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| --- | --- |
| **Project Case** |  |
| COMP6114 | COMP6114001  Pattern Software Design |
| **Computer Science** | **O242-COMP6114-RA01-00** |
| ***Valid on*** *Even Semester Year 2024/2025* | **Revision 00** |

1. Kelompok tidak diperkenankan untuk:

*Members of the group are prohibited from:*

* + - Melihat sebagian atau seluruh jawaban kelompok lain,

*Seeing a part or the whole answer from other groups,*

* + - Menyadur sebagian atau seluruh jawaban dari buku, catatan, video, dan jenis referensi lainnya,

*Retell a part or the whole answer from books, notes, videos, and other references,*

* + - Menyadur sebagian atau seluruh jawaban dari internet,

*Retell a part or the whole answer from the internet,*

* + - Mengumpulkan jawaban yang tidak sesuai dengan tema soal,

*Submitting an answer with a different theme from the given case,*

* + - Melakukan tindakan yang menyebabkan jawaban dicontek oleh orang lain atau kelompok lain, baik disengaja maupun tidak disengaja,

*Doing action that could result the answer being copied by someone or other groups, intentionally or unintentionally,*

* + - Melakukan tindakan kecurangan lainnya.

*Committing other dishonest actions.*

1. Jika kelompok terbukti melakukan tindakan seperti yang dicantumkan pada butir ke-1, maka nilai mahasiswa dan/atau kelompok yang melakukan kecurangan, baik menyontek atau dicontek, akan dinolkan sesuai dengan peraturan yang berlaku.

*If it has been proven that a group has committed dishonest actions outlined in point 1 above, the whole groups related to the incident, regardless of which one copies or has their answer copied, will be issued a score of zero according to the regulation.*

1. Jawaban yang dapat diterima dan dinilai adalah jawaban yang dikumpulkan sebelum batas waktu yang telah ditentukan.

*The answer must be submitted before the designated deadline to be accepted and graded,*

1. Jawaban akan dinilai berdasarkan teknik atau metode yang diajarkan pada kelas praktikum dengan menggunakan software yang sudah ditentukan.

*The scoring will be based on the materials taught during the practicum classes using the designated software. Using different software than requested may result in your answer not being graded.*

1. Jika Anda tidak membaca peraturan ini, maka Anda dianggap sudah membaca dan menyetujuinya.

*By taking this exam, you agree to these regulations, regardless of whether you have read it or not.*

1. Persentase penilaian untuk matakuliah ini adalah sebagai berikut:

*The score will be distributed as follows:*

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

1. Perangkat lunak yang digunakan pada matakuliah ini adalah sebagai berikut:

*This course uses the following software:*

|  |
| --- |
| **Software**  *Software* |
| Visual Studio 2022  Visual Studio 2022 - SAP Crystal Reports  Web Browser |

1. Ekstensi file yang harus dikumpulkan untuk matakuliah ini adalah sebagai berikut:

*Your answers must be in the following file extensions:*

|  |  |  |
| --- | --- | --- |
| **Tugas Mandiri**  *Assignment* | **Proyek**  *Project* | **UAP**  *Final Exam* |
| ASP.NET Folder Project (SLN, CS, ASPX, ASPX.CS, CONFIG, XML, DLL, PDB, RPT, XSS, XSD, SQL, MDF, LDF, EDMX, Asset Files) | ASP.NET Folder Project (SLN, CS, ASPX, ASPX.CS, CONFIG, XML, DLL, PDB, RPT, XSS, XSD, SQL, MDF, LDF, EDMX, Asset Files) | - |

1. File yang harus dikumpulkan adalah keseluruhan jawaban beserta dengan aset yang digunakan (gambar, audio, video, dll) dan dokumentasi proyek yang berisikan link referensi aset dan penjelasan mengenai aplikasi yang dibuat (terlampir bersama dengan soal).

*Include other files that can support your project, such as: all files in your project, other files (image, audio, video, etc.) used in your project, \*.doc file (documentation of your project) that contains all pages in your project, reference links of additional files (image, audio, video, etc.) used in your project, the description about how to use your application, etc.*

## Soal

*Case*

**RAiso**

**RAiso** is a renowned online store that specializes in selling stationery products. With its ever-growing popularity, the management of transaction data has become a challenging task. To address this issue, you have been approached to assist **RAiso** in effectively managing their database transactions. By implementing robust systems and processes, we aim to streamline the transactional data flow, ensuring smooth and efficient operations.

As a web developer, you are asked to create a website using **ASP.NET** for this online shop. You are also required to use **Domain Driven Design** method to develop the website. Please note that using **web service** is **optional** in this project. The **required** layers are:

* **View**

View layer is responsible for showing information to the user and interpreting the user's commands. This layer is the home for all user interfaces in the project.

* **Controller**

This layer is responsible to validate all input from the view layer. It also responsible for delegating requests from the user to the lower layer for further processing.

* **Handler**

This layer is responsible to handle all business logic required in the application. It will delegates the task to query from the database, including select, insert, update and delete, to the repository layer. Please notes that there can be a single handler that accesses multiple repository.

* **Repository**

Repository layer is responsible for giving access to the database and model layer via its public interfaces to acquiring references to preexisting domain objects. It provides methods to manipulate the object which will encapsulate the actual manipulation operation of data in the database. Repository also provides methods that select objects based on some criteria and return fully instantiated objects or collection of objects whose attribute meets those criteria.

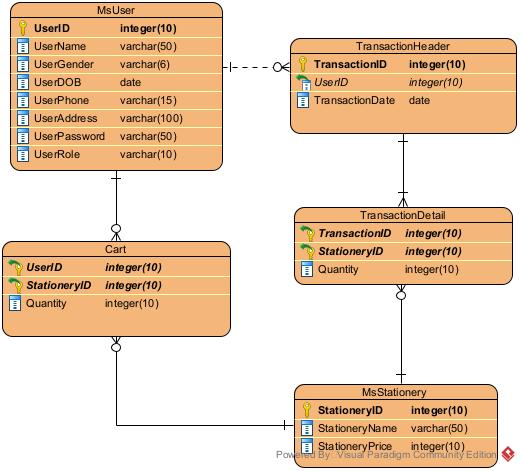
* **Factory**

You need to encapsulate all complex object creation in this layer. For example, when the client needs to create an aggregate object (an object that holds a reference to another object), the object factory must provide an interface for creating these objects. It is important to note that an object returned by the factory must in a consistent state.

* **Model**

Model layer is responsible for representing concepts in the business or information about the business situation. The model layer is handled using entity framework tool.

The following is the **Entity Relationship Diagram** for **RAiso’s Database:**

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**Figure 1. Entity Relationship Diagram of RAiso’s Database**

There are three types of user's roles in this website: **Admin**, **Customer**, and **Guest** (**non-logged-in user**). Below are the minimum pages you need to create for each role:

* + - **Admin**
* View Stationeries
* Insert Stationery
* Update Stationery
* Delete Stationery
* Update Profile
* View Transactions Report
  + - **Customer**
* View Stationeries
* Order Stationeries
* View Carts
* Update Carts
* Delete Carts
* Update Profile
* View Transactions History
* View Transaction Detail
  + - **Guest**
* Login
* Register
* View Stationeries

The descriptions for each page are as follows

1. **Login**

This page is the landing page of the website where the user will attempt to log in to the website. This page is only accessible to guests.

The following table shows the existing fields in the login form and validations for each field:

|  |  |
| --- | --- |
| **Field** | **Information** |
| **Name** | Must be filled and appropriate with the data in the database |
| **Password** | Must be filled and appropriate with the data in the database |

If the user entered an **incorrect** username or password, then an **error message** will be shown corresponding to the validation triggering it. The login page will also have a **remember me** checkbox. The remember mecheckbox will save your login information by implementing a **cookie** which also has an **expired time** if a user had checked it so that the next time the user attempts another login, it will log the user in automatically.

1. **Register**This page allows guests to register themselves as RAiso customer. Validate this page is only accessible to guests. Display an error message if the user inputs invalid personal data. The following table shows the existing fields on this page and the validation for each field:

|  |  |
| --- | --- |
| **Field** | **Information** |
| **Name** | Must be filled, between 5 and 50 characters, and unique among the user’s name |
| **DOB** | Must be filled must be at least 1 year age |
| **Gender** | Must be selected |
| **Address** | Must be filled |
| **Password** | Must be filled and alphanumeric |
| **Phone** | Must be filled |

1. **Navigation Bar**Provide a navigation bar to make it easier for user to navigate between pages:

**• If no user is logged-in:**

**• Home: Redirect user to the homepage**

**• Login: Redirect user to the login page**

**• Register: Redirect user to the register page**

**• If the current user is a customer:**

**• Home: Redirect user to the homepage**

**• Cart: Redirect user to the carts page**

**• Transaction: Redirect user to the transactions page**

**• Update Profile: Redirect user to update profile page**

**• Logout: Logs out the user from the website and destroys all cookie variables**

**• If the current user is an admin:**

**• Home: Redirect user to the homepage**

**• Transaction: Redirect user to transaction report page**

**• Update Profile: Redirect user to update profile page**

**• Logout: Logs out the user from the website and destroys all cookie variables**

1. **Home**This page allows user to see all **RAiso’s** stationeries. This page allows user to **redirect into Stationery’s Detail Page** if user click the **card**. This page allows admin to **insert, update and delete** the Stationery. In this page, there is an **Insert Stationery button**. If admin click Insert Stationery button, then it will redirect them to Insert Stationery page.

Each stationery in the lists have ‘**Update’** and ‘**Delete’** buttons:

* If Admin click **Delete** button, **delete** selected Stationery.
* If Admin click **Update** button, it will redirect them to **Update Stationery page** and the selected Stationery ID will be passed using the URL’s query string parameter.

1. **Stationery Detail**This page is accessible for **all users**. If user click the **Stationery card** in homepage, redirect user to this **details** page. This page displays the stationery name, stationery price. There is also a “**Add to Cart**” button. Validate the button to only appear if the user’s login as **Customer.** Customer could fill the **quantity** number before adding the item to cart.

The following table shows existing fields in the page and the validation for each field:

|  |  |
| --- | --- |
| **Field** | **Information** |
| **Quantity** | Must be filled and must more than 0 |

1. **Insert Stationery**

This page is only accessible for **admin.** This page allows an **admin** to insert **a new stationery** into the database, this page can be access when **admin** clicks **Insert Stationery** button in **Home** **Page**.Display **an** **error message** if the **admin** inputted invaliddata. When admin has inputted all of the fields correctly and pressedthe **Insert Button**, the inputted stationery information will be **added** and **saved** into the database. The following table shows existing fields on this page and the validation for each field:

|  |  |
| --- | --- |
| **Field** | **Information** |
| **Name** | Must be filled and between 3 – 50 characters |
| **Price** | Must be filled, numeric, and greater or equal to 2000 |

1. **Update Stationery**This page is only accessible for **admin.** This page allows an admin to **update** **an existing** stationery in the database. The administrator will be redirected to this page when they clicked the **Update Button** provided in the **Home Page**. All the to-be-updated stationery’s current data will be shown in this page and the administrator can **change** those data before submitting it again by pressing the Update Button. The stationery’s data will be fetched from the database by using the stationery’s ID provided from the URL’s query string parameter. When the admin has inputted all the fields correctly and pressed the Update Button, the stationery’s information in the database will be **updated**. Display **an error message** if the admin inputted invaliddata.

The following table shows existing fields in the page and the validation for each field:

|  |  |
| --- | --- |
| **Field** | **Information** |
| **Name** | Must be filled and between 3 – 50 characters |
| **Price** | Must be filled, numeric, and greater or equal to 2000 |

1. **Cart Page**This page is accessible only for **customers**. The customer will be redirected to this page when they clicked the Cart Button provided at the Navigation Bar. This page displays all stationeries that have been added into customer’s shopping cart. Display cart information such as stationery’s **name**, **stationery’s price** and **stationery’s** **quantity**. There are three buttons in this page, **Update** button for each stationery on cart, **Remove** button for each stationery on cart and **Checkout** button. If **customers** click **Update** button, then **redirect** customer to **Update Cart page**, if **customers** click **Remove** button, then **remove selected stationery** from the **cart**, and if **customers** click **Checkout** button, then **all shopping cart** **data** will be **deleted** and **insert** current transaction data into customer’s **transaction history**, then redirect user to home page.
2. **Update Cart**This page is accessible only for **customers**. Customers can access it by clicking the "**Update Cart**" button in the Cart page. On this page, will be **shown stationery’s name, stationery’s price,** and **a textfield** for user to update the **quantity** of **stationery** that they want to buy.The following table shows existing fields in the page and the validation for each field:

|  |  |
| --- | --- |
| **Field** | **Information** |
| **Quantity** | Must be filled and must more than 0 |

1. **Transaction History**This page is only accessible for **customers** to show **customer’s** transaction history. The information of transaction that must be shown are **transaction id, transaction date, customer’s name, and transaction detail button to redirect user to Transaction Detail page.**
2. **Transaction Detail**This page is only accessible for **customers** to show **customer’s** transaction details. The information of transaction that must be shown are **stationery’s name, stationery’s price, and quantity bought.**
3. **Transaction Report**This page is accessible only for the **admin**. The administrator will be redirected to this page when they clicked the Transactions Button provided at the Navigation Bar. This page will display the report transactions data using **Crystal Report**. The report will have to show the header transaction information such as **transaction id**, **user id**, **transaction date** and **Grand Total value**, also the details such as **transaction id, stationery name, quantity, stationery price,** and **Sub Total value**.
4. **Update Profile**

This page allows the user to **change** their profile information. The user will be redirected to this page when they clicked the Update Profile Button provided at Navigation Bar. Display an error message if the user inputted invalid data. All of the to-be-updated profile's current data will be shown on this page and the user can change those data before submitting it again by pressing the Update Button. When the user has inputted all of the fields correctly and pressed the Update Button, the user’s information in the database will be **updated**.

The following table shows existing fields in the page and the validation for each field:

|  |  |
| --- | --- |
| **Field** | **Information** |
| **Name** | Must be filled, between 5 and 50 characters, and unique among the user’s name |
| **DOB** | Must be filled must be at least 1 year age |
| **Gender** | Must be selected |
| **Address** | Must be filled |
| **Password** | Must be filled and alphanumeric |
| **Phone** | Must be filled |