whether it is mental or physical health.

Each of the sport have different types of rules and also different way of playing. We divide each of the sport in a different centre to make it easier to participant to choose the sport that they like and want to participate. Each of the sport centre have their own purpose for developing this system.

1. Bowling Centre (Foo Roon Yi 277088)

Bowling is one of the recreational sports and it helps people reduce stress. The term of bowling refers to pin bowling. We also call it as ten-pin bowling. The goal of the pin bowling is knocking the pins on a long playing surface called lane. If the player knocks down all of the pins on his first roll, then a strike is achieved. Bowling can also refer to target bowling. The purpose of the target bowling is usually to get the ball as close to a mark as possible. There are some examples regarding to the types of pin bowling: ten-pin, candlepin, duckpin, five-pin and so forth.

In this bowling centre system, it specializes the venue of the bowling centre at Time Zone Bowling centre which is located at Skudai, Johor Bahru. For instance, it has contact number of 012-3456789 for the participants to call them asking about their enquiries of the events. There is Facebook page of TimeZoneBowlingCentre@fb.com for the bowling centre too. It provides three bowling events inside the system such as duck pin bowling, 5-pin bowling and candlepin bowling.

This system is built for the uses of employees and customers. In this system, the admin refers to the employees inside the Time Zone Bowling Centre and the customers refer to the participants who want to participate the bowling event.

The participants can register themselves with the bowling events which they want to participate. However, the employees who are the admin of this system are responsible to update the information of the participants in this bowling event. The employee can also add their records to see their salaries inside the employee information system. Additionally, the employee can check for the finance of Time Zone Bowling Centre to get the information of the total net profit budgeted.

2. Ultimate Gamer Centre (Wong Re Jie 277741)

E-sports (also known as electronic sports, e-sports, or eSports) is a form of competition using video games. E-sports often takes the form of organized, multiplayer video game competitions, particularly between professional players, individually or as teams. Although organized competitions have long been a part of video game culture, these were largely between amateurs until the late 2000s, when participation by professional gamers and spectatorship in

these events through live streaming saw a large surge in popularity. By the 2010s, e-sports was a significant factor in the video game industry, with many game developers actively designing and providing funding for tournaments and other events. Following the trend of the E-sports, Ultimate Gamer Centre was founded in 2018 by Wong Re Jie. Our company provides customers the chance for them to compete with each other with E-sports to win the glory and prize. Our company mainly will organise 3 main e-sports tournament events, those are the First Persons Shooter (FPS) event tournament, Multiplayer Online Battle Arena (MOBA) event tournament and Real-Time Strategy (RTS) event tournament. To those people who love gaming and finding a place to unleash their skills, Ultimate Gamer Centre will provide a great stage for all to compete with each other.

The company is located at Kuala Terengganu City Centre, Kuala Terengganu. Operation hour is from 10 a.m. to 10 p.m. There are quite a few departments of employees in this company for example the manager, event host, technician, admin and more. And Ultimate Gamer Centre are currently still recruiting. For those who interested in participating the events or working as our partner, please kindly contact 012-9988564 (Mr. Wong) or E-mail to Wongx@gmail.com for any inquiries.

Furthermore, the participants can kindly use the sport event business system to register themselves to participate the events organised by Ultimate Gamer Centre or surf the information about the recent events using the system. Meanwhile, the admin of Ultimate Gamer Centre can use the system to update the information about the events and employee. The admin can also use the system to update the finance details of the company and then calculate the cost and net profit of each event.

3. Futsal Centre (Athirah Bazilah Binti Baharun 277677)

Our AB Futsal Centre were established on year 2010. We named this centre as AB Futsal Centre because AB stands for ‘Alpha and Beta’ but it is too long for our customer to pronounce it, so we change it to AB. Our company is located at Taman Cukai Utama, Kemaman Terengganu. We choose to build our company here because it is a city location and suitable for people who live in the city. It is because there were a few sports facilities in this city and this futsal centre can be one of the centre of the social gathering. While they develop their health, they can also develop their social skills. Our contact info is based on our office contact number, that is, +609-8594882. If our customer has any enquiries, they can contact us through this number.

The purpose of this AB Futsal Centre system were create is to make an easier way for our customers to register in our futsal centre. As we know, futsal game can be played by different categories whether it is male, female, kid, teenager or an adult. Basically, the teenagers and the adults are really busy with their work and their studies and they did not have much time to go to our futsal centre for registration. Therefore, we make an initiative to create this application as they can register everywhere and anytime they want. Their time can be more flexible and they can spare their time with other things which are more necessary.

Our company operates as a small business; hence we accept 15 workers to work as we can pay them more for their work. We are providing a place and events for our customers to enjoy their futsal game in the best possible way. We also provide a prize for the members who win in the event that we provide. This action is to make the event more fun and to make sure more

customers join our event so we can get more income. Our target customers are mostly a male, a teenager and even an adult. It is because most of the male love to play futsal and like to enjoy it with their friends rather than their families.

Our futsal centre now is more develop and more customers taking interest in futsal game. Therefore, we hope our business can get bigger and bigger as well as make our beloved customers happy inside out.

4. Taekwondo Dojang (Cheng Ming Xuan)

UUM Dojang was founded in 2009 with the goal of teaching and developing students all around the world into well-rounded individuals. Every year, UUM Dojang organises a number of events in which individuals from all over the world can participate. UUM Dojang is situated in Changlun, Sintok, Kedah, Malaysia.

More than ten people work at UUM Dojang to plan and organise activities. To participate in the activities, participants must pay registration fees. Each tournament will provide a prize and glory for the winner. For additional information, call 012-3456789.

This program is used for event organisation. It has two main purpose which are event participants' registration and admin log in for participants' management, employee managements and financial check.

5. Basketing Centre (Nurafiza Binti Abdul Rahshid 277839)

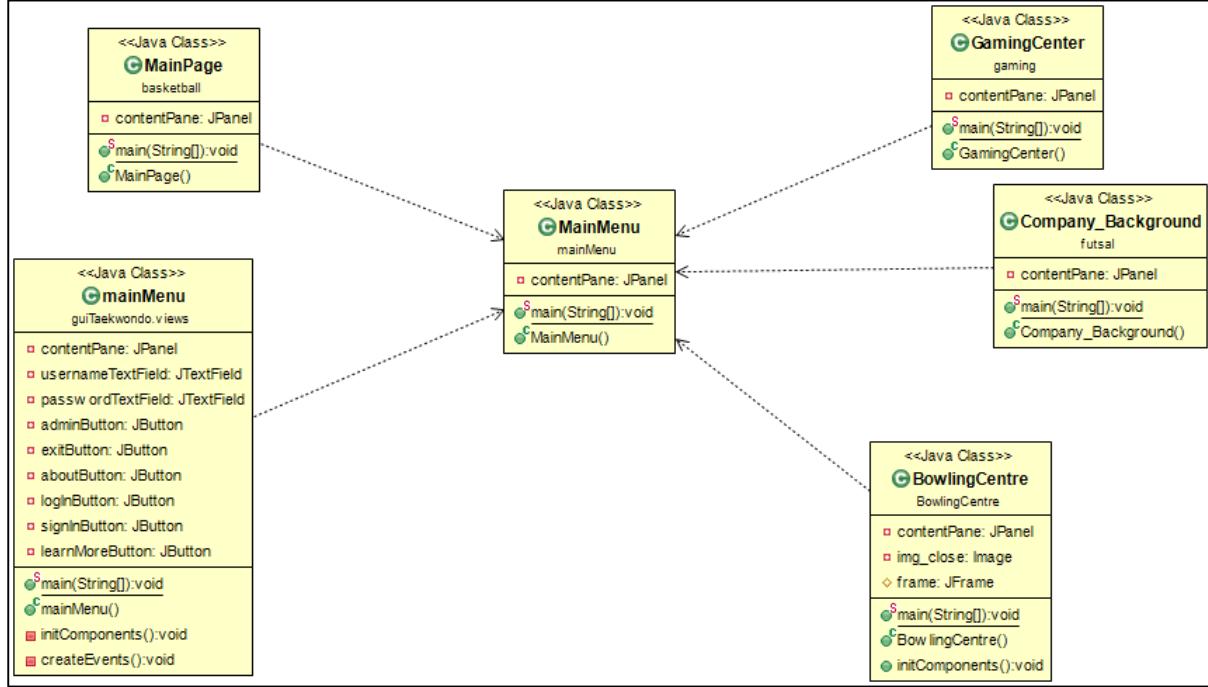
KBasketball is a basketball centre that provides and organizse a tournament event for the participant. The company has been formed since 2020 to attract youth that has interest in playing basketball. The main branch of KnBasketball is located at Langkawi. KnBasketball can be contacted through email, knbasketball@gmail.com or through our office 0012-4536987.

KnBasketball have about 100 employees which responsible in managing our customers, organize the tournament and provide facilities to our customers. In the system, customer need to pay a fee before they can make any reservation. After the payment has been made by the customer, they can register the details of the event and the number of participants that going to be present. Customer also can choose the category for the even that are going to be organized. For the admin, the system helps to manage the employee information, manage the finance for the company and access the event details of the customers. These features can help both the employees and customers ease the process of conducting the sports event.

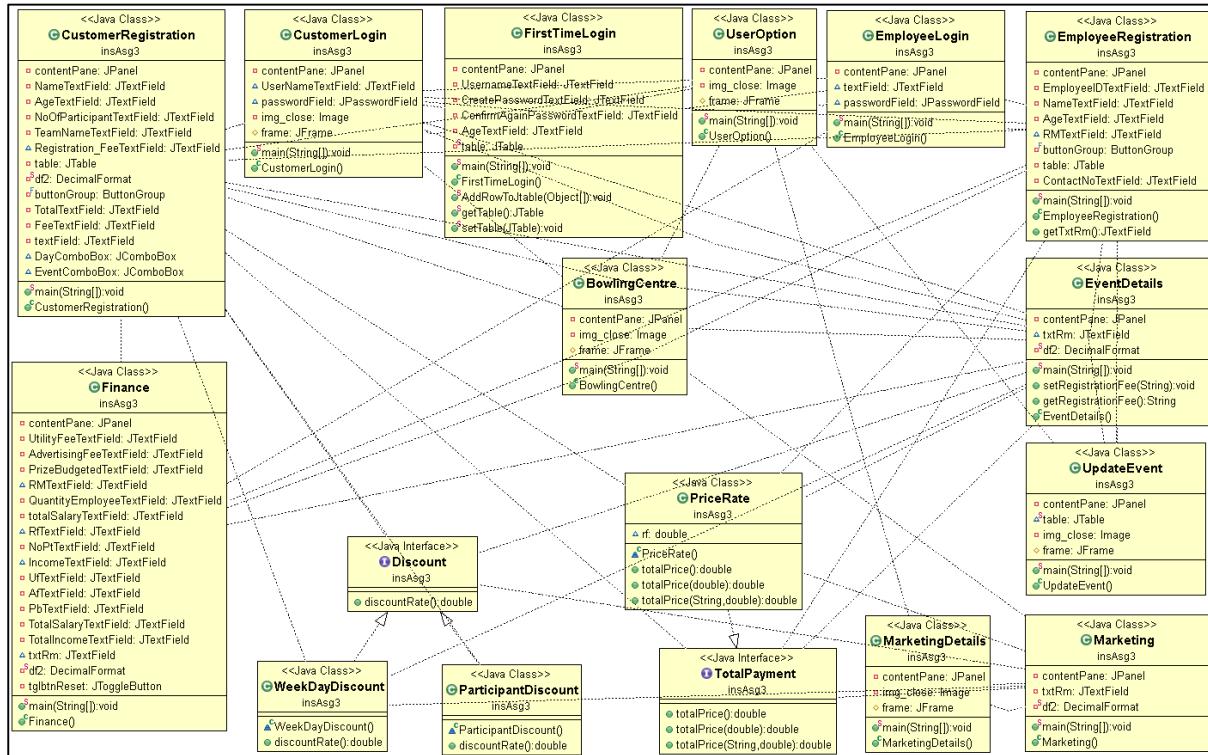
UML Diagram

Sports Event / Business

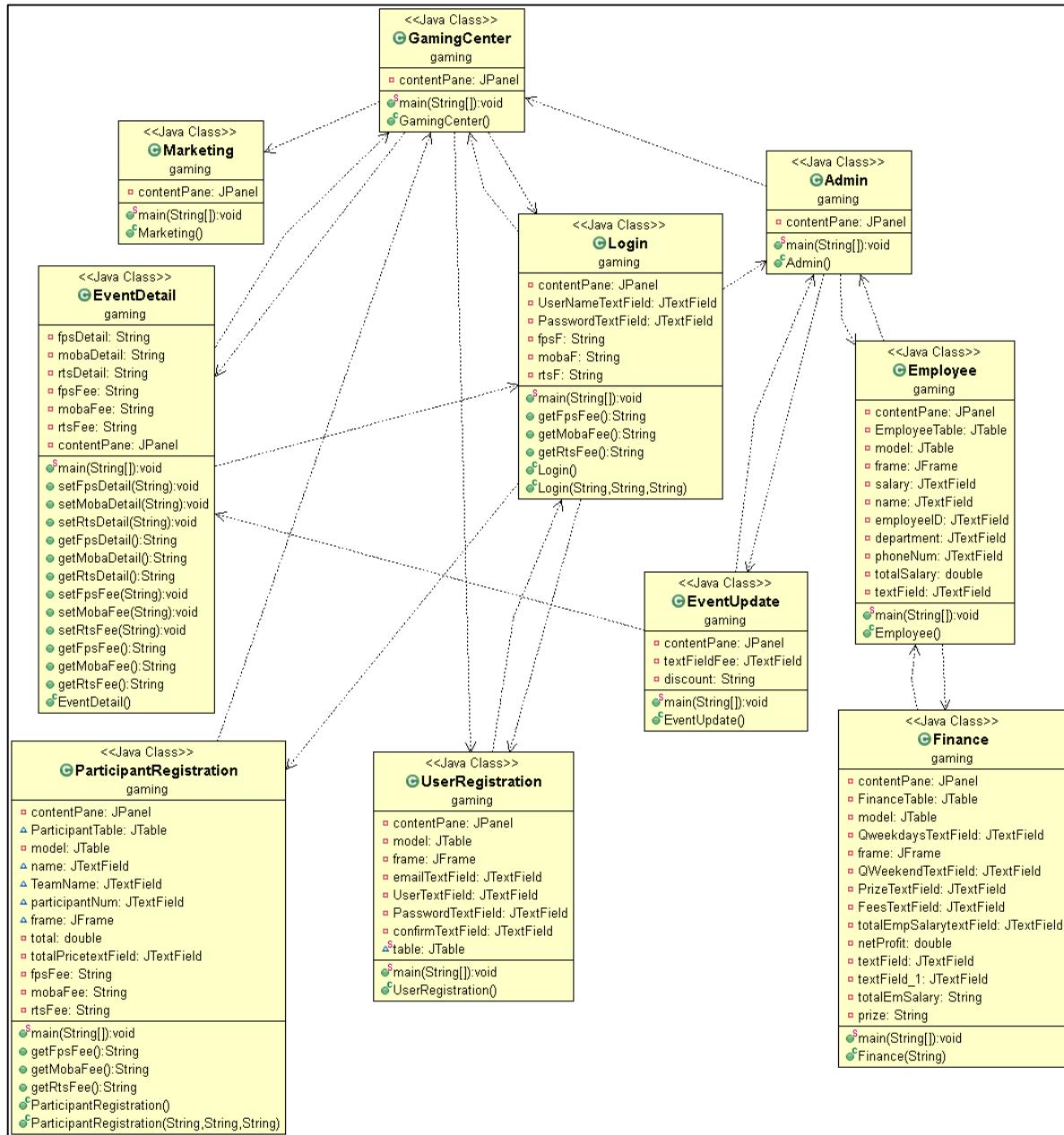
Main



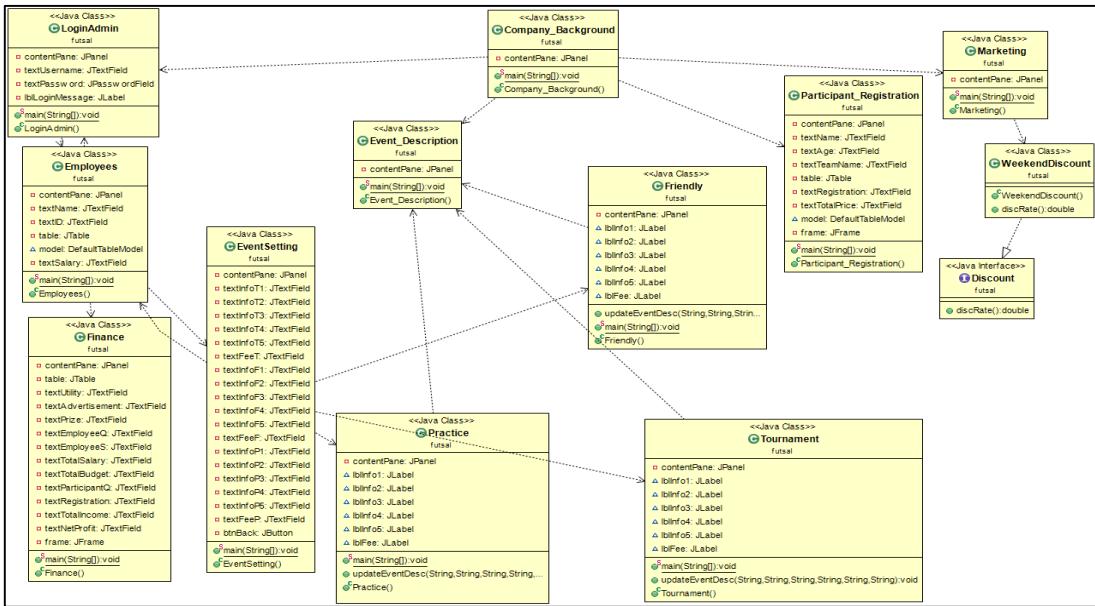
1. Bowling Centre (Foo Roon Yi 277088)



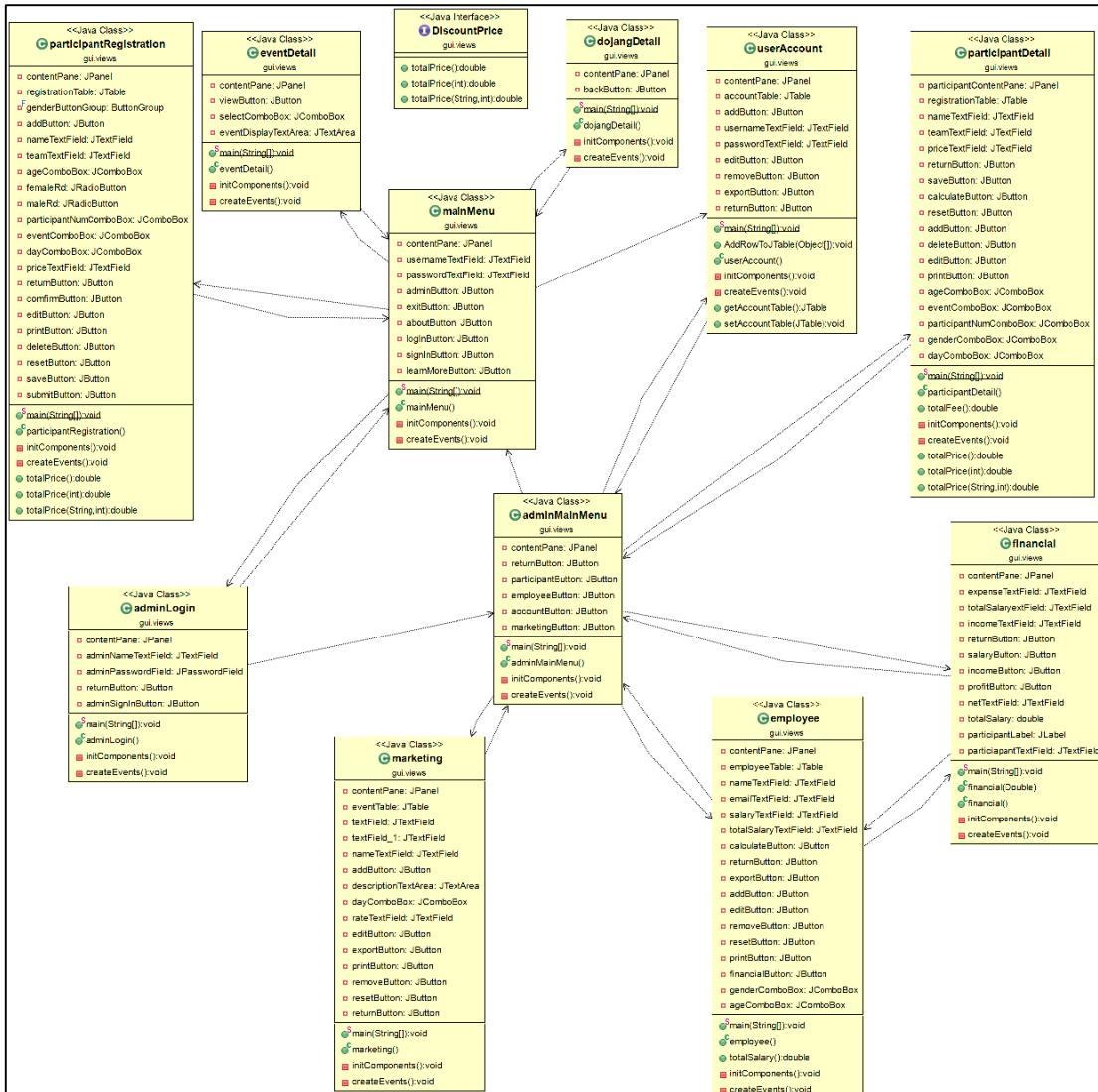
2. Ultimate Gamer Centre (Wong Re Jie 277741)



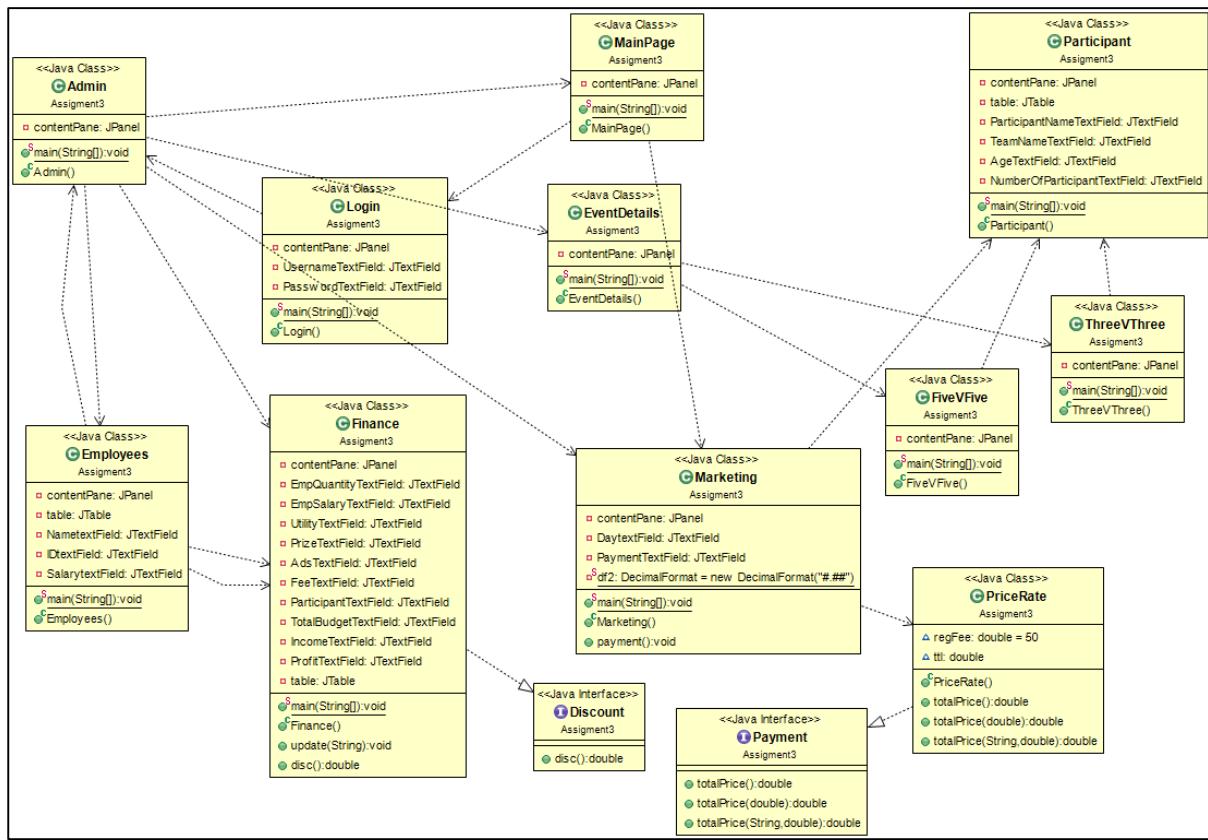
3. Futsal Centre (Athirah Bazilah Binti Baharun 277677)



4. Taekwondo Dojang (Cheng Ming Xuan)



5. Basketing Centre (Nurafiza Binti Abdul Rahshid 277839)



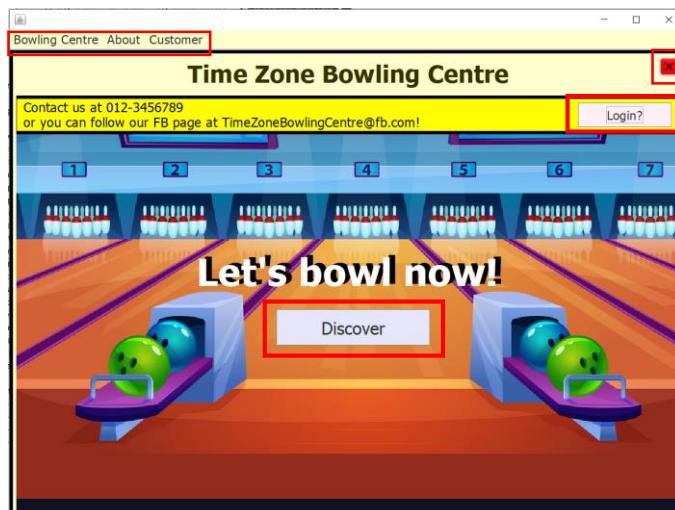
Program Description

1. Bowling Centre (Foo Roon Yi 277088)

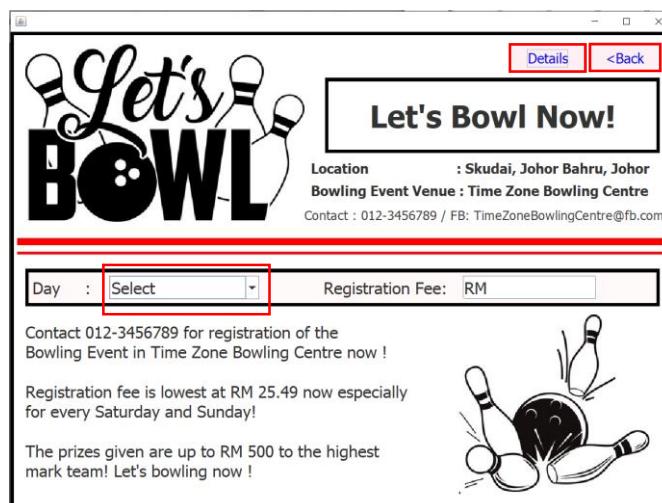
This program mentions about the sport events or business especially for bowling centre. In this program, the bowling centre selected is Time Zone Bowling Centre. The employees and the participants can log in this program to registration and administration.

1.1 User Manual for Admin

Step 1: This page is the first page of Time Zone Bowling Centre. Moreover, it is also the home page of bowling centre. There is menu bar for Bowling Centre, About and Customer. The users can click on the discover button to get into the marketing page for details. The users may log in by clicking on the login button. If the users want to get out of the system, then the users may click on the close button which is in red colour.



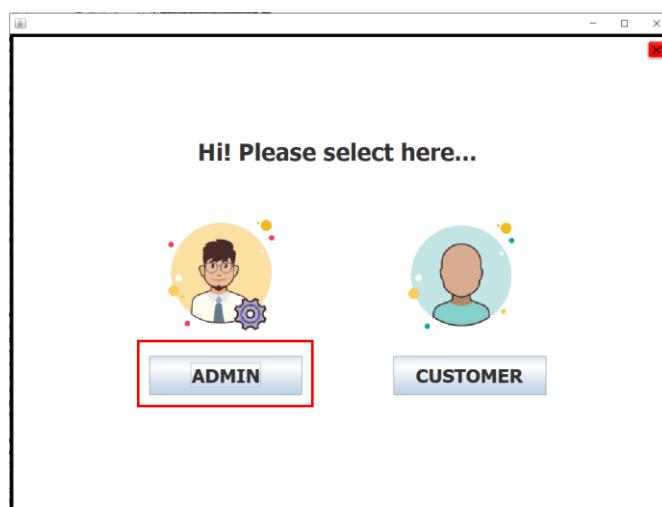
Step 2: After clicking on the discover button on the home page of Time Zone Bowling Centre, the user can get into the marketing page. In this page, the users can see the details of the bowling event such as registration fees on different days, prizes and the location as well as the ways of contacting the event authorities. The user can click on details to go to the next page, marketing details page. Furthermore, the user can click on the back button to back to the home page.



Step 3: The users will get into this marketing details page if the details button in marketing page has been clicked. The users can click on the images by their mouse to see the information of the events. The types and the categories of events are shown below the images. There are many types of events such as duck pin bowling, 5-pin bowling and candlepin bowling. Then, the users click on the red colour button to back to the marketing page.



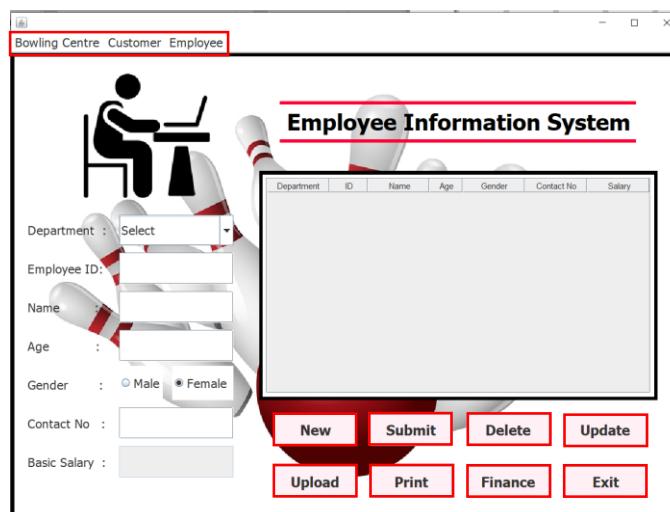
Step 4: In user option page, the user can choose their identity to log in the system. If the customer wants to log in the admin page, the customer does not have any username and password to log in the administration system. The customer should select customer button to proceed to their page and the employee should select admin button to proceed to the employee login page for the login. If the users want to get out from this page, just click on red button to back to the home page, that is, Time Zone Bowling Centre home page. Here, the user may click on the admin button to proceed to the employee login page.



Step 5: Then, the user who clicked on the admin button just now will go into the employee login page. In the employee login page, the user should be an employee of the Time Zone Bowling Centre. Otherwise, the user cannot login the employee login page. The username and the password of the employee will be given by the company. Then, the employee can use the username and password given to log into the system.



Step 6: After that, the employee will enter the employee information system. Then, the employee can key in his or her information and submit into the table. If the employee wants to reset the data, the employee can click on the new button to reset them. The employee can also delete the data by clicking on the delete button. Before that, the employee needs to select a row first to delete the information. If the employee wants to update the information, the employee can also update his or her information. The data can be uploaded to the text file with the upload button and it can be printed too with the print button. The user can go to the finance page by clicking on the finance table or through the menu bar. If the employee wants to exit from this page, just click on the exit button to back to the user option page. Moreover, the employee can select from the menu bar to go to certain pages.



Step 7: From the employee information system page, the employee can select from the menu bar or just click on the finance button to get into the finance page. In this page, the salary of the employee will be passed from the employee information system page. The user can key in the fee inside the text field and click calculate button to calculate total net profit budgeted. Additionally, the employee can reset the information which key in just now. The employee can click on the back button to back to the employee information system page.

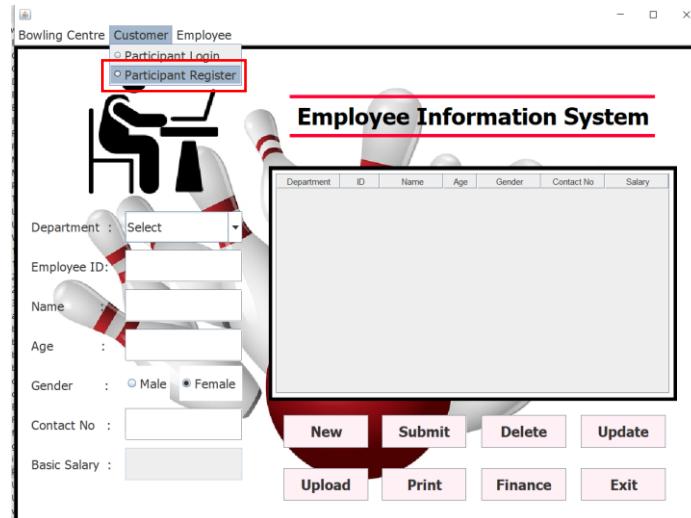
The screenshot shows a window titled "Finance Details". It has three main sections: "General", "Employee", and "Revenue". The "General" section contains fields for Utility Fee, Advertising Fee, and Prize budgeted. The "Employee" section contains fields for Employee Salary, Employee Quantity, and Total Salary. The "Revenue" section contains fields for Registration Fee without discount, Total number of Participant, and Total Income. To the right, there is a "Record Details" section with fields for Utility Fee, Advertising Fee, Prize budgeted, Total Salary, and Total Income. Below these is a field for "Total Net Profit budgeted" with the value "RM". At the bottom are three buttons: "Reset", "Calculate", and "Back".

Step 8: After go back to the employee registration page, the employee can choose update event details from the menu bar. The employee can update the event details. There are three event details such as Duck Pin Bowling, 5-Pin Bowling and Candlepin Bowling. If the employee does not want the event, he can delete the event by clicking on the delete button. After the update has been done, the employee can click go to event details button to go to the event details page.

The screenshot shows a window titled "Time Zone Bowling Centre" with a sub-section "Update Bowling Event". It displays a table with columns "Type of Event", "Category of Event", and "Information". The table contains three rows: Duck Pin Bowling (10-pin), 5-Pin Bowling (5-pin), and Candlepin Bowling (10-pin). The "Information" column for Duck Pin Bowling states: "1. A game consists of 10 frames. Each bo...". The "Delete", "Update Event", and "Go to Event Details" buttons are at the bottom, with the "Delete" and "Update Event" buttons highlighted with red boxes.

Step 9: The employee can click on the red close button or the back button to go back to the employee information system.

Step 10: The employee can help the customer to update for the information of the registration. Therefore, the employee can go to the menu bar and find participant register. It will go to the page of participant register.



Step 11: In the participant register page, the employee can update the info of the participant registration. The employee can also delete or update the record if there is any mistake on keying the record of the participant. All of the information which have been recorded in the table can be uploaded into a text file through an upload button and the page can be printed out through a print button. If the employee wants to show the total amount which the participant registered has to paid, he can click on the total amount button and the total amount will be shown. The employee needs to click again on the exit button if he wants to exit to the user option page.

 A screenshot of a Windows application window titled "Participant Registration System". The main title bar also includes "Bowling Centre About Customer". The window has two main sections. On the left, a form asks "Please fill in your details..." with fields: Name (text box), Gender (radio buttons Male/Female, Female is selected), Age (text box), No of participant (text box), Team Name (text box), Day (dropdown menu), Registration Fee (text box), and Type of Event (dropdown menu). At the bottom are buttons: RESET, ADD RECORD, UPDATE, UPLOAD, and DELETE. On the right, a section titled "TOTAL AMOUNT" shows calculations: No of participant (text box), Fee paid (text box), and Total (text box containing "RM"). At the bottom are buttons: PRINT and EXIT.

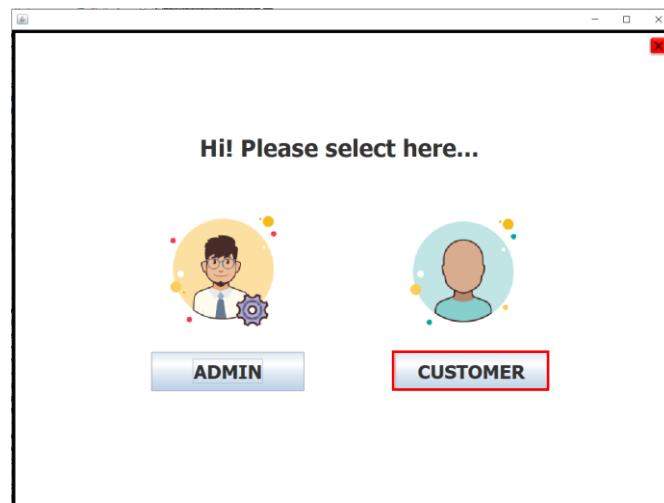
Step 12: The employee will go to the user option page after clicking the exit button.

Step 13: Click on the red button for exit again to back to the bowling centre home page.

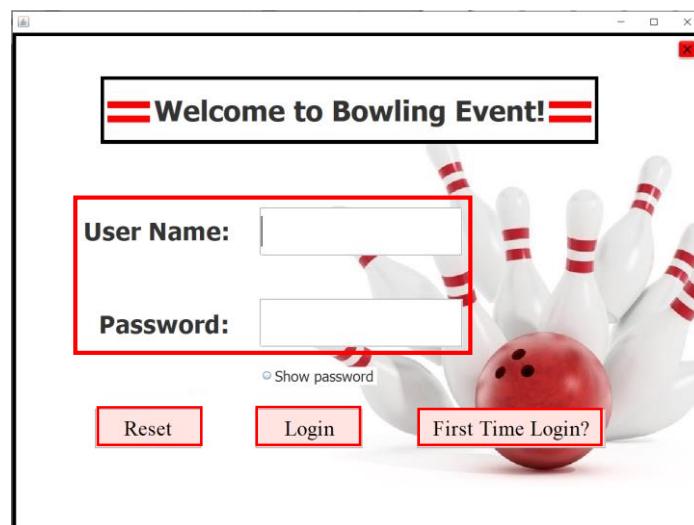
1.2 Customer User Manual

Step 1: Repeat Step 1 to 3 as in admin user manual for the bowling centre home page, marketing page and marketing details page.

Step 2: The user should click on the customer button to proceed to the next page, that is, customer login page.



Step 3: If the user chooses customer in user option page, the user will go in the customer login page. Since the customer is the first time to login this system, hence he needs to click on first time login page to register for username and password. After registration, only that the customer can login successfully, otherwise vice versa. If the username and password are key in wrongly, then the customer can reset by clicking on the reset button.



Step 13: The user should click on the first time login button to get into first time login page. The user should fill in the details and add record to the table. If one of the details is left blank, then it will come up with an error message “The record cannot be null!”. The reset button is for the user to reset the details as well as the delete button is for the user to delete the data after the user has filled in all of the details and added record into the table. If the user wants to update the details for username and password, the user should fill in the details in the text field first, select a row to update, and only then can click on the update button. The upload button will export the data into a text file after clicked. If the user wants to print the page, then the user can click on the print button.

If you are a first login user, please fill in the details...

User Name	Password

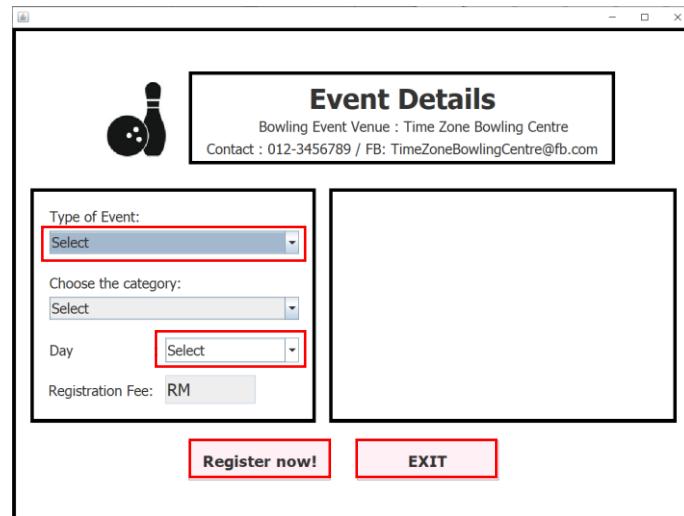
User Name :
Age :
Gender : Select
State : Select
Create password :
Confirm password :

UPDATE UPLOAD

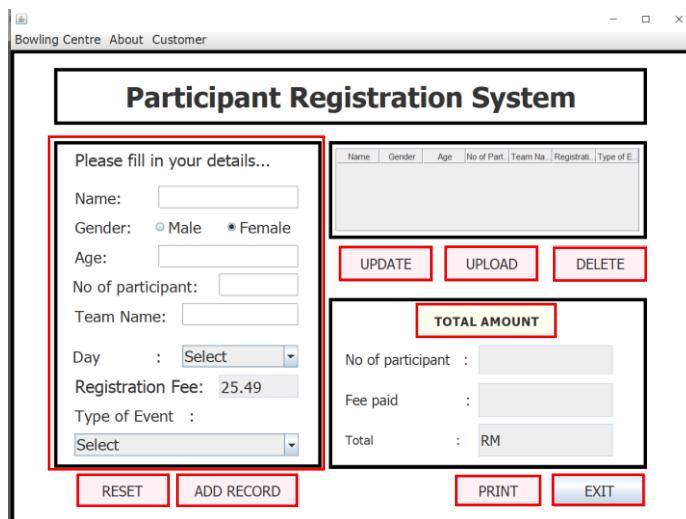
ADD RECORD RESET PRINT DELETE BACK

Step 14: The back button in the first time login page is for the user to click to back to the customer login page.

Step 15: After the customer log in the page, he or she will come into the event details page. In this page, the types of events are shown by clicking the combo box with the information. Then, the customer can also click on the combo box for day to see whether the price for the certain day is. For instance, the registration fee for Sunday and Saturday is RM 25.49 whereas other from that are RM 29.99. This information will be shown in the text area beside. After that, the user can register by clicking on the register now button. Otherwise, the user can click on the event details button to back to the Time Zone Bowling Centre home page.



Step 16: The customer will enter this customer registration page after clicking on the register now button on event details page. The user has to fill in all of the data to add record. If not, it cannot be added successfully. Moreover, the other buttons such as reset button, update button, upload button, delete button and print button have the same functions as the other registration page. If the customer wants to know how much does he wants to pay, then the customer can click on the total amount button to see the total amount which wants to pay. The total amount is calculated by the registration fee with the discount if the number of participants is more than 4.



Step 17: Then, the customer can exit from this system when he clicks on the exit button to back to user option page.

3. Ultimate Gamer Centre (Wong Re Jie 277741)

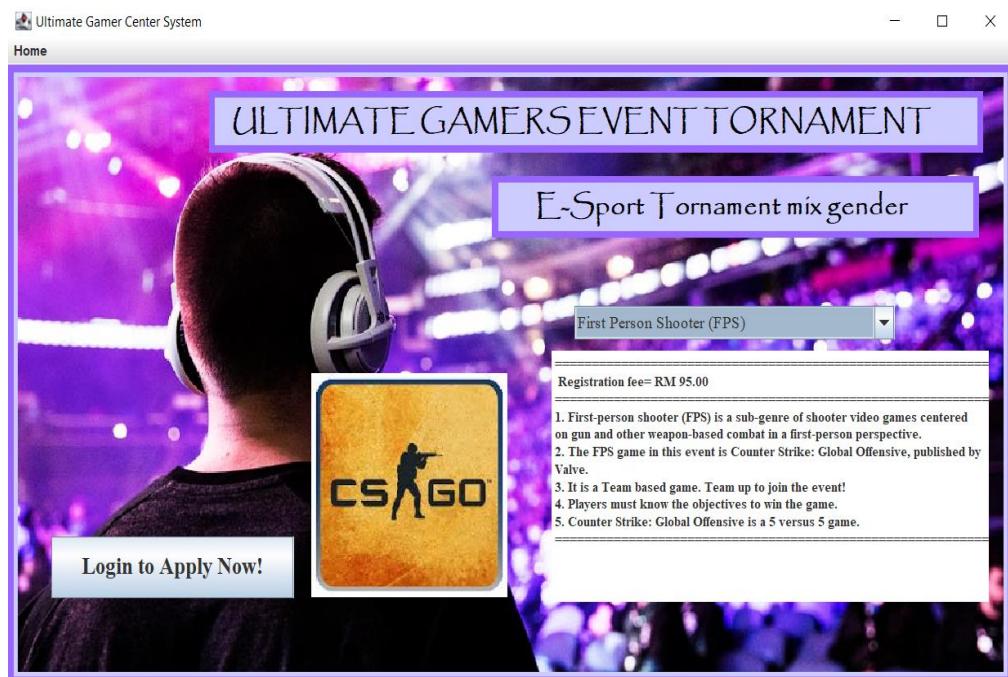
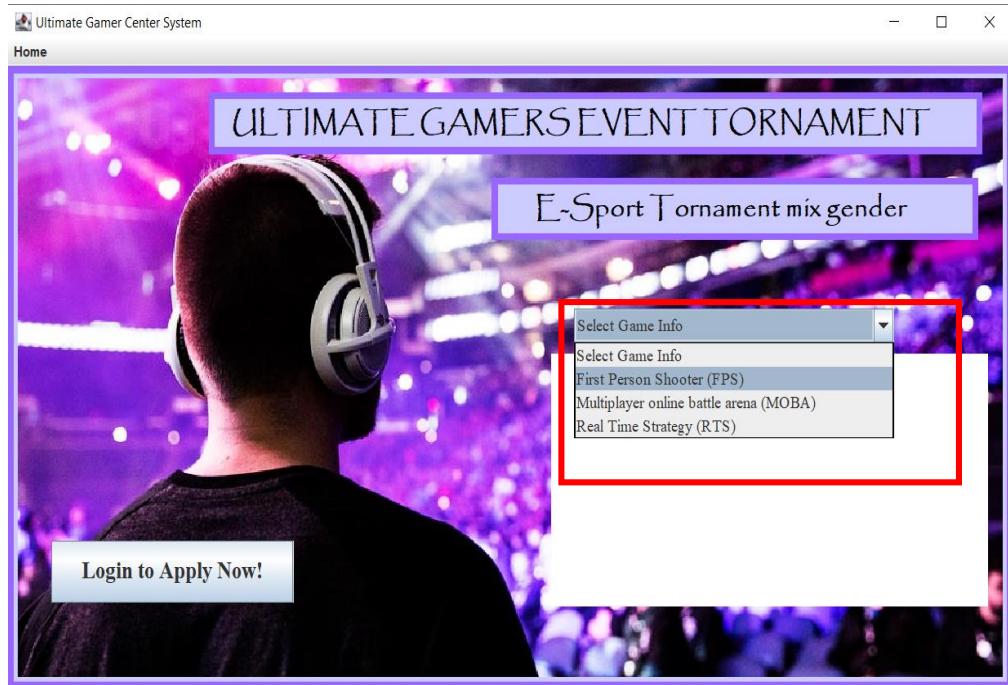
This sport event business system is for participants that interested in E-sport event. Participants can log in to this program for registration purpose. This program is operated by “Ultimate Gamer Centre”. The admin of the system can also log in to this system for administration purpose.

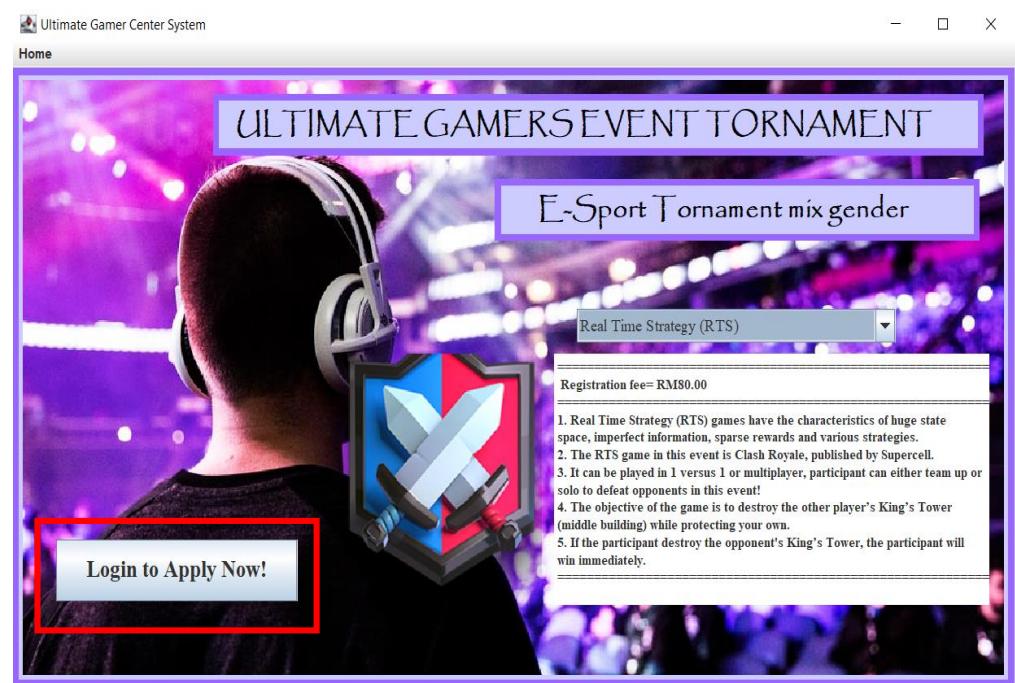
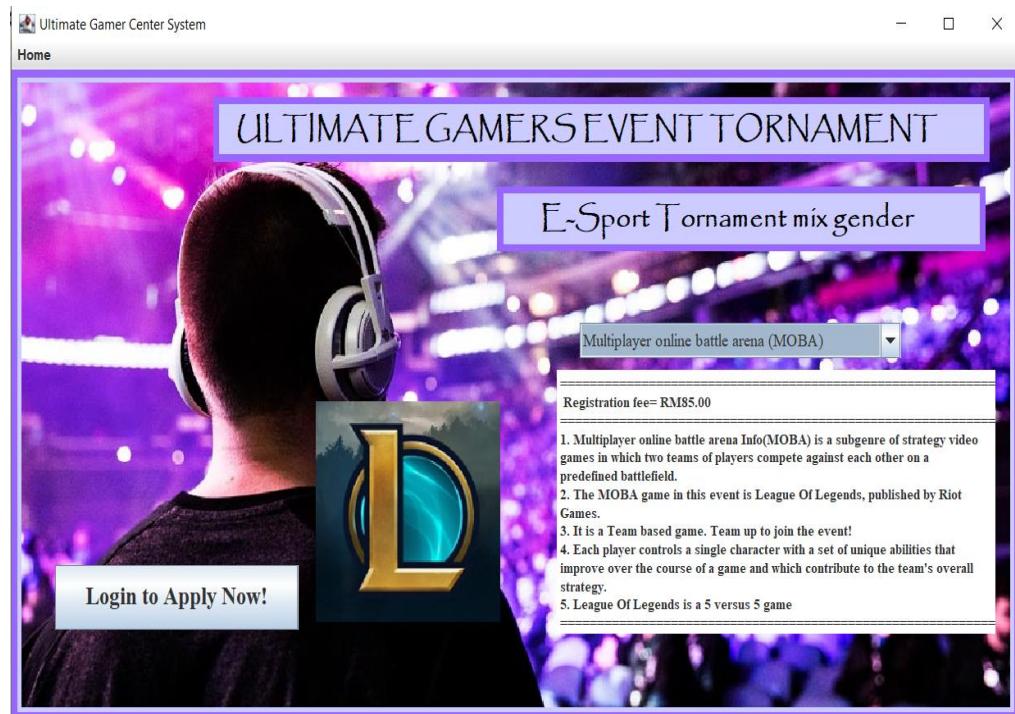
3.1 User Manual (Participant)

Step 1: first page of the system is the home page of the system or background of Ultimate Gamer Centre. User can click the “Advertisement” button or “Recent Event” for information about the recent events. There is a menu bar on the top-left corner for users to go to a specific page of the system. In advertisement page, User can click “Home” button to go back to home page and click “Recent Event” button.

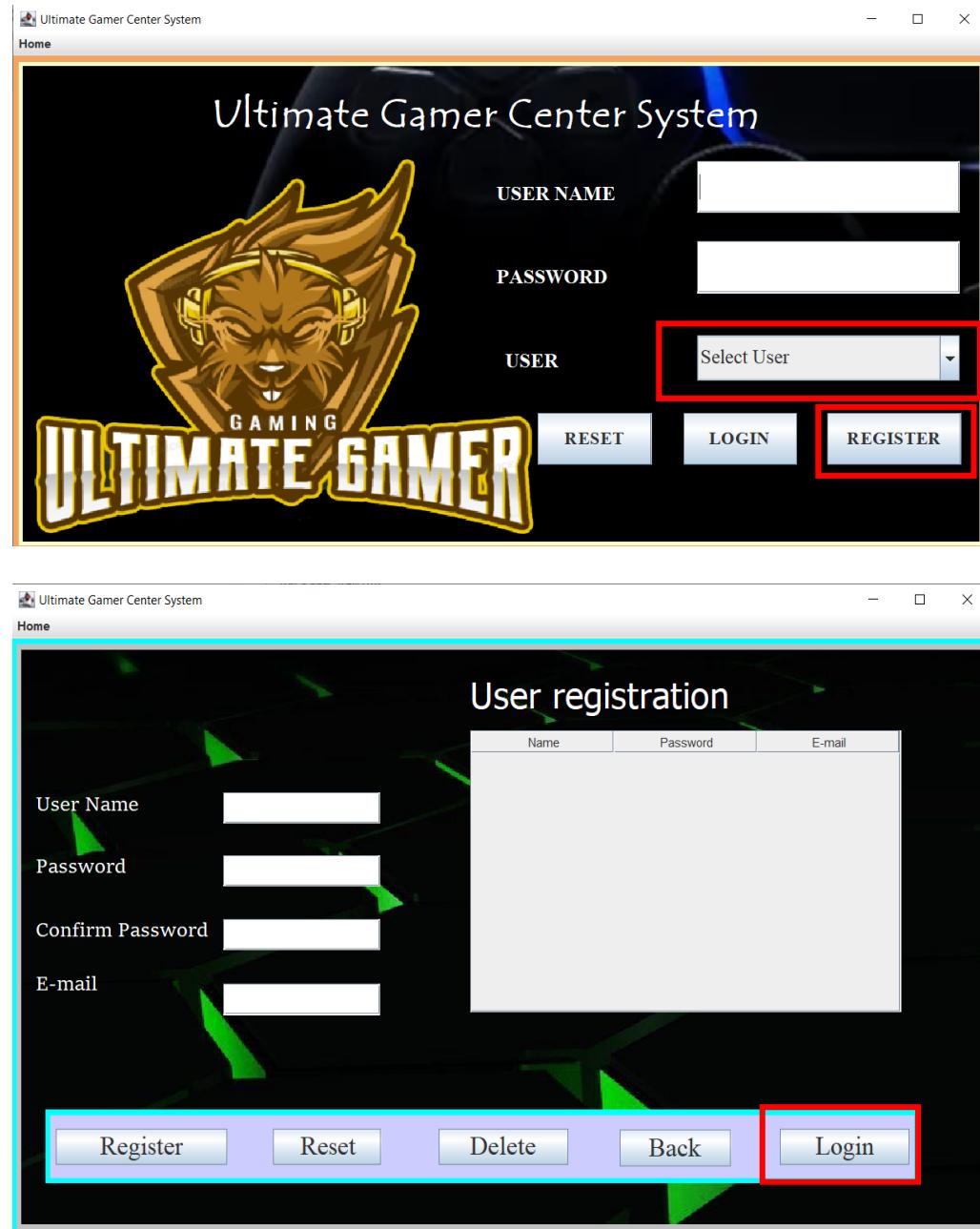


Step 2: Next after clicking the “Recent Event” button, user will go to the event details page. Then, user can select the different game category to know more about a specific gaming event. After reading the information about the events, user can click the “Login to Apply Now!” button to proceed for registration.

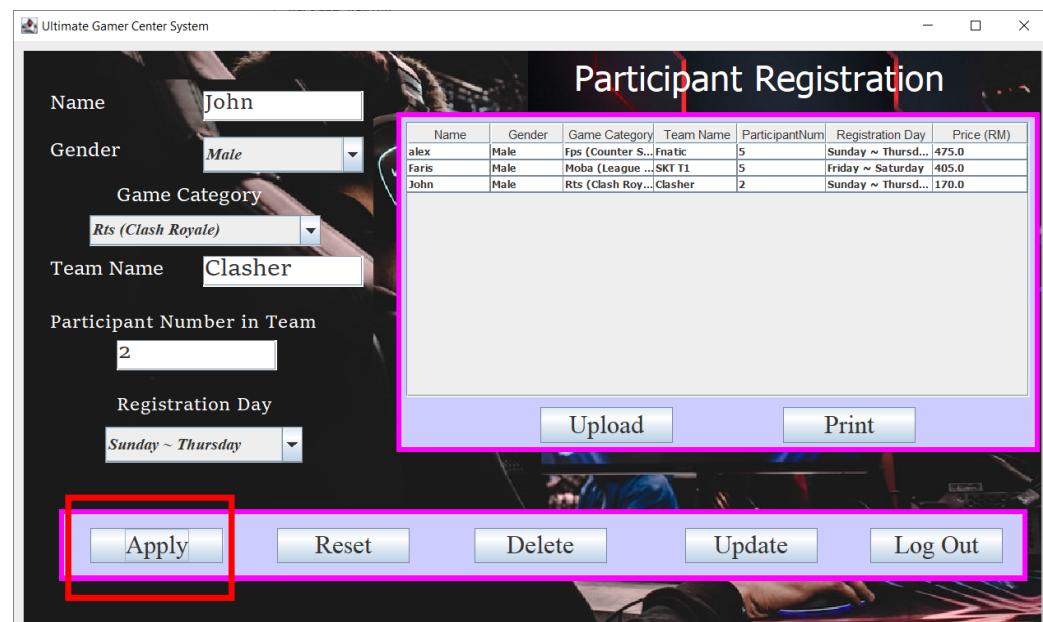




Step 3: Next after clicking the “Login to Apply Now!” button, user will go to the login page. User have to register an account and login to proceed for registration purpose. Then, user can click the “Register” button for account registration to proceed to login. After register the account, user can click the “Login” button to go back to login page and login the newly registered account as a Participant. Moreover, there is reset button for user to clear the text field, delete button to delete account record, back button to return home page.

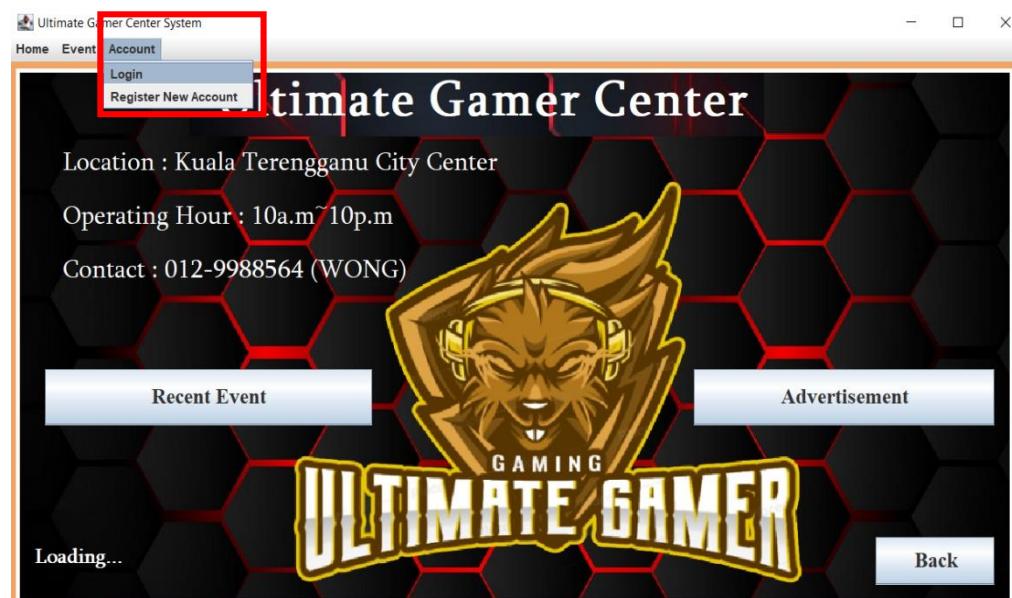


Step 4: Next after login using the newly registered account, user will go to the participant registration page. User can insert the information needed for event registration purpose and then click apply. User can know how much the registration fee depends on different game category, participant number in team and registration day (10% discount on weekend). After done registration, user can click log out to go back to the home page.



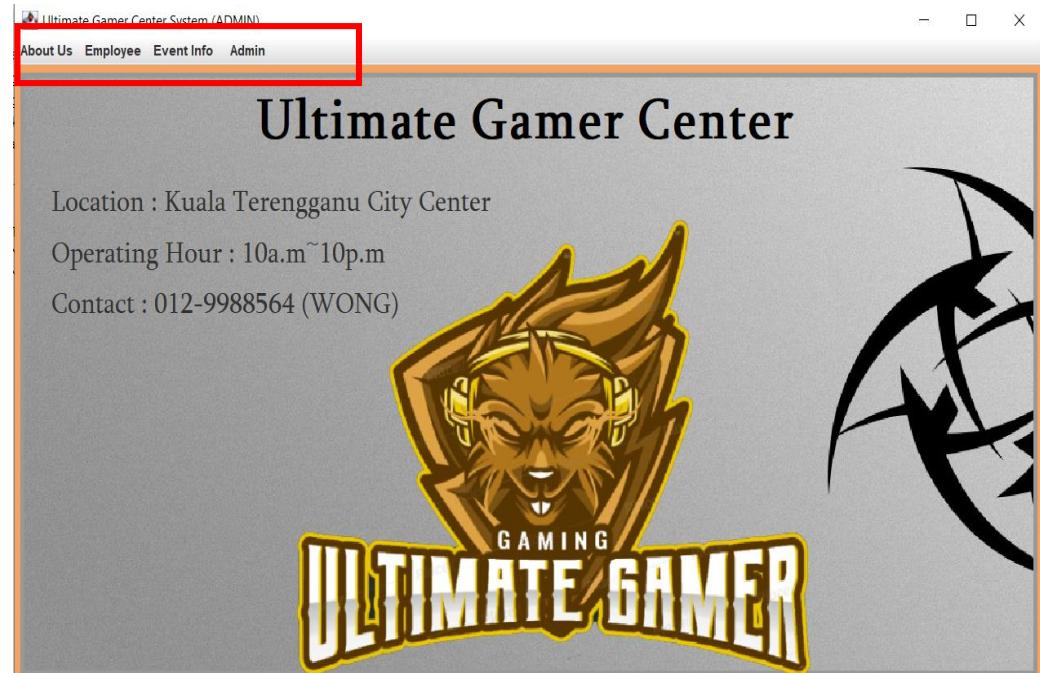
3.2 User Manual (Admin)

Step 1: first page of the system is the home page of the system or background of Ultimate Gamer Centre. There is a menu bar on the top-left corner for users to go to a specific page of the system. Admin can click the login menu and log in as an admin.

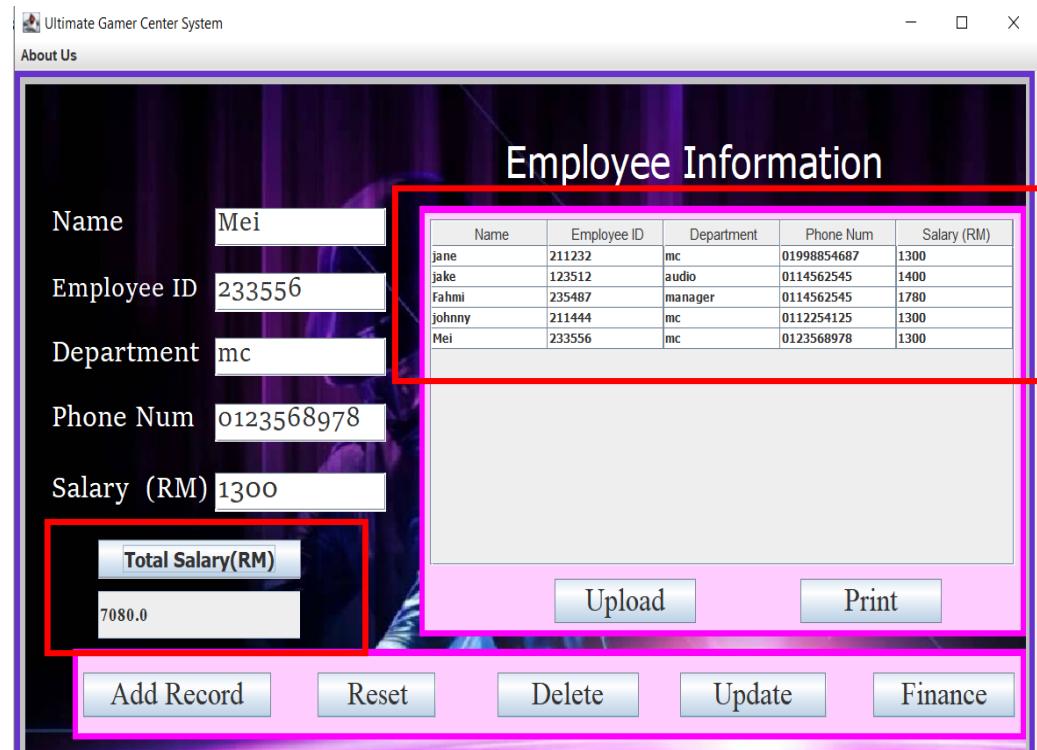




Step 2: After login as an admin, user will go to the admin page for registration purpose. There is employee menu on the menu bar to update the employee information and finance information. While admin can also update the information about the events when admin select the event info on the menu bar and the admin menu is for log out purpose.



Step 3: If admin wants to update the employees and finance information, admin can select the employee on the menu bar. After that, admin will go to the employee information page. In here, admin can insert the employee's information and admin also calculate the total salary needed to pay by clicking the total salary (RM) button. Moreover, there are some buttons such as reset to clear the text fields, delete to delete the record, update to update the record. There also has the upload button for user to save the record inside a text file and print button to print out the record. Last but not least, admin can click the finance button to proceed to the finance page for finance management purpose.

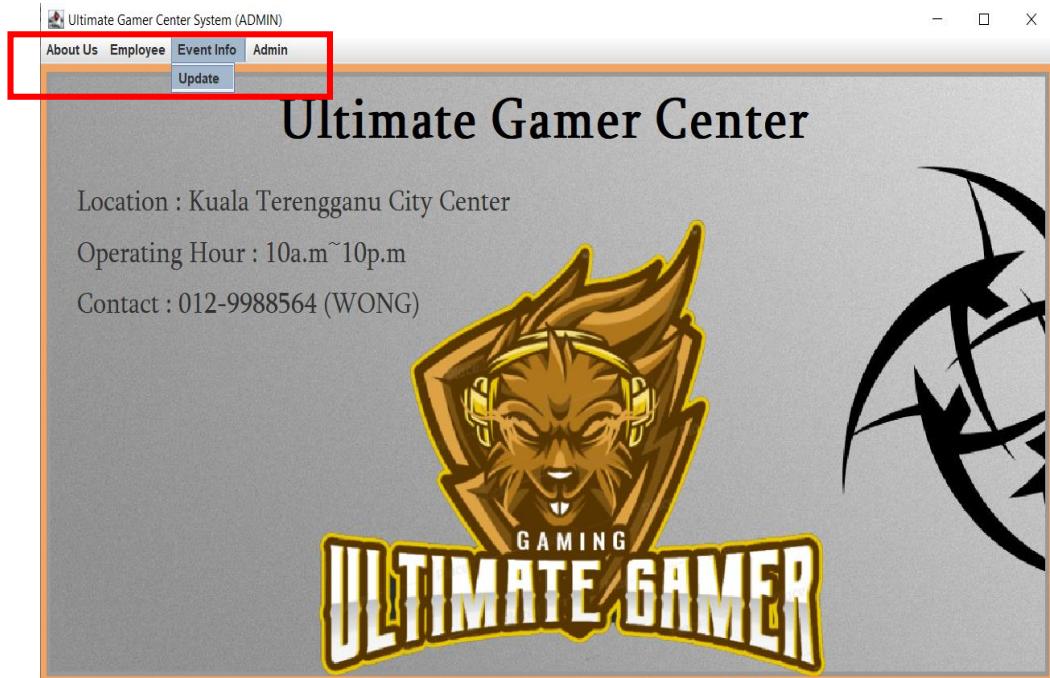


Step 4: After Clicking the finance button, admin will go to the finance information page and the amount of total salary will pass to the finance information page. Admin can input the finance information such as quantity of participants on weekdays and weekend, prize amount, total expenses to calculate the profit and cost of each event. After that, admin can click the calc net profit (RM) button to calculate the net profit of all event. Moreover, there are several buttons such as reset, update, delete, upload and print button that have the same function in employee information page. Admin can click the back button to go back to employee event page or click exit button to close the program.

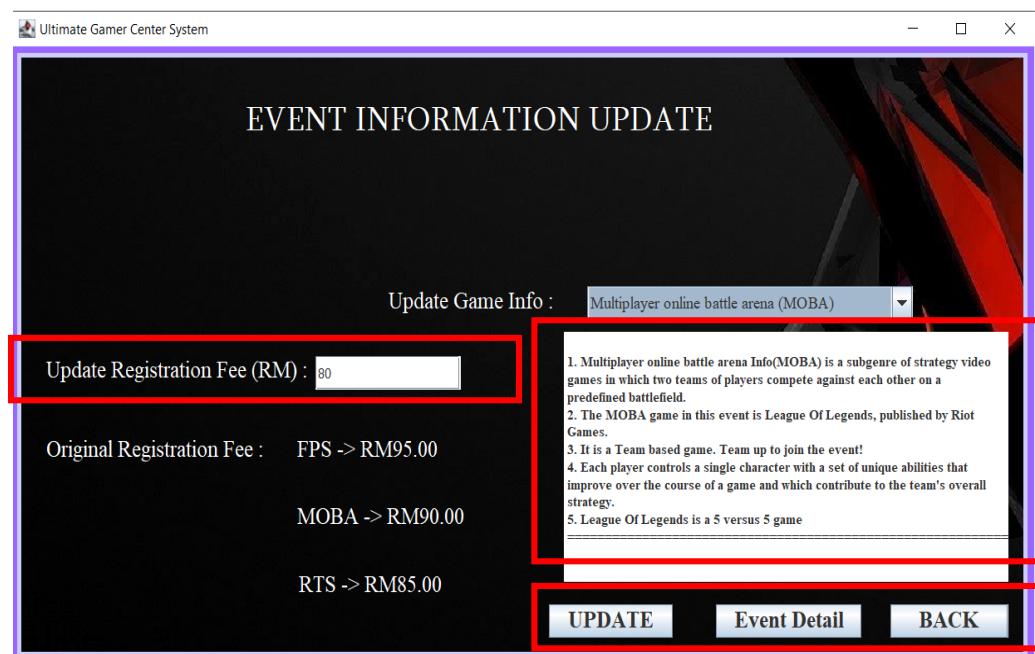
The screenshot shows the 'Finance Information' window from the 'Ultimate Gamer Center System'. The window has a dark theme with light-colored input fields and buttons. A red box highlights the 'Game Category' dropdown set to 'RTS Game' and the 'Calc Net Profit (RM)' button which displays the value '24138.0'. Another red box highlights the 'Total Employee Salary (RM)' field containing '7080.0' and the data grid below it.

Game Category	Quantity W...	Quantity ...	Prize am...	Expe...	Total Sal...	Cost	Earning	Profit
FPS Game	100	120	999	250	7080.0	8329.0	19760.0	11431.0
MOBA Game	80	90	999	250	7080.0	8329.0	14490.0	6161.0
RTS Game	130	50	999	250	7080.0	8329.0	14875.0	6546.0

Step 5: User can go back to the main admin page at the employee page. Then, user can select the update menu under the event info menu on the menu bar to go to the update event information page.



Step 6: User can go back to the main admin page at the employee page. Then, user can select the update menu under the event info menu on the menu bar to go to the update event information page. At event information update page, admin can update the game information in each game category and then update the updated registration fee for each event by clicking the update button after insert the updated information. Moreover, there are an event details button to go to the event detail page to check the updated information. Else, there are a back button to go back to main admin page and admin can proceed to log out at the admin page.

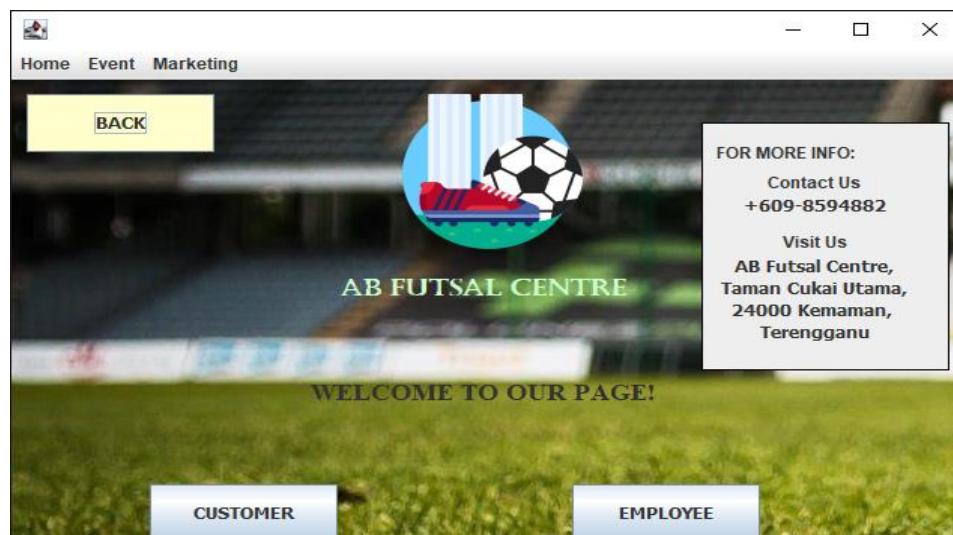


6. Futsal Centre (Athirah Bazilah Binti Baharun 277677)

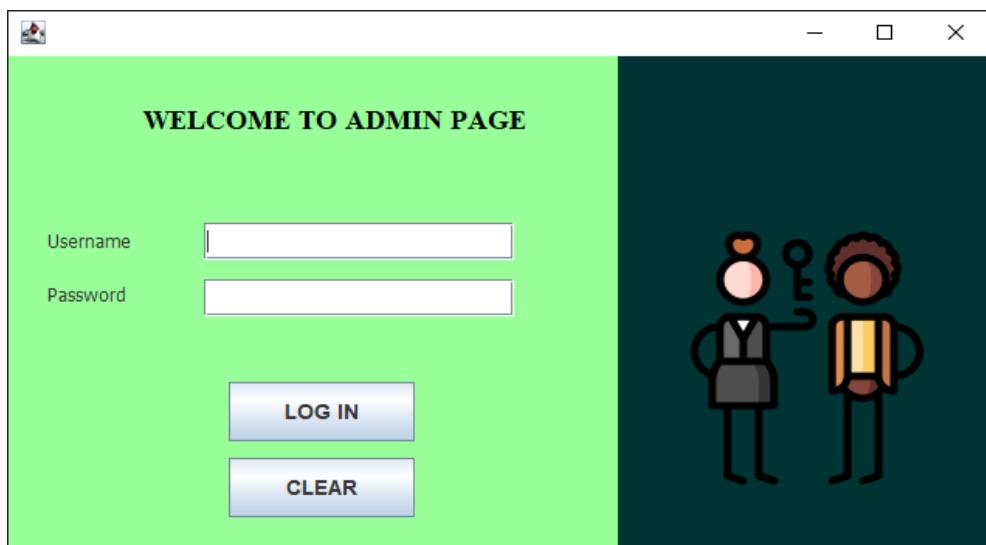
We are creating a system about sports event business to make it easier for others to participate in the sports event. There are many types of sport event in our country and one of them are futsal event. AB Futsal Centre is the one we choose to create this system for their participant and also employees.

STEP 1: We start our system with the main page which have five option choices that is Bowling Centre, Futsal Centre, Taekwondo Centre, Gaming Centre and also Basketball Centre. User or worker needs to choose one of the five sport centres that they want to participate and the one that they work.

STEP 2: If user or worker choose Futsal Centre option, they will automatically go to the home page of AB Futsal Centre system. In this page, the user can know more about this Futsal Centre such as their contact and address. On top of this page there are menu panel, the user can explore our page by clicking each of the menu button to look for the event we provide and also our advertisement. There are also 3 button in this page: customer button, employee button and back button. If you are a user, you can click on the customer button and if you are a worker you can click on the employee button and if you want to choose the other sport, you can click on the back button.



STEP 3: If you are a worker, you will choose the employee button and you will go straight to the login page for admin. In this page, you need to insert the admin user name and admin password to proceed to the next page. If you enter the wrong username or password, you can reset it again by clicking on clear button.



STEP 4: After you have successfully log in the last page, you will next go to the employee details page. If you want to add a newcomer to your worker list, you can fill in all of the requirement needed and just click add button after you finish fill in the details. If you want to update any of the worker status, just click on the list, fill the new details and click the update button. If you want to insert a new worker detail you can just click on reset button and the previous detail will disappear from the column. If you want to delete the information of the old worker, you can just select a list that you want to erase and click on delete button. If you click on the upload button, the list will be save in the text file. In this page there are also finance button, event button and back button.

EMPLOYEE DETAILS											
<input type="button" value="BACK"/>	<input type="button" value="EVENT"/>										
Department: <input type="button" value="Select Option"/> Name: <input type="text"/> ID: <input type="text"/> Gender: <input type="button" value="Select Option"/> Salary (RM): <input type="text"/>	<table border="1"> <thead> <tr> <th>Deptarm...</th> <th>Name</th> <th>ID</th> <th>Gender</th> <th>Salary (R...</th> </tr> </thead> <tbody> <tr> <td colspan="5"></td> </tr> </tbody> </table> <input type="button" value="UPLOAD"/>	Deptarm...	Name	ID	Gender	Salary (R...					
Deptarm...	Name	ID	Gender	Salary (R...							
<input type="button" value="ADD"/> <input type="button" value="UPDATE"/> <input type="button" value="RESET"/>	<input type="button" value="DELETE"/> <input type="button" value="FINANCE"/>										

STEP 5: If you click on the event button, you will go straight to the event setting. Here, you can update information of the event and also the price for each event. After you finish fill in all of the details, you can click on the update button to update the new info for that event. It will show you the page of the updated event. There also a back button for you to go back to the employee details page.

The screenshot shows a software window divided into three main sections: Tournament, Friendly, and Practice. Each section has an 'Info:' label followed by five empty input fields. Below each 'Info:' section is a 'Registration Fee (RM)' label with a single input field. At the bottom of each section is a blue 'UPDATE' button. In the top right corner of the window, there is a 'BACK' button.

STEP 6: If you click on the finance button, it will lead you to the finance page. If you want to check the total salary of your employee, you need to insert all the information needed and click on the total salary button and if you want to calculate the total budget just click on the total budget button. If you want to calculate the income that you get, you can insert the details and click on the total income button. If you want to calculate the net profit from your business, just click on the net profit button and you will get the total. There are also button for reset, upload, print and exit.

The screenshot shows a 'FINANCE DETAIL' page with a green header. On the left, there are seven input fields: Utility Fee (RM), Advertisement Fee (RM), Prize provide (RM), Employee Quantity, Employee Salary (RM), Total Salary (RM), and Total Budget (RM). On the right, there is a large text area containing various financial terms like Utility, Adver..., Prize, Empl..., Empl..., Total ..., Total ..., Parti..., Regi..., Total ..., and Net.... At the bottom, there are several buttons: UPLOAD, PRINT, ADD RECO..., RESET, and EXIT.

STEP 7: Back to the beginning, if you are the user you will choose the button for customer and you will go straight to the participant registration page. In this page you need to fill in all the details and also the event that you want to participate.

Event Description

PARTICIPANT REGISTRATION

Name	<input type="text"/>	Name Team... Gender Age Num... Event... Day... Regis... Total...						
Team Name	<input type="text"/>							
Gender	Select Option							
Age	<input type="text"/>							
Number Of Participants	Select Option							
Type Of Event	Select Option							
Day Register	Select Option							
Registration Fee (RM)	<input type="text"/>							
Total Price (RM)		<input type="text"/>	UPLOAD	PRINT				
ADD	UPDATE	RESET	DELETE	EXIT				

STEP 8: If you not remember the event that we provide, you can click on the menu button at the top of the page. There you can see the information of each event that we provide. It also has register button there so you can go back to the participant registration page and continue to fill in the form.

EVENT DESCRIPTION

TOURNAMENT	FRIENDLY
PRACTICE	
REGISTER	

STEP 9: After you finish fill in the form, you must want to know how much you need to pay for the registration fee. You can click on the total price and the amount will be automatically appeared. After that, you can just click on the add button to add your registration. You can also update, reset and delete your registration. You can also upload and print your registration detail to prove your registration. If you want to close this system you can just click on the exit button and you will automatically out from this system.

7. Taekwondo Dojang (Cheng Ming Xuan)

Step 1: Cover Page



This first page of taekwondo event program.

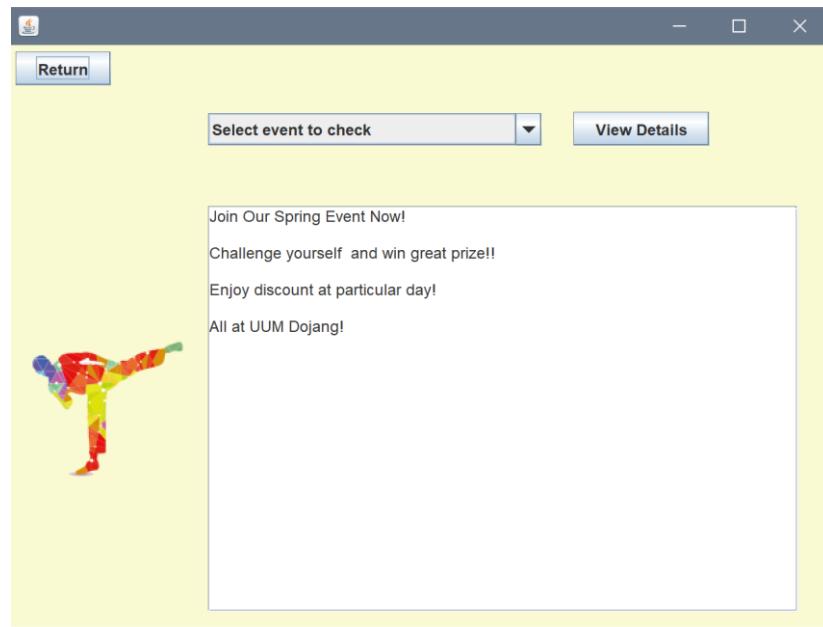
- 1) Return to main menu of all sport events.
- 2) User can log in to register themselves to participant in the event. If they are first time log in, user will need to sign up before log in.
- 3) User can select *About Us* to check more details about UUM Dojang. In *Learn More...* Button, user can check more details about the event going on.
- 4) Admin Log In Button for extra management.

Step 2: About UUM Dojang

A simple page to show details about UUM Dojang to the User.

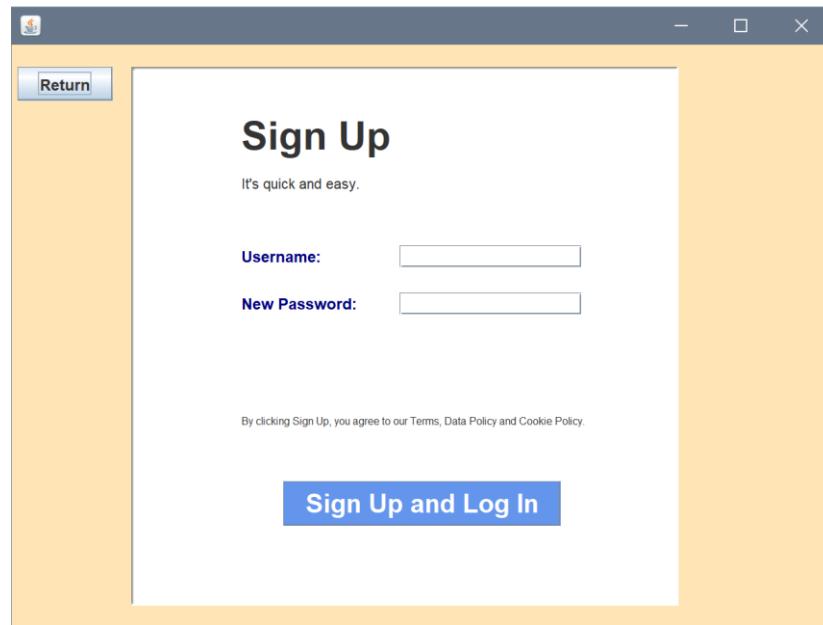
Background about taekwondo as well as contact and Dojang Location.

Step 3: Events Detail



In this page, user can select the event in the combo box and click view details. The event information will be shown in the text space below. The user may view the days of the event that are discounted, the number of participants who are eligible for the discount, and the event rules and restrictions. By clicking *Return*, user will back to the previous page.

Step 4: Sign Up



New users must sign up before they can register for events. The user will be prompted to provide a new username and password. Once a person has successfully signed up, they may log in and proceed to the event registration page.

Step 5: Event Registration

Name	Team	Age ...	Gender	Event	Day	Mem...	Total ...
ATing	Panda	16-18	Female	Event...	Sun	4	720.0
Abu	Tiger	>18	Female	Event...	Wed	8	1440.0

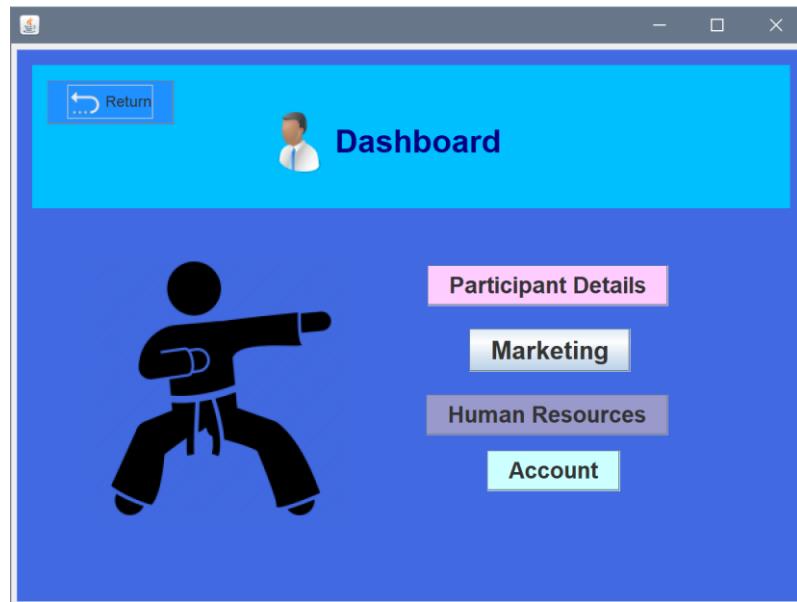
After successfully logging in or signing up, the user will be directed to the event registration page. Users need to provide their name, team name, age range, gender, number of participants, event to participate in, and event day in the registrant's information panel. The user must then click the Confirm button to obtain the total price after discount.

The user may add a new row to the registration table, pick a row of details to modify, reset all input fields, delete a row from the table, and print all the details from the functions panel. The user may also save the information as a text file by clicking the save as button. When the user has finished all of their input, they may submit the data.

Step 6: Administrator

After selecting the setting icon on the cover page, the user will be prompted to provide their admin login and password. For admin to login in and do additional operations, a valid password and username are necessary. If the user successfully logs in, a message dialogue will appear.

Step 7: Admin Dashboard



A dashboard with several options for the administrator to proceed. Administrators can manage Participant Details, Marketing, Human Resources, and User Accounts. By clicking return, the user will be returned to the UUM Dojang cover page.

Step 8: User Account

Username	Password
max	12345
bu	12345

Username: Add Edit Remove Export
Password:

Admin could manage the account for the user to log in on the user account page. Admin could create new accounts, modify usernames and passwords, delete accounts, and export the account list to a text file.

Step 8: Participant Details

The screenshot shows a Windows application window titled "Participants Data". On the left is a grid table with columns: Name, Team, Age ..., Gender, Event, Day, Mem..., and Total... . The data includes:

Name	Team	Age ...	Gender	Event	Day	Mem...	Total...
John	Tiger	>18	Male	Spring...	Sun	20	3,600
Peter	Bear	>18	Male	Spring...	Thur	4	720
Adam	Rabbit	13-15	Male	Spring...	Mon	20	3,600
Ismail	Hamster	13-15	Male	Spring...	Fri	4	800

The right side of the window contains a "Tools" panel with the following controls:

- edit
- Name:
- Team Name: team
- Age Range: 7-9
- Gender: Male
- Participants' Number: 1
- Event: Taekwondo Poomsae Open Cha...
- Day: S...
- Total Price: RM Calculate
- 00.00 Reset
- Add
- Delete
- Edit
- Save As
- Print

The participant details page displays all of the existing event attendees' information. Admin can edit the participant details by adding new participants, updating the data, removing participants, saving the participant details as a text file, and printing the participant data. Select the upper left button to return to the previous page.

Step 9: Marketing and advertisement

The screenshot shows a Windows application window titled "Advertisement". On the left is a grid table with columns: Event Name, Description, Discount Day, and Discount Rat... . The right side contains the following input fields:

Event Name:	<input type="text"/>
Description:	<input type="text"/>
Discount Day:	<input type="text"/> Sun
Discount Rate(%):	<input type="text"/> 00
<input type="button"/> Export <input type="button"/> Print	
<input type="button"/> Add	<input type="button"/> Edit
<input type="button"/> Remove	
<input type="button"/> Reset	

This page is for advertisement purpose. Admin can create a new advertisement for future usage. By creating event name and event description, select the data to have discount and how much is the discount rate. Admin may also update the list, delete advertisements, print advertisements, and export them as text files.

Step 10: Human resources

The screenshot shows a Windows application window titled "Employees Data". At the top, there is a toolbar with a back arrow icon. Below the title bar is a table with columns: Name, Gender, Age, Email, and Salary(RM). The table contains four rows of data:

Name	Gender	Age	Email	Salary(RM)
Adam	Male	22	adam@gmail.com	2,000
Mary	Female	24	mary@gmail.com	2,000
Alice	Female	33	alice@yahoo.com	2,000

Below the table is a control panel with the following fields and buttons:

- Name:
- Gender: Male
- Age: 18
- Email: .com
- Salary: RM
- Total Salary: RM
- Add
- Remove
- Reset
- Calculate
- Edit
- Print
- Export
- Financial

This page manages employee data; the table stores employee data in UUM Dojang. Admin may also control the data by utilising the add, delete, and modify tools. The data may also be printed and exported by the administrator.

To compute the total salary of all employees, click the *Calculate* option and enter the salary sum. Clicking the *Financial* button will take you to the financial page.

Step 11: Financial

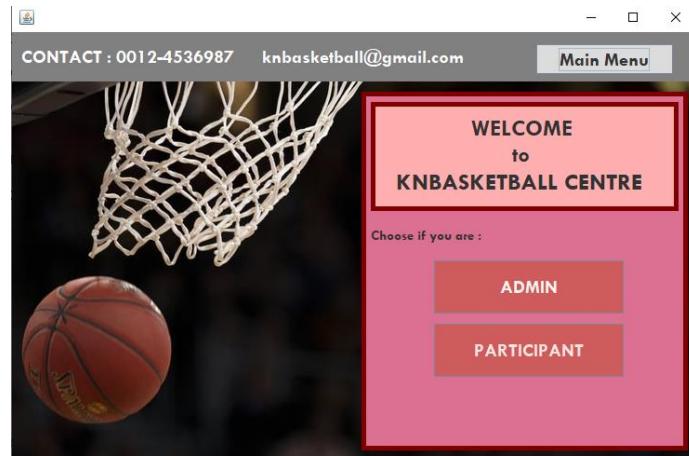
The screenshot shows a Windows application window titled "Financial". At the top, there is a toolbar with a back arrow icon. Below the title bar is a form with several input fields and calculate buttons:

- Utility Expense: RM
- Total Salary: RM 8000.0
- Calculate
- Total Income: RM 0.00
- Number of participants:
- Calculate
- Net Profit: RM
- Calculate

The financial page is used to calculate UUM Dojang's net profit. Admin needs enter UUM Dojang's utility expenses. Then, under the employee salary, click the Calculate button beneath the total salary to receive the entire salary amount. To determine UUM Dojang's income, administrators must provide the total number of participants. Finally, under net profit, choose the Calculate option to calculate dojang's net profit.

8. Basketing Centre (Nurafiza Binti Abdul Rahshid 277839)

Step 1: This is the main page of KnBasketball Centre. It has the contact number and our email and 3 button that is Admin button, Participant button and Main Menu button.



Step 2: If you press the Admin button, it will direct you to this page where only admin and staff can login to access the content of Admin. You need the Admin username and password to access this page.

A screenshot of a Windows application window titled "KNBASKETBALL CENTRE". The window has a red header bar with the title. Below it is a red "LOGIN" button. The main area contains two input fields: one for "USERNAME" and one for "PASSWORD", both with red headers. At the bottom are two red buttons: "RESET" on the left and "CONFIRM" on the right.

Step 3: This page will appear after you login. It has 5 buttons where you can access Event Details, Employee, Marketing, Finance and Back button.



Step 4: If you press the Event Details button, this page will appear showing the event details such as the difference between 3 vs 3 category and 5 vs 5 category. It also has 2 buttons that explain each category. On the 3 vs 3 and 5 vs 5 page you can press the back button that will bring you to Participant page.



<p>3v3</p> <p>1. Each game will be to 21 points or 15 minutes long. The team must win by only one point.</p> <p>2. Teams score by either regular two-point baskets, or by three-point shots taken from outside the three-point circle.</p> <p>3. All held balls will be put into play behind the three-point line with possession given alternately to each team.</p> <p>4. Each team is only allowed one 30-second timeout under the last minute of play.</p> <p>However, once a team reaches 15 points they will be in the bonus Every foul committed against the offense will result in free throws.</p>	<p>5v5</p> <p>1. 1 timeout per half.</p> <p>2. No dunking.</p> <p>3. Personal Fouls are not tracked, but do count towards team fouls.</p> <p>4. Clock does NOT stop in the 1st half.</p> <p>5. Clock stops in the 2nd half in the last 2 minutes. ONLY if a team is losing by 10 points or less</p>
--	--

Step 5: The Employee button will direct you to this page where you can fill up all the employees and it can display on the table. Here it has Add button, where you can add the information to the table. Delete button is where you can delete a row of employee. Print button to direct the employee information to print. Upload button is to save the information in .txt file. Finance button to direct you to Finance page where it will pass the employee salary to Finance and Exit button to end the program.

The screenshot shows a Windows application window titled "EMPLOYEE INFORMATION". The interface is divided into two main sections. On the left, there is a form with fields for "Department" (dropdown menu), "Name" (text input), "Employee ID" (text input), "Gender" (radio buttons for MALE and FEMALE), and "Salary" (text input). Below these fields are two buttons: "RESET" and "ADD". On the right, there is a table with columns: Department, Name, Employee ID, Gender, and Salary (RM). A single row of data is visible in the table. At the bottom of the window, there is a row of five buttons: "DELETE", "PRINT", "UPLOAD", "FINANCE", and "EXIT".

Step 6: This is Finance page. Here it has 2 calculate button in different frame where in the first frame you need to enter the quantity of employee, employee salary, prize, utility fee and advertisement fee and Calculate button to display the total of the calculation on Total Budget text field. The other Calculate button is to calculate the Total Income and Net profit of our event revenue which you need to fill up the total participant and the registration fee that been pay on that day.

The screenshot shows a Windows application window titled "FINANCE". The interface is divided into two main sections. On the left, there is a form with fields for "Employee Quantity" (text input), "Employee Salary : RM" (text input), "Prize up to : RM" (text input), "Utility Fee : RM" (text input), "Advertisement Fee : RM" (text input), and a "Calculate" button. Below these fields is a text input field for "Total Budget : RM". On the right, there is a table with columns: Employ., Employ..., Prize, Utility Fee, Ads fee, Particip., Registr..., Budget, Total Inc., and Net Profit. A single row of data is visible in the table. At the bottom of the window, there is a form with fields for "Participant Quantity" (text input), "Registration Fee : RM" (text input), "Total Income : RM" (text input), "Net Profit : RM" (text input), a "Calculate" button, and a "Save Da..." button.

Step 7: If you press the Participant button it will direct you to this marketing page where it displays the discount that you will receive and here you need to type in the day you registering to calculate the registration fee if you get 20% discount by that day. After that, you can press the Register Participant button to register.

The screenshot shows a window titled "MARKETING". Inside, there is a message box containing text about registration fees, prizes, and discounts. Below the message box are input fields for "Day:" and "Payment: RM", with a "Calculate" button between them. At the bottom right is a large orange button labeled "Register Participant".

Step 8: This page is where participant need to fill up their information to register for our event. Information like Name, Gender, Team Name, Age, Number of Participant, Category and Court. Then, click the Confirm button to add your information on the table. Delete button is for erased the information on the table. Print button is to print all the participant information. Upload button is for you to save the information on data to .txt file. Event Details button to bring you to Event Details in case you need to make sure which category you want to participate.

The screenshot shows a window titled "PARTICIPANT". On the left, there are input fields for Name, Gender (Male/Female), Team Name, Age, and Number of Participant, along with a "Reset" button. In the center, there are dropdown menus for Category (3v3, 5v5) and Court (Select). To the right is a table header with columns: Name, Gender, Team Na..., Age, Number of Part., Category, Court. Below the table is a large empty area. At the bottom are buttons for "Delete", "Print", "UPLOAD", and "Event Details".

Screenshots of the application's running

1. Bowling Centre (Foo Roon Yi 277088)

Constructor

```
1 package BowlingCentre;
2
3 import java.awt.EventQueue;
4
5 public class EmployeeLoginBowling extends JFrame {
6
7     private JPanel contentPane;
8     JTextField textField;
9     JPasswordField passwordField;
10
11    /**
12     * Launch the application.
13     */
14    public static void main(String[] args) {
15        EventQueue.invokeLater(new Runnable() {
16            public void run() {
17                try {
18                    EmployeeLoginBowling frame = new EmployeeLoginBowling();
19                    frame.setVisible(true);
20                } catch (Exception e) {
21                    e.printStackTrace();
22                }
23            }
24        });
25    }
26
27    /**
28     * Create the frame.
29     */
30    public EmployeeLoginBowling() {
31        setLayout(null);
32        setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
33        setBounds(100, 100, 998, 741);
34        contentPane = new JPanel();
35        contentPane.setBorder(new EmptyBorder(5, 5, 5, 5));
36        setContentPane(contentPane);
37        contentPane.setLayout(null);
38
39        JPanel panel = new JPanel();
40
```

The constructor inside this screenshot is default constructor, that is, the constructor with no arguments. All the codes of the design will be in this constructor. For example, there are some constructors being used in the class such as UserOptionBowling class has constructor of UserOptionBowling, EventDetailsBowling class has constructor of EventDetailsBowling as well as EmployeeLoginBowling class has constructor of EmployeeLoginBowling. The constructor is called when an object of a class is created. It can be used to set initial values in the constructor.

Encapsulation

```
1 package BowlingCentre;
2
3*import java.awt.BorderLayout;*
38
39 public class EventDetailsBowling extends JFrame {
40
41     private JPanel contentPane;
42     JTextField txtRm;
43     private static DecimalFormat df2 = new DecimalFormat("#.##");
44     protected static Object file;
45
46     /**
47      * Launch the application.
48      */
49
50     public static void main(String[] args) {
51         EventQueue.invokeLater(new Runnable() {
52             public void run() {
53                 try {
54                     EventDetailsBowling frame = new EventDetailsBowling();
55                     frame.setVisible(true);
56                 } catch (Exception e) {
57                     e.printStackTrace();
58                 }
59             }
60         });
61     }
62
63     public void setRegistrationFee(String rf) {
64         txtRm.setText(rf);
65     }
66
67     public String getRegistrationFee() {
68         return txtRm.getText();
69     }
70
71     /**
72      * Create the frame.
73     */
```

In encapsulation, the data are frequently hidden from outside classes while methods are accessible to outside classes. There is private access to keep the data inaccessible to the outside class. However, there is protected access to make the methods to accessible within the package. For the class EventDetailsBowling, this provides setter and getter methods in public to modify and view the variables.

Inheritance

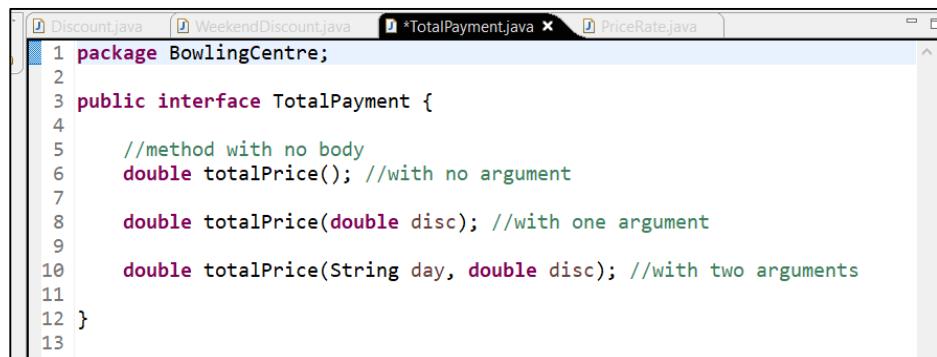


```
1 package BowlingCentre;
2
3 import java.awt.BorderLayout;
4
5 public class FinanceBowling extends JFrame {
6
7     private JPanel contentPane;
8     private JTextField UtilityFeeTextField;
9     private JTextField AdvertisingFeeTextField;
10    private JTextField PrizeBudgetedTextField;
11    JTextField RMTextField;
12    JTextField QuantityEmployeeTextField;
13    JTextField totalsalaryTextField;
14    JTextField RFTextField;
15    JTextField NoPTextField;
16    JTextField IncomeTextField;
17    JTextField UFTextField;
18    JTextField AfTextField;
19    JTextField PbTextField;
20    JTextField TotalSalaryTextField;
21    JTextField TotalIncomeTextField;
22    JTextField txtRM;
23    private static DecimalFormat df2 = new DecimalFormat("#.##");
24
25    /**
26     * Launch the application.
27     */
28    public static void main(String[] args) {
29        EventQueue.invokeLater(new Runnable() {
30            public void run() {
31                try {
32                    FinanceBowling frame = new FinanceBowling();
33                    frame.setVisible(true);
34                } catch (Exception e) {
35                    e.printStackTrace();
36                }
37            }
38        });
39    }
40}
```

There are many classes extending JFrame in eclipse. Therefore, the Graphical User Interface (GUI) components can be added to the class extended. Then, the class is based on the JFrame and holds GUI components such as JTextField, JToggleButton, JPanel, JLabel and so on. Take some examples of extending JFrame: all of these classes such as CustomerRegistrationBowling, EmployeeRegistrationBowling, MarketingDetailsBowling, BowlingCentre, MarketingBowling, and so on extends JFrame.

Polymorphism

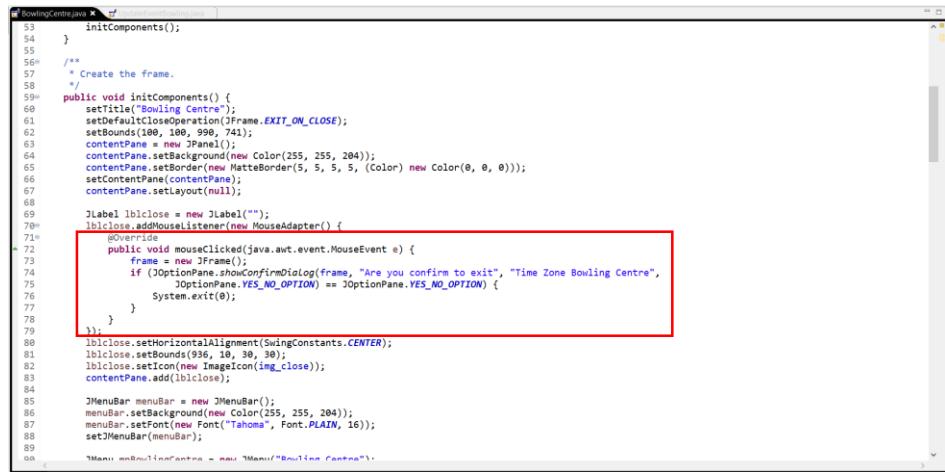
a. Overloading



```
1 package BowlingCentre;
2
3 public interface TotalPayment {
4
5     //method with no body
6     double totalPrice(); //with no argument
7
8     double totalPrice(double disc); //with one argument
9
10    double totalPrice(String day, double disc); //with two arguments
11
12 }
```

Overloading methods are shown in the interface of total payment. It has same method name, that is, total price to calculate the registration fee for the discount. However, these methods have different parameter types. Therefore, we know that the overloading is used to define multiple methods with same name but different signatures.

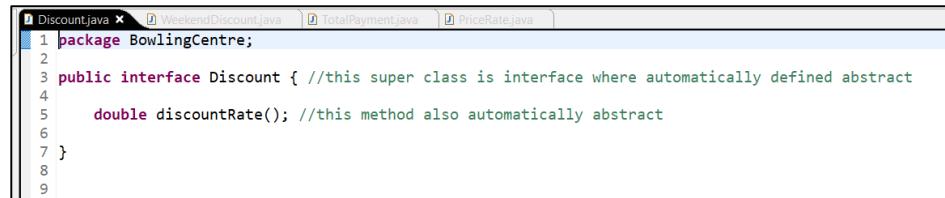
b. Overriding



```
53     initComponents();
54 }
55 /**
56 * Create the frame.
57 */
58 public void initComponents() {
59     setTitle("Bowling Centre");
60     setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
61     setBounds(100, 100, 990, 741);
62     contentPane = new JPanel();
63     contentPane.setBackground(new Color(255, 255, 204));
64     contentPane.setBorder(new MatteBorder(5, 5, 5, 5, new Color(0, 0, 0)));
65     setContentPane(contentPane);
66     contentPane.setLayout(null);
67 }
68
69 JLabel lblclose = new JLabel("");
70 lblclose.addMouseListener(new MouseAdapter() {
71     @Override
72     public void mouseClicked(java.awt.event.MouseEvent e) {
73         frame = new JFrame();
74         if ( JOptionPane.showConfirmDialog(frame, "Are you confirm to exit", "Time Zone Bowling Centre",
75             JOptionPane.YES_NO_OPTION) == JOptionPane.YES_NO_OPTION) {
76             System.exit(0);
77         }
78     }
79 })
80 lblclose.setHorizontalAlignment(SwingConstants.CENTER);
81 lblclose.setBounds(936, 10, 30, 30);
82 lblclose.setIcon(new ImageIcon(img_close));
83 contentPane.add(lblclose);
84
85 JMenuBar menuBar = new JMenuBar();
86 menuBar.setBackground(new Color(255, 255, 204));
87 menuBar.setFont(new Font("Tahoma", Font.PLAIN, 16));
88 setJMenuBar(menuBar);
89
90 Main.mainFrame = new Main("Bowling Centre");
```

The overriding method is used in bowling centre class for the mouse clicked method. If the user clicks the mouse, then it will pop out with a message that “Are you confirm to exit?”. There are some examples in other jframes too. For instance, the marketing details class also has the mouse clicked method which provides a new implementation for a method in the subclass. Moreover, there is also another overriding method named action performed method. Most of the jframes such as update event bowling class, bowling centre class, finance bowling class and so forth have such this method inside them.

Interface



```
1 package BowlingCentre;
2
3 public interface Discount { //this super class is interface where automatically defined abstract
4
5     double discountRate(); //this method also automatically abstract
6
7 }
```

This is one of the interface in this bowling centre package. In this discount interface, there is abstract method with no any argument and body. This will be used in the other classes to implement. Then, in the classes which will implement discount interface, discount rate method is accessed in public to be used in other classes with the body. There is another interface called total payment. Inside total payment, there are also some methods with no body inside them.

File I/O



```
221 });
222 Updatebtn.setFont(new Font("Tahoma", Font.PLAIN, 20));
223 Updatebtn.setBackground(new Color(255, 228, 225));
224 Updatebtn.setBounds(51, 264, 145, 51);
225 panel_2_1.add(Updatebtn);
226
227 JButton btnUpload = new JButton("UPLOAD");
228 btnUpload.addActionListener(new ActionListener() {
229     @Override
230     public void actionPerformed(ActionEvent e) {
231         try {
232             File file = new File("C:\\\\Users\\\\User\\\\eclipse-workspace\\\\P2 Project\\\\src\\\\BowlingCentre\\\\FirstTimeLoginInfo.txt");
233             if(!file.exists()) {
234                 file.createNewFile();
235             }
236             FileWriter fw = new FileWriter(file.getAbsoluteFile());
237             BufferedWriter bw = new BufferedWriter(fw);
238
239             for (int i=0; i
```

In this update button coding, the file input/output exists in here. The data will be exported into the file i/o. For instance, the record which is added from the text file in the class first time login is saved into the text file called FirstTimeLogin.txt. There are some examples in the other classes too. For example, CustomerRegistrationBowling class has the ParticipantRegistration.txt as well as the class of EmployeeRegistrationBowling has EmployeeInfoSystem.txt too. If the records are added into the table in the jframe, then the information will be uploaded into the text files by then.

Exception handling



```
185 table.setCellSelectionEnabled(true);
186 table.setFont(new Font("Tahoma", Font.PLAIN, 14));
187 table.setBackground(Color.WHITE);
188 table.setModel(new DefaultTableModel(
189     new Object[][] {
190     },
191     new String[] {
192         "User Name", "Password"
193     }
194 ));
195 scrollPane.setViewportView(table);
196
197 JButton Updatebtn = new JButton("UPDATE");
198 Updatebtn.addActionListener(new ActionListener() {
199     @Override
200     public void actionPerformed(ActionEvent arg0) {
201         try {
202             if(CreatePasswordField.getText().equals(ConfirmAgainPasswordField.getText()))
203             {
204                 DefaultTableModel model = (DefaultTableModel)table.getModel();
205                 int i = table.getSelectedRow();
206                 if(i!=0) //if single row is selected than update
207                 {
208                     model.setValueAt(usernameTextField.getText(),i,0);
209                     model.setValueAt(CreatePasswordField.getText(), i, 1);
210                     JOptionPane.showMessageDialog(null, "Update Successfully");
211                 }
212             }
213             else
214                 JOptionPane.showMessageDialog(null, "The record is failed to update! ", "Error", JOptionPane.ERROR_MESSAGE);
215             catch (Exception e) {
216                 JOptionPane.showMessageDialog(null, "Make sure your password are matched!", "Message", JOptionPane.OK_OPTION);
217             }
218         }
219     }
220 });
221
222 }
```

The exception handling in this coding is exception e. If the password is not matched, then it will throw an exception that make sure your password is matched. The exception handling is managed through try and catch. The codes are contained within try and catch block. If there is error, it will throw an exception and the message in the catch block will come out. There are also some similar examples in other codes. For example, in the UpdateEventBowling class, there is also a try and catch block. If the event is updated, then it will be printed out through the codes in try block.

2. Ultimate Gamer Centre (Wong Re Jie 277741)

Constructor

```
public Finance(String s) {
    this.totalEmSalary=s;

    setTitle("Ultimate Gamer Center System");
    setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
    setBounds(100, 100, 1027, 579);
    contentPane = new JPanel();
    contentPane.setBorder(new EmptyBorder(5, 5, 5, 5));
    setContentPane(contentPane);
    contentPane.setLayout(null);
    JPanel panel = new JPanel();
    panel.setBackground(Color.LIGHT_GRAY);
    panel.setBorder(new MatteBorder(5, 5, 5, 5, (Color) Color.BLACK));
    panel.setBounds(0, 0, 1007, 543);
    contentPane.add(panel);
    panel.setLayout(null);

    JPanel panel_1 = new JPanel();
    panel_1.setLayout(null);
    panel_1.setBorder(new MatteBorder(5, 5, 5, 5, (Color) Color.BLACK));
    panel_1.setBackground(new Color(204, 204, 255));
    panel_1.setBounds(21, 48, 421, 398);
    panel.add(panel_1);

    JLabel lblPQuantityWeekday = new JLabel("Quantity of participant registration in Weekdays");
    lblPQuantityWeekday.setForeground(new Color(255, 255, 255));
}
```

The constructor of the screenshot is the Finance constructor which is a constructor with 1 argument in Finance class. The constructor needs to receive value of the total employee salary to continue working, this makes the admin has to update the employee's information before update the finance information. Then the finance constructor will receive the value.

Encapsulation

```
public void setFpsDetail(String fpsD) {
    fpsDetail=fpsD;
}

public void setMobaDetail(String mobaD) {
    mobaDetail=mobaD;
}
public void setRtsDetail(String rtsD) {
    rtsDetail=rtsD;
}

public String getFpsDetail() {
    return fpsDetail;
}

public String getMobaDetail() {
    return mobaDetail;
}

public String getRtsDetail() {
    return rtsDetail;
}
```

The encapsulation method used in the screenshot is in the Event Details class. Which using setter and getter method to set the event details and get the event details for further operation. This makes admin can set and update the event details to get and display the updated event details.

Inheritance

```
public class Employee extends JFrame {  
  
    private JPanel contentPane;  
    private JTable EmployeeTable;  
    private JTable model;  
    private JFrame frame;  
    private JTextField salary;  
    private JTextField name;  
    private JTextField employeeID;  
    private JTextField department;  
    private JTextField phoneNum;  
    private double totalSalary=0;  
    private JTextField textField;  
  
    /**  
     * Launch the application.  
     */  
    public static void main(String[] args) {  
        EventQueue.invokeLater(new Runnable() {  
            public void run() {  
                //
```

The inheritance method used in the screenshot is in the Employee class. All class of the GUI in this program extends from Jframe because this program needs to inherit and add the GUI components such as JTextField, JLabel, JPanel and more to the extended class.

Polymorphism

a. Overloading

```
public double totalPrice(double registerFee) { //overloading with 1 argument  
    double fee=registerFee;  
    return fee;  
}  
//calculate price with discount  
public double totalPrice(double registerFee,double discount) { //overloading with 2 argument  
    double fee=registerFee;  
  
    fee=fee*(1-discount);  
    return fee;  
}
```

The overloading method used in the screenshot is in the Participant Registration class. The over loading methods are overloading with 1 argument and overloading with 2 arguments. The methods are used to calculate the registration fee and registration fee with discounts in the Participant Registration class.

b. Overriding

```
EmployeeTable = new JTable();
EmployeeTable.setFont(new Font("Tahoma", Font.BOLD, 10));
EmployeeTable.addMouseListener(new MouseAdapter() {
    @Override
    public void mouseClicked(MouseEvent arg0) {
        int i = EmployeeTable.getSelectedRow();
        if(i>=0) {
            name.setText(model.getValueAt(i,0).toString());
            employeeID.setText(model.getValueAt(i,1).toString());
            department.setText(model.getValueAt(i,2).toString());
            phoneNum.setText(model.getValueAt(i,4).toString());
            salary.setText(model.getValueAt(i,4).toString());

            JOptionPane.showMessageDialog(null, "Update Successfully");
        }
        else
        {
            JOptionPane.showMessageDialog(null, "Please select a row first!");
        }
    }
});
```

The overriding method used in the screenshot is in the Employee class. The overriding method is used for many classes such as Participant Registration and Finance class, the mouse clicked method for user is to update the record in the table.

Interface

```
public interface Discount { //2.5 Interface, for discount rate
    double discountRate();
}

class WeekendDiscountRate implements Discount { //implementation of interface Discount
    public double discountRate() {
        return 0.10;
    }
}
```

The interface in the screenshot is Discount. There is a method called discount rate with no body. The abstract method will be used in the Weekend discount rate class that implements from the Discount class and then also implements the discount rate method inside the Discount interface.

File I/O

```
JButton btnUpload = new JButton("Upload");
btnUpload.addActionListener(new ActionListener() {
    @Override
    public void actionPerformed(ActionEvent e) {
        try { // 2.2 Exception Handling
            File file = new File("D:\\upload file\\EmployeeList.txt");
            if(!file.exists()) { // 2.3 File IO
                file.createNewFile();
            }
            FileWriter fw = new FileWriter(file.getAbsoluteFile());
            BufferedWriter bw = new BufferedWriter(fw);

            bw.write("\n");
            for (int i=0; i<EmployeeTable.getRowCount(); i++) {
                for (int j=0; j<EmployeeTable.getColumnCount(); j++) {
                    bw.write(EmployeeTable.getModel().getValueAt(i, j) + " | ");
                }
                bw.write("\n");
            }
            bw.close();
            fw.close();
            JOptionPane.showMessageDialog(null, "Data Exported");
        } catch(Exception ex) {
            ex.printStackTrace();
        }
    }
});
```

The class in this screenshot is from Employee class. The File I/O technique is used inside the coding of upload button. When user click the upload button, the data input by user will be exported and saved inside a text file called EmployeeList.txt.

Exception handling

```
JButton LoginButton = new JButton("LOGIN");
LoginButton.setBounds(676, 364, 115, 53);
LoginButton.addActionListener(new ActionListener() {
    public void actionPerformed(ActionEvent e) {
        try { // 2.2 Exception Handling
            if (UserNameTextField.getText().equals("wong") && PasswordTextField.getText().equals("wong666")
                && UserComboBox.getSelectedItem().equals("Admin")) {
                JOptionPane.showMessageDialog(null, "Login Successful");
                Admin a = new Admin(); // calling another frame/window
                a.setModalExclusionType(null);
                a.setVisible(true);
                dispose();
            }
            for (int i = 0; i < UserRegistration.table.getRowCount(); i++) {
                if (UserNameTextField.getText().equals(UserRegistration.table.getValueAt(i, 0))
                    && PasswordTextField.getText().equals(UserRegistration.table.getValueAt(i, 1))
                    && UserComboBox.getSelectedItem().equals("Participant")) {
                    JOptionPane.showMessageDialog(null, "Login Successful");
                    ParticipantRegistration gm = new ParticipantRegistration(); // calling another frame/window
                    gm.setModalExclusionType(null);
                    gm.setVisible(true);
                    dispose();
                }
            }
            if (UserComboBox.getSelectedItem().equals("Select User")) {
                JOptionPane.showMessageDialog(null, "Please select the correct user");
            }
        } catch (Exception ex) {
            JOptionPane.showMessageDialog(null, "Please enter the correct user and password.");
        }
    }
});
```

The exception handling in this screenshot is used in the Login class, using the try catch method. If the user name, password and user type is not match with the data inside the user registration database or if there is any error, it will pop out “Please enter the correct user and password.” message.

3. Futsal Centre (Athirah Bazilah Binti Baharun 277677)

Constructor

```
47
48    /**
49     * Create the frame.
50     */
51    public Company_Background() {
52        setVisible(true);
53        setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
54        setBounds(100, 100, 650, 450);
55
56        JMenuBar menuBar = new JMenuBar();
57        setJMenuBar(menuBar);
58
59        JMenu mnNewMenu = new JMenu("Home");
60        menuBar.add(mnNewMenu);
61
62        JMenuItem mntmNewItem_2 = new JMenuItem("Company Background");
63        mntmNewItem_2.addActionListener(new ActionListener() {
64            public void actionPerformed(ActionEvent arg0) {
65                Company_Background about = new Company_Background();
66                about.setVisible(true);
67            }
68        });
69    }
70}
```

The constructor is called automatically whenever an object is created. A constructor is like an instance method that usually has the same name as the class, and can be used to set the values of the members of an object, either to default or to user-defined values. The constructor initializes the object, and it cannot be static, final, abstract, and synchronized. For example, if the class is Company_Background so the constructor also will be Company_Background().

Encapsulation

```
30 import java.awt.BorderLayout;
31
32 public class Employees extends JFrame {
33
34     private JPanel contentPane;
35     private JTextField textName;
36     private JTextField textID;
37     private JTable table;
38     DefaultTableModel model;
39     private JTextField textSalary;
40
41     /**
42      * Launch the application.
43      */
44     public static void main(String[] args) {
45         EventQueue.invokeLater(new Runnable() {
46             public void run() {
47                 try {
48                     Employees frame = new Employees();
49                     frame.setVisible(true);
50                 } catch (Exception e) {
51                     e.printStackTrace();
52                 }
53             }
54         });
55     }
56 }
```

In encapsulation, the variables of a class will be hidden from other classes, and can be accessed only through the methods of their current class. We usually declare the variables of a class as private. If they want to excess the code, they need to provide public setter and getter methods to modify and view the variables values. From this example, all the variables of Finance class are declared as private.

Inheritance

```
1 import java.awt.BorderLayout;
2
3 public class Finance extends JFrame {
4
5     private JPanel contentPane;
6     private JTable table;
7     private JTextField textUtility;
8     private JTextField textAdvertisement;
9     private JTextField textPrize;
10    private JTextField textEmployeeQ;
11    private JTextField textEmployeeS;
12    private JTextField textTotalSalary;
13    private JTextField textTotalBudget;
14    private JTextField textParticipantQ;
15    private JTextField textRegistration;
16    private JTextField textTotalIncome;
17    private JTextField textNetProfit;
18    private JFrame frame;
19
20    /**
21     * Launch the application.
22     */
23 }
```

Inheritance is a mechanism wherein a new class is derived from an existing class. classes may inherit or acquire the properties and methods of other classes. A class derived from another class is called a subclass, whereas the class from which a subclass is derived is called a superclass. As the picture show, the Finance class extends JFrame. It means Finance class inherits JFrame.

Polymorphism

i. Overloading

```
2
3 interface Payment {
4
5     double totalPrice();
6     double totalPrice(double disc);
7     double totalPrice(String d, double disc);
8
9 }
10
```

Overloading is a feature which a class has more than one method of the same name and their parameters are different. It can say that overloading is a concept which we can create multiple methods of the same name in the same class, and all methods work in different ways. When more than one method of the same name is created in a same class, it is called overloading. For example, in this interface Payment, there are 3 types of different parameters.

ii. Overriding

```
152     table = new JTable();
153     table.setModel(new DefaultTableModel(
154         new Object[][] {
155             },
156             new String[] {
157                 "Department", "Name", "Employee ID", "Salary (RM)"
158             }
159         ));
160     scrollPane.setViewportView(table);
161 
163@     table.addMouseListener(new MouseAdapter() {
164@         @Override
165         public void mouseClicked(MouseEvent e) {
166             int i = table.getSelectedRow();
167             comboBoxDepartment.setToolTipText(model.getValueAt(i, 0).toString());
168             textName.setText(model.getValueAt(i, 1).toString());
169             textID.setText(model.getValueAt(i, 2).toString());
170             comboBoxGender.setToolTipText(model.getValueAt(i, 3).toString());
171             textSalary.setText(model.getValueAt(i, 4).toString());
172         }
173     });
174     model = new DefaultTableModel();
175     Object[] column = {"Department", "Name", "ID", "Gender", "Salary (RM)"};
176     Object[] row = new Object[5];
177     model.setColumnIdentifiers(column);
178     table.setModel(model);
179 
```

Overriding is a feature that allows a subclass or child class to provide a specific implementation of a method that is already provided by one of its super-classes or parent classes. When a method in a subclass has the same name, same parameters or signature, and same return type as a method in its super class, then the method in the subclass is said to override the method in the super class. For example, in this project, the mouseClicked method is an overriding because it also appears in other JFrame.

Interface

```
2
3 public interface Discount {      //similar to abstraction for super class
4
5     double discRate();        //this is heading method without body
6
7 }
8
9 | 
```

Writing an interface is similar to writing a class. However, a class describes the attributes and behaviours of an object. And an interface contains behaviours that a class implements. Unless the class that implements the interface is abstract, all the methods of the interface need to be defined in the class. For example, from the picture, Discount is interface because it is an abstract method.

File I/O

```
JButton btnUpdate_1 = new JButton("UPLOAD");
btnUpdate_1.addActionListener(new ActionListener() {
    public void actionPerformed(ActionEvent arg0) {
        try {
            File file = new File("C:\\Users\\HP USER\\Desktop\\Athirah\\SEMESTER 2\\PROGRAMMING 2\\textFolder\\Registration.txt");
            if(!file.exists()) {
                file.createNewFile();
            }
            FileWriter fw = new FileWriter(file.getAbsoluteFile());
            BufferedWriter bw = new BufferedWriter(fw);

            for (int i=0; i
```

In this project, we also use file input and output to export the data to the file Registration.txt. The data will be save in the Registration.txt text file. If insert any data in this system, the data automatically will be export to the text file.

Exception Handling

```
JButton btnTotalPrice = new JButton("Total Price (RM)");
btnTotalPrice.addActionListener(new ActionListener() {
    public void actionPerformed(ActionEvent arg0) {
        double registration, disc;
        int quantity;
        try {
            if (comboDay.getSelectedItem().equals("Friday") || comboDay.getSelectedItem().equals("Saturday")) {
                registration = Double.parseDouble(textRegistration.getText());
                quantity = Integer.parseInt((String) comboBoxPart1.getSelectedItem());
                disc = 0.10;

                double TotalPrice = (registration * quantity) - (registration * quantity * disc);
                textTotalPrice.setText(Double.toString(TotalPrice));
            }
            else {
                registration = Double.parseDouble(textRegistration.getText());
                quantity = Integer.parseInt((String) comboBoxPart1.getSelectedItem());
                disc = 0.10;

                double TotalPrice = (registration * quantity);
                textTotalPrice.setText(Double.toString(TotalPrice));
            }
        } catch (Exception e1) {
            JOptionPane.showMessageDialog(null, "Please Enter Valid Number");
        }
    }
});
```

Exception handling ensures that the flow of the program does not break when an exception occurs. If an exception occurs, then program execution gets terminated and a system generated error message is shown to the user. For example, in this code the exception is Exception e1. If the user input the wrong number, the exception e1 will occur and a warning message will be display to the user.

4. Taekwondo Dojang (Cheng Ming Xuan)

Constructor

```
mainMenu.java x
47         frame.setVisible(true);
48     } catch (Exception e) {
49         e.printStackTrace();
50     }
51 }
52 });
53 }
54
55 /**
56 * Create the frame
57 */
58 public mainMenu() {
59     initComponents();
60     createEvents();
61 }
62
63 private void initComponents() {
64     setFont(new Font("Arial", Font.PLAIN, 12));
65     setBackground(new Color(176, 196, 222));
66     setIconImage(Toolkit.getDefaultToolkit().getImage(mainMenu.class.getResource(
67
68         setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
69         setBounds(100, 100, 640, 480);
70         contentPane = new JPanel();
71         contentPane.setBorder(new EmptyBorder(5, 5, 5, 5));
72         setContentPane(contentPane);
73 }
```

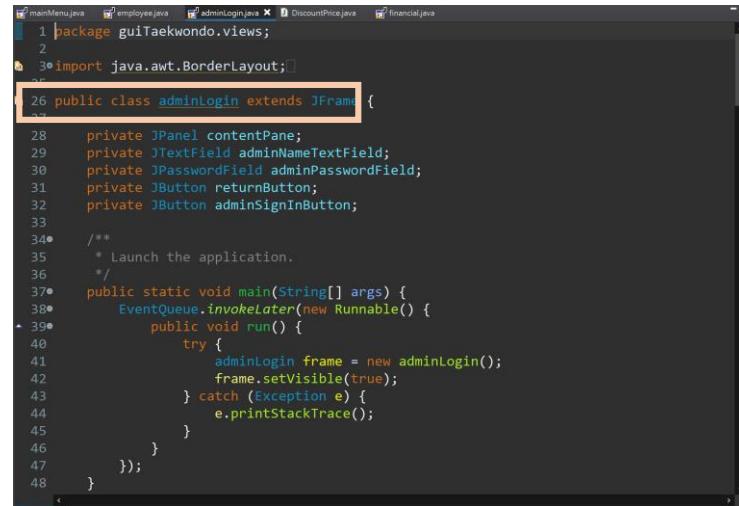
When a class object is constructed, constructor will be used to set the object's initial values. In this default constructor of `mainMenu` without argument has 2 methods. The `initComponents()` method contains all the design such as background colour, icon pictures, front type and layout and so on. While in the `creatEvents()` method, it contains all button's action listener.

Encapsulation

```
mainmenu.java employee.java admintogin.java DiscountPrice.java financial.java
 1 package guitaekwondo.views;
 2
 3 import java.awt.BorderLayout;
 4
 5 public class financial extends JFrame {
 6
 7     private JPanel contentPane;
 8     private JTextField expenseTextField;
 9     private JTextField totalSalaryextField;
10     private JTextField incomeTextField;
11     private JButton returnButton;
12     private JButton salaryButton;
13     private JButton incomeButton;
14     private JButton profitButton;
15     private JTextField netTextField;
16     private double totalSalary;
17     private JLabel participantLabel;
18     private JTextField participantTextField
19
20     /**
21      * Launch the application.
22      */
23     public static void main(String[] args) {
24         EventQueue.invokeLater(new Runnable() {
25             public void run() {
26                 try {
27                     financial frame = new financial();
28                 } catch (Exception e) {
29                     e.printStackTrace();
30                 }
31             }
32         });
33     }
34 }
```

Encapsulation commonly hides data from outer classes while making methods accessible to outside classes. There is private access to keep the data out of the hands of the outside class. By using getter and setter method in public, we will able to modify and view variables.

Inheritance

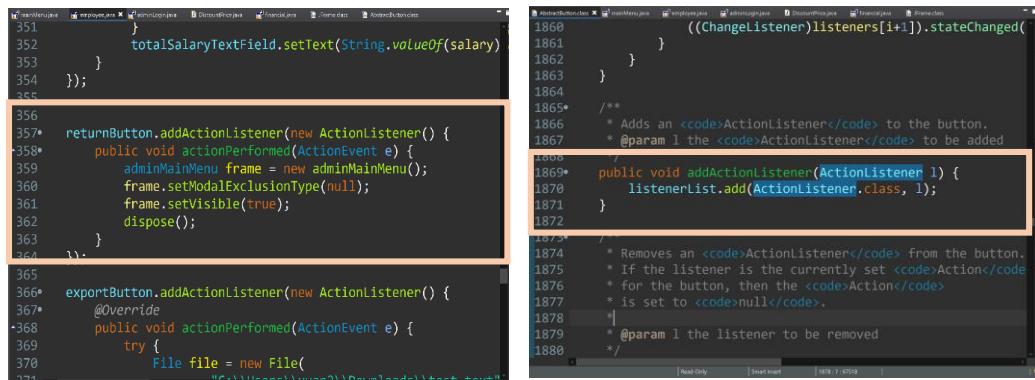


```
1 package guiTaekwondo.views;
2
3 import java.awt.BorderLayout;
4
5
6 public class adminLogin extends JFrame {
7
8     private JPanel contentPane;
9     private JTextField adminNameTextField;
10    private JPasswordField adminPasswordField;
11    private JButton returnButton;
12    private JButton adminSignInButton;
13
14    /**
15     * Launch the application.
16     */
17    public static void main(String[] args) {
18        EventQueue.invokeLater(new Runnable() {
19            public void run() {
20                try {
21                    adminLogin frame = new adminLogin();
22                    frame.setVisible(true);
23                } catch (Exception e) {
24                    e.printStackTrace();
25                }
26            }
27        });
28    }
29}
```

To construct a GUI(Graphical User Interface) in Eclipse, JFrame is used for inheritance for a an easier and visualise design. By using Jframe, it will be simple to create label, panel, text field, combo box and button with different functions.

Polymorphism (overloading and overriding)

a. Overloading

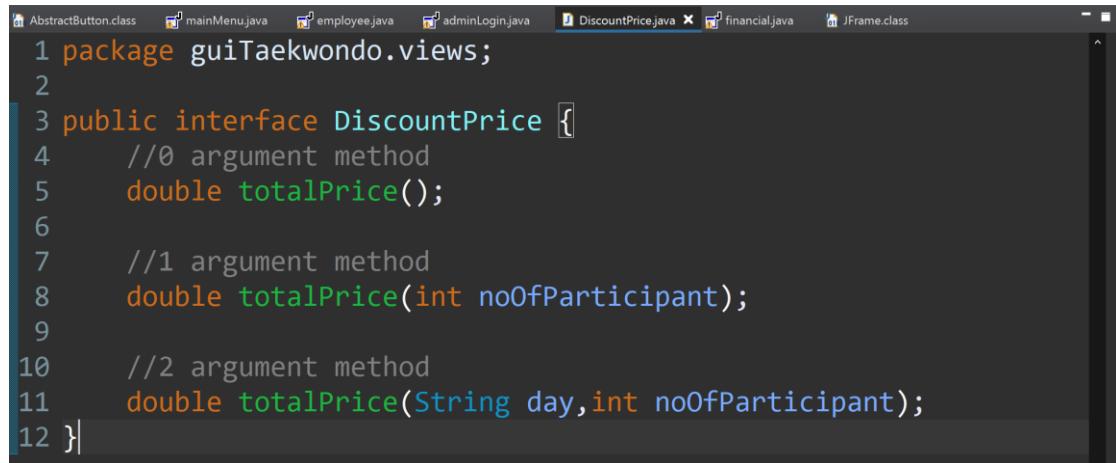


```
351     }
352     totalSalaryTextField.setText(String.valueOf(salary));
353 }
354 });
355
356 returnButton.addActionListener(new ActionListener() {
357     public void actionPerformed(ActionEvent e) {
358         adminMainMenu frame = new adminMainMenu();
359         frame.setModalExclusionType(null);
360         frame.setVisible(true);
361         dispose();
362     }
363 });
364
365 exportButton.addActionListener(new ActionListener() {
366     @Override
367     public void actionPerformed(ActionEvent e) {
368         try {
369             File file = new File(
370                 "C:\\Users\\Administrator\\Desktop\\Employee\\EmployeeList.txt");
371             ...
372         }
373     }
374 }
```

```
1860     ((ChangeListener)listeners[i+1]).stateChanged(
1861         e);
1862     }
1863 }
1864
1865 /**
1866  * Adds an <code>ActionListener</code> to the button.
1867  * @param l the <code>ActionListener</code> to be added
1868  */
1869 public void addActionListener(ActionListener l) {
1870     listenerList.add(ActionListener.class, l);
1871 }
1872
1873 /**
1874  * Removes an <code>ActionListener</code> from the button.
1875  * If the listener is the currently set <code>Action</code>
1876  * for the button, then the <code>Action</code>
1877  * is set to <code>null</code>.
1878  */
1879 public void removeActionListener(ActionListener l) {
1880     listenerList.remove(ActionListener.class, l);
1881 }
```

Method, addActionListener() is used many time in this project. Subclass employee overrides a method inherit from a superclass Abstract Button. The overriding method has the same name, number and type of parameters, and return type as the overriding method.

b. Overloading and Interface

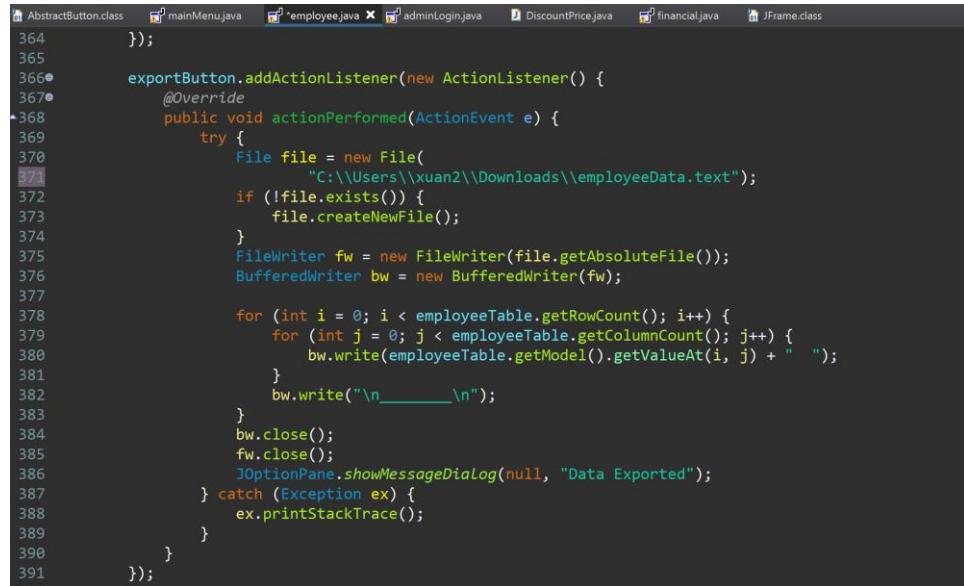


```
1 package guiTaekwondo.views;
2
3 public interface DiscountPrice {
4     //0 argument method
5     double totalPrice();
6
7     //1 argument method
8     double totalPrice(int noOfParticipant);
9
10    //2 argument method
11    double totalPrice(String day,int noOfParticipant);
12 }
```

There are three abstract methods in this discountPrice interface, each with a unique parameter and body. This will be used to implement in the other classes.

Overloading is used in the DiscountPrice interface. There are method with zero argument, totalPrice(), method with one argement, totalPrice(int noOfParticipants) and method with two arguments, totalPrice(String day,int noOfParticipant). These methods have a variety of argument kinds. Overloading is a technique for defining several methods with the same name but distinct signatures.

File I/O



```
364
365
366●    exportButton.addActionListener(new ActionListener() {
367●        @Override
368        public void actionPerformed(ActionEvent e) {
369            try {
370                File file = new File(
371                    "C:\\\\Users\\\\xuan2\\\\Downloads\\\\employeeData.text");
372                if (!file.exists()) {
373                    file.createNewFile();
374                }
375                FileWriter fw = new FileWriter(file.getAbsolutePath());
376                BufferedWriter bw = new BufferedWriter(fw);
377
378                for (int i = 0; i < employeeTable.getRowCount(); i++) {
379                    for (int j = 0; j < employeeTable.getColumnCount(); j++) {
380                        bw.write(employeeTable.getModel().getValueAt(i, j) + " ");
381                    }
382                    bw.write("\n_____ \n");
383                }
384                bw.close();
385                fw.close();
386                JOptionPane.showMessageDialog(null, "Data Exported");
387            } catch (Exception ex) {
388                ex.printStackTrace();
389            }
390        }
391    });
392 }
```

The file input/output is applied in this export button action listener to export data to a text file. File I/O is also used in participant registration class, advertisement class, user account class and participant details to export data to text file.

Exception Handling

```
printButton.addActionListener(new ActionListener() {
    public void actionPerformed(ActionEvent arg0) { // change e with other variable
        try {
            employeeTable.print();
        } catch (java.awt.print.PrinterException e) {
            System.err.format("No printer found", e.getMessage());
        }
    }
});
```

Exception management is handled via try and catch. The code is included within the try and catch block. If a problem occurs, it will throw an exception and the message from the catch block will be shown. In this print method, the program will pop out a message dialog of “No printer found”. If there is an exception occurs, else it will print out the data of the employee table.

5. Basketing Centre (Nurafiza Binti Abdul Rahshid 277839)

Constructor

```
56
570  /**
58   * Create the application.
59   */
600  public Finance() {
61      setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
62      setBounds(100, 100, 997, 495);
```

This is a Finance constructor without any arguments. All the codes for Finance will be in this constructor.

Encapsulation

```
1 package Assignment3;
2
30 import java.awt.EventQueue;□
4
50 public class Finance extends JFrame{
6
7
80     private JPanel contentPane;
90     private JTextField EmpQuantityTextField;
100    private JTextField EmpSalaryTextField;
110    private JTextField UtilityTextField;
120    private JTextField PrizeTextField;
130    private JTextField AdsTextField;
140    private JTextField FeeTextField;
150    private JTextField ParticipantTextField;
160    private JTextField TotalBudgetTextField;
170    private JTextField IncomeTextField;
180    private JTextField ProfitTextField;
190    private JTable table;
20
210 }
```

The data is hidden and it is outside of the classes. There is private access to keep data accessible only in this class.

Inheritance

```
2  
3* import java.awt.EventQueue;  
4  
5 public class Finance extends JFrame{  
6  
7  
8     private JPanel contentPane;  
9     private JTextField EmpQuantityTextField;  
10    private JTextField EmpSalaryTextField;
```

This show that Finance is extending JFrame. It shows that Finance class is inheriting from JFrame.

Polymorphism

a. Overloading

```
1 package Assignment3;  
2  
3 public interface Payment {  
4  
5     double totalPrice();  
6     double totalPrice(double disc);  
7     double totalPrice(String day, double disc);  
8 }  
9
```

This is the overloading of the method by the same method but with different parameter for each method.

b. Overriding

```
348  
349     }  
350  
351     @Override  
352     public double disc() {  
353         // TODO Auto-generated method stub  
354         return 0;  
355     }  
356
```

This is override which it call the disc() on Finance to return the the value 0 on the calculation.

Interface

```
1 package Assigment3;
2
3 public interface Discount {
4     double disc();
5 }
6
```

This is an interface of Discount without argument and is used on other class to implement discount interface.

FILE I/O

```
353     JButton btnNewButton_5 = new JButton("UPLOAD");
354     btnNewButton_5.addActionListener(new ActionListener() {
355         public void actionPerformed(ActionEvent e) {
356             try {
357                 File file= new File("C:\\\\Users\\\\USER\\\\Documents\\\\Eclipsea\\\\Assigment3\\\\src\\\\Assigment3\\\\participant.txt");
358
359                 if(!file.exists()) {
360                     file.createNewFile();
361                 }
362                 FileWriter fw = new FileWriter(file.getAbsoluteFile());
363                 BufferedWriter bw = new BufferedWriter(fw);
364
365                 for (int i=0; i<table.getRowCount();i++) {
366                     for(int j=0; j<table.getColumnCount();j++)
367                         bw.write(table.getModel().getValueAt(i, j)+"\\t");
368                 }
369                 bw.write("\\n");
370
371                 bw.close();
372                 fw.close();
373                 JOptionPane.showMessageDialog(null, "Data Exported");
374             }
375         }
376     });
377 }
```

On line 357, there is a file input/output here which is the participant .txt file. When the user clicks the upload button it will save all the information on the table to this participant .txt file

Exception Handling

```
290
291     JButton btnSaveButton = new JButton("Save Data");
292     btnSaveButton.addActionListener(new ActionListener() {
293         public void actionPerformed(ActionEvent e) {
294             try {
295                 File file= new File("C:\\\\Users\\\\USER\\\\Documents\\\\Eclipsea\\\\Assigment3\\\\src\\\\Assigment3\\\\finance.txt");
296                 if(!file.exists()) {
297                     file.createNewFile();
298                 }
299                 FileWriter fw = new FileWriter(file.getAbsoluteFile());
300                 BufferedWriter bw = new BufferedWriter(fw);
301
302                 for (int i=0; i<table.getRowCount();i++) {
303                     for(int j=0; j<table.getColumnCount();j++)
304                         bw.write(table.getModel().getValueAt(i, j)+"\\t");
305                 }
306                 bw.write("\\n");
307
308                 bw.close();
309                 fw.close();
310                 JOptionPane.showMessageDialog(null, "Data Exported");
311             }
312             catch(Exception ex) {
313                 ex.printStackTrace();
314             }
315         }
316     });
317 }
```

The exception handling is exception ex. The exception handling is through try and catch. If there is error within the try code it will throw an exception.