|  |  |
| --- | --- |
| **Project Case** |  |
| ISYS6197 | ISYS6197003  Business Application Development |
| **Computer Science** | **O232-ISYS6197-FT11-00** |
| ***Valid on*** *Odd Semester Year 2022/2023* | **Revision 00** |

1. Seluruh kelompok tidak diperkenankan untuk:

*The whole group is not allowed to:*

* + - Melihat sebagian atau seluruh proyek kelompok lain,

*Seeing a part or the whole project from another groups*

* + - Menyadur sebagian maupun seluruh proyek dari buku,

*Adapted a part or the whole project from the book*

* + - Mendownload sebagian maupun seluruh proyek dari internet,

*Downloading a part or the whole project from the internet,*

* + - Mengerjakan soal yang tidak sesuai dengan tema yang ada di soal proyek,

*Working with another theme which is not in accordance with the existing theme in the matter of the project,*

* + - Melakukan tindakan kecurangan lainnya,

*Committing other dishonest actions,*

* + - Secara sengaja maupun tidak sengaja melakukan segala tindakan kelalaian yang menyebabkan hasil karyanya berhasil dicontek oleh orang lain / kelompok lain.

*Accidentally or intentionally conduct any failure action that cause the results of the project was copied by someone else / other groups.*

1. Jika kelompok terbukti melakukan tindakan seperti yang dijelaskan butir 1 di atas, maka **nilai kelompok** yang melakukan kecurangan (menyontek maupun dicontek) akan di – **NOL** – kan.

*If the group is proved to the actions described in point 1 above, the score of the group which committed dishonest acts (cheating or being cheated) will be “Zero”.*

1. Perhatikan jadwal pengumpulan proyek, segala jenis pengumpulan proyek di luar jadwal tidak dilayani.

*Pay attention to the submission schedule for the project, all kinds of submission outside the project schedule will not be accepted.*

1. Bila Anda tidak membaca peraturan ini, maka Anda dianggap telah membaca dan menyetujuinya.

*If you have missed to read these regulations, so you are considered to have read and agreed on it.*

1. Persentase penilaiaan untuk matakuliah ini adalah sebagai berikut:

*Marking percentage for this subject is described as follows:*

|  |  |  |
| --- | --- | --- |
| **Tugas Mandiri**  *Assignment* | **Proyek**  *Project* | **UAP**  *Final Exam* |
| 40% | 60% | - |

1. Software yang digunakan pada matakuliah ini adalah sebagai berikut:

*Software will be used in this subject are described as follows:*

|  |
| --- |
| **Software**  *Software* |
| Eclipse 2020.6  Java 11  Java FX  MySQL Java Connection Library 8.0.24  XAMPP 8.0.7 |

1. Ekstensi file yang harus disertakan dalam pengumpulan tugas mandiri, proyek, dan uap untuk matakuliah ini adalah sebagai berikut:

*File extensions should be included in assignment, project, and final exam collection for this subject are described as follows:*

|  |  |  |
| --- | --- | --- |
| **Tugas Mandiri**  *Assignment* | **Proyek**  *Project* | **UAP**  *Final Exam* |
| JAVA, CLASS | JAVA, CLASS, SQL | - |

**Soal**

*Case*

**FTeam Market**

**FTeam Market** is a shop that allows people to buy game items. To manage all of items and transactions, its owner asked you to create an application for it. The program should be made using **Java Programming Language**, with **MySQL Database Engine**.

There are some requirements to build this application:

Diagram

Description automatically generated

Execute the provided create and insert query file on “**fteammarket\_db**” database! (“fteammarket\_db.sql”)

1. **Login Form**

This is the first form which will appear when the program is run. The **Login** **Form** is used by users to **log in**, so they can access the **Main** **Form**.

Graphical user interface, text, application

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Figure 1. Login Form

**Components**:

* **Text** for Title, Username, and Password.
* **TextField** for Username input.
* **PasswordField** for Password inputs.
* **Button** for Login and Register buttons.

**Description**:

* If the user clicks the **Login** button, then **validate**:
  + **Username** and **Password** **cannot be empty.**
  + **Username and Password** pairing must **exist in the database**.
* If the user has successfully signed in, display a **Notification** **Alert**.

A picture containing graphical user interface

Description automatically generated

Figure 2. Login Successful Notification

* + After the user closes the alert, the program will **validate** role (either ‘**user**’ or ‘**administrator**’). Lastly, the **Login** **Form** will be closed, and the **Main** **Form** will be displayed.
* If the user failed to log in, display an **Error Alert**.
* If the user clicks the **Register** button, the program will close the **Login** **Form**, and opens the **Registration** **Form**.

Graphical user interface

Description automatically generated with medium confidence

Figure 3. Login Failed Error

(**Additional** **note**: **every** **error** occurrence will be shown on an **Error Alert**).

1. **Registration Form**

The **Registration Form** is used by users to **Register**.

Graphical user interface

Description automatically generated

Figure 4. Registration Form

**Components**:

* **Text** for Title, User ID, Username, Password, Email, Phone Number, Age , and Gender.
* **TextField** for User ID (**read**-**only**), Username input. Email Input, And Phone Number Input
* **PasswordField** for Password input.
* **Spinner** for Age (Minimum Number (15), MaxNumber (70), Start Number (16))
* **RadioButton** for Gender (‘**Male**’ or ‘**Female**’) input.
* **Button** for Register and Login buttons.

**Description**:

* If the user clicks **Register** button, then **validate**:
  + **User ID is generated** when the Register Form is opened with **format**:

**USXXX**

Where **X**: digits obtained from the number on the largest user id + 1

Example: if the largest User Id is US009, then you need to generate a user id with a value of US010

* + **Username** must be between **5 - 20 characters**.
  + **Password** must be between **5 - 20 characters**.
  + **Password** mustbe **alphanumberic.**
  + **Email** email must consist of **@** **character**, **@ character** must not be in front and must end with **.com.**
  + **Phone Number** must be between **9 – 12 characters.**
  + **Age** range must be between 17 – 60.
  + **Gender** must be selected, either ‘**Male’** or ‘**Female**’.

Graphical user interface, text

Description automatically generated

Figure 5. Invalid Username Format Error

(**Additional** **note**: **every** **error** occurrence will be shown on an **Error Alert**).

* If the user successfully registers, **insert** a new **user** **to the database**. Program will display a **Notification Alert**. Lastly, the program will close the **Registration** **Form** and open the **Login** **Form**.
* If the user clicks the **Login** button, the program will close the **Registration** **Form**, and opens the **Login** **Form**.

Graphical user interface, text

Description automatically generated

Figure 6. Register Success Notification

1. **Main Form**

This is the main form for the program. In this form, the user can select menus from the menu bar, such as the main **Menu** (**Item Market**, **Cart Item**, **Transaction History, And Logout**), These menus are all available for the user role ‘u**ser**’. However, if the user role is ‘**administrator**’, the main **Menu** consists of **(Manage User, Manage Item, Transaction And Logout)**.

Graphical user interface, text

Description automatically generated

Figure 7. Main Form

**Components**:

* **‘user’** Role:
  + **Menu** for Menu
  + **MenuItem** for Item Market, Cart Item, Transaction History, and Logout item.
  + **Text** for welcoming user
* **‘administrator’** Role:
  + **Menu** for Menu
  + **MenuItem** for Manage User, Manage Item, Transaction , and Logout item.
  + **Text** for welcoming admin

**Description**:

* + If the user clicks the **Item Market** menu item, the program will open the **Item Market Form**.
  + If the user clicks the **Cart Item** menu item on the user menu, the program will open the **Cart Item Form**.
  + If the user clicks the **Transaction History** menu item on the user menu, the program will open the **Transaction History Form**.
  + If the user clicks the **Logout** menu item on the user menu, the program willclose the **Main Form**, and opens the **Login Form.**
  + If the user clicks the **Manage User** menu item on the admin menu, the program will open the **Manage Menu Form**
  + if the user clicks the **Manage Item** menu item on the admin menu, the program will open the **Manage Menu Form**
  + if the user clicks the Transaction menu item on the admin menu, the program will open the **Transaction Form**

Graphical user interface, text, application

Description automatically generated

*Figure 8. ‘admin’ role Menu items*

*Graphical user interface, text, application

Description automatically generated*

*Figure 9. ‘user’ role Menu items*

1. **Manage User Form (Admin)**

This form is for **managing all user accounts,** in this form, the user only can update or delete the user account.

Graphical user interface, application, table

Description automatically generated

Figure 10. Manage User Form

**Components**:

* **TableView** for User Tables.
* **Text** for User ID, Username, Password, Email, Phone Number, Age, and Gender.
* **TextField** for User ID (**read-only**), Username input (**read-only**). Email Input, And Phone Number Input
* **PasswordField** for Password input (**read-only**).
* **Spinner** for Age (Minimum Number (15), MaxNumber (70), Start Number (16))
* **RadioButton** for Gender (‘Male’ or ‘Female’) input.
* **Button** for Update user and Delete User

**Description**:

* **Update User**
* **Updating a User Account** requires the user to first select an account from the User Table, and input the **Email**, **Phone Number**, **Age**, and **Gender.**
* **Validate:**
* If a **user account is not selected**, show an **Error Alert**
* **Email** must consist of @ character, @ character must not be in front and must end with .com
* **Phone Number** must be between 9 – 12 characters
* **Age** range must be between 17 – 60
* **Gender** must be selected, either ‘Male’ or ‘Female’.
* **Update the user account** using the provided data.
* Finally, show an **Information Alert** to notify that the data was successfully updated.

Graphical user interface

Description automatically generated

Figure 11. User not picked Error

A picture containing graphical user interface

Description automatically generated

Figure 12. Update User Notification

Graphical user interface, table

Description automatically generated Figure 13. User Updated

* **Delete User**
* **Deleting a User** requires the user to **select a user account from the user table**
* **Validate:**
* If a **user account is not selected**, show an **Error Alert**
* **Remove the user** from database
* Finally, show a **Notification Alert** to notify that the data was successfully deleted

A picture containing graphical user interface

Description automatically generated

*Figure 14. User Deleted Notification*

Graphical user interface, application, table

Description automatically generated *Figure 15. User Deleted*

1. **Manage Item Form (Admin)**

This form is used to **manage all items for sale.** In this form, the user can click any item to see its detail, **insert a new item, update the item,** and **delete the item.**

Graphical user interface, application, table

Description automatically generated

*Figure 16. Manage Item Form*

**Components:**

* **TableView** for Item Tables.
* **Text** for Title, Item ID, Item Name, Item Description, Price, and Quantity.
* **TextField** for Item ID (**read-only**), Item Name Input, and Item Description Input.
* **Spinner** for Price (Minimum Number (0), MaxNumber (MAX\_INT), Start Number (0), amountToStepBy (1000)), and for Quantity (Minimum Number (0), MaxNumber (MAX\_INT) , Start Number(0)).
* **Button** for Insert item, Delete Item, Update Item, Clear Form.

**Description:**

* **Insert Item**
* **Validate:**
* **Item ID** is generated when the Item Form is opened with format:

**ITXXX**

Where **X**: digits obtained from the number on the largest Item id + 1

Example: if the largest Item Id is IT004, then you need to generate Item id with a value of IT005

* **Item Name** must be between **5 – 100 characters**.
* **Item Name** must consist of at least **2 words** containing **the game name** and **item name** then **separated by (:)**
* **Item Description** must be between **10 – 200 characters**.
* **Price** must be greater than 0!
* **Quantity** must be greater than 0!
* (**Additional** **note**: **every** **error** occurrence will be shown on an **Error Alert**).

Graphical user interface, text

Description automatically generated

Figure 17. Invalid Item Name Format Error

* If the user successfully enters a new item, **Insert** a new item **into the database**. The program will display an **Information Alert**. Finally, refresh the data the item table, so that the item data that was just inserted can appear in the items table**.**

Graphical user interface

Description automatically generated with medium confidence

Figure 18. Inserted Item Notification

Graphical user interface, application, table

Description automatically generated

Figure 19. New Item Inserted

* **Delete Item**
* **Deleting an Item** requires the user to **select a Item from the item table.**
* **Validate if** **item is not selected**, make sure **delete button** still disable.
* **Remove the item** from database.
* Finally, show a **Notification Alert** to notify that the data was successfully deleted.

Graphical user interface, application, table

Description automatically generated

Figure 20. User not picked Item (Delete Button disable)

A picture containing graphical user interface

Description automatically generated

Figure 21. Item Deleted Notification

Graphical user interface, application, table

Description automatically generated

Figure 22. Item Deleted

* **Update Item**
* **Updating item** requires the user to first select an item from the **Item Table**, and input the **Item Name, Item Description**, **Price**, **And Quantity.**
* **Validate:**
* If an **item is not selected**, make sure **update button** still **disable.**
* When the user selects the item, **fill in all the fields** with the data of the **selected item.**
* **Item Name** must be between **5 – 100 characters.**
* **Item Name** must consist of at **least 2 words** containing the **game name** and **item name** then **separated by (:)**
* **Item Description** must be between **10 – 200 characters.**
* **Price** must be greater **than 0!**
* **Quantity** must be greater **than 0!**
* **(Additional note: every error occurrence** will be shown on an **Error Alert).**

Graphical user interface, application, table

Description automatically generated

Figure 23. Admin not picked Item (Update Button disable)

Graphical user interface, application, table

Description automatically generated

Figure 24. fill in all the fields with the data of the selected item

Graphical user interface, text, application

Description automatically generated

Figure 25. Error Invalid Item Name Format

A picture containing graphical user interface

Description automatically generated

Figure 26. Item Updated Notification

Graphical user interface, application, table

Description automatically generated

Figure 27. Item Updated

* **Clear Form**
* **Empty all input fields.**

1. **Transaction Form (Admin)**

This form **displays all transactions** that are stored in the database. Admin can view every transaction that has occurred.

**Components:**

* **TableView** for transaction table

Graphical user interface, application, table

Description automatically generated

Figure 28. Transaction Form (Admin)

1. **Item market Form (User)**

This form **to add the items that the user wants to buy into the cart.** In this form, the user can click any item and add it to their cart

Graphical user interface, application, table, Excel

Description automatically generated

Figure 29. Item Market Form (User)

**Components:**

* **TableView** for item market table.
* **Text** for Item ID, Item Name, Item Description, Price, and Quantity.
* **TextField** for ItemID(**read-only**), Item Name(**read-only**), Item Description(**read-only**).
* **Spinner** for Price(**read-only**) and Quantity.
* **Button** Clear form and add to cart.

**Description:**

* **Add to cart**
* **Adding to Cart** requires the user to first **select an item from the item market Table.**
* **Validate:**
* If the user **did not select an item from the item market table**, make button **Add to cart** and **clear form** to be **disabled.**
* **Quantity input** by the user must be **more than** **0!**
* **Quantity input** by the user must be **less than total Quantity of item.**
* **Data items displayed in the table** are data items whose **quantity is more than 0.**

Graphical user interface, application, table, Excel

Description automatically generated

Figure 30. User not picked Item (Update Button and Clear Form Button Disabled)

Graphical user interface, text

Description automatically generated

Figure 31. Quantity 0 or less error

Graphical user interface, text

Description automatically generated

Figure 32. Error Quantity input more than total quantity of items

* **Add** the selected item into the user’s cart
  + - If the **same item existed in the cart**, **update its number of quantities** instead.

Graphical user interface

Description automatically generated with medium confidence

Figure 33. Added item to cart

* If the user successfully **enters an** **item to cart**, **Insert** a item **into the database**. The program will display an **Information Alert.**

Graphical user interface, text, application

Description automatically generated

Figure 34. Cart table before add item to cart

Graphical user interface, application, table, Excel

Description automatically generated

Figure 35. Cart table after added item (Subnautica : Markpiller Hull hate)

to cart with quantity 10

* **Clear Form: Empty all field in form.**

1. **Cart Item Form (User)**

This formis used **to make transactions for the items that ordered by user.** In this form user just need to click checkout for pay all the items he ordered.

Graphical user interface, application, table, Excel

Description automatically generated

Figure 36. Cart Item Form

**Components:**

* **TableView** for cart table
* **Button** for checkout Button and remove from cart button

**Description:**

* **Checkout**
* **Checkout** requires users to have items in their cart**.**
* **Validate:**
* If the user **doesn’t have any item in their cart**, make **checkout button** to be **disabled**
* If the **quantity of item** **to be purchased** **is smaller** than **the quantity of item ordered** by the user, show **Error Alert.**

Graphical user interface, text, application

Description automatically generated

*Figure 37. there is no item in the cart (check out button disable)*

Graphical user interface, text

Description automatically generated with medium confidence

*Figure 38. Error quantity of item to be purchased is smaller than the quantity of item ordered by the user*

* if the **transaction is successful**, **insert** the **transaction data into the database**. **Reduce the quantity of items** purchased by users, delete item from cart. Then program will display an **Information Alert**.

Graphical user interface, text

Description automatically generated

*Figure 39. Transaction Success Notification*

* **Remove From Cart**
* **Removing from Cart** requires the user to first select a item from the **Cart Table**
* **Validate:**
* If user **did not select an item from the cart table**, make button **remove from cart** to be **disabled**

Graphical user interface, application, table

Description automatically generated

*Figure 40. User not picked Item (Remove from Cart Button Disabled)*

Graphical user interface, application, table, Excel

Description automatically generated

*Figure 41. Before Remove Item from cart*

* Finally, show a **Notification Alert** to **notify** that the **data was successfully deleted.**

Graphical user interface

Description automatically generated

*Figure 42. Item Successful deleted from item cart*

Graphical user interface, text, application

Description automatically generated

*Figure 43. After Remove Item from Cart*

1. **Transaction History Form (User)**

This form **displays all transactions** that are stored in the database. In this form, the user can view every transaction that they have done in the past**.**

**Components:**

* **TableView** for transaction table

Graphical user interface, table

Description automatically generated

Figure 44. Transaction Form (User: haloo1)

**Here are the rules that you must follow to create your project:**

1. Use appropriate software for this subject based on **Sistem Praktikum** that can be downloaded from Binusmaya.
2. Collect appropriate files for this subject based on **Sistem Praktikum** that can be downloaded from Binusmaya.
3. Include the other files that can support your project, such as:
   * All files in your project
   * Other files (image, audio, video, etc.) used in your project

**If there is something you don’t understand, feel free to ask your Assistant**