


<b>Project Case</b>	
COMP6115   COMP6115001 Object Oriented Analysis & Design	
<b>Computer Science</b>	<b>O242-COMP6115-CL01-00</b>
<i>Valid on Odd Semester Year 2023/2024</i>	<b>Revision 00</b>

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.*

2. 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.*

3. 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,*

4. 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.*

5. 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.*

6. Persentase penilaian untuk matakuliah ini adalah sebagai berikut:

*The score will be distributed as follows:*

<b>Tugas Mandiri</b> <i>Assignment</i>	<b>Proyek</b> <i>Project</i>	<b>UAP</b> <i>Final Exam</i>
40%	60%	-

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

*This course uses the following software:*

<b>Software</b> <i>Software</i>
Eclipse 2020.6 R Java 11.0.18 MySQL Java Connection Library 8.0.24 Visual Paradigm Community Edition 17.1 XAMPP 8.0.7

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

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

<b>Tugas Mandiri</b> <i>Assignment</i>	<b>Proyek</b> <i>Project</i>	<b>UAP</b> <i>Final Exam</i>
VPP, Image Files	JAVA, CLASS, SQL	-

9. 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

**Internet CLafes**

**Internet CLafes** is a technology-driven business that specializes in renting out high-specification computers to loyal customers. Recognizing the demands of the modern era, the Internet cafe has made a strategic decision to develop an online booking program. This program enables customers to conveniently make reservations without the need to physically visit the store. By implementing this system, the aim is to enhance the overall customer experience by providing a seamless and hassle-free process for renting and utilizing the desired PCs. Ultimately, this initiative seeks to minimize any potential inconveniences and ensure that customers can effortlessly access their reserved computers upon arrival. Below is **the business flow** that is **required** to be covered by the system.

- **Register Account**

Before being able to use the application, users must first register on the Register page. When a user **registers an account**, set the role as "**Customer**" as the **default role**.

Variable / Field	Validation / Action
UserID	- This User ID will be generated by the system. You can use auto-increment in MySQL.
UserName	- Cannot be empty. - Must be unique. - Minimal 7 character long.
Password	- Minimal 6 character long. - Contains alpha numeric character. - Cannot be empty.
Confirm Password	- Cannot be empty. - Confirm password must same with Password.
UserAge	- Must be between 13 – 65 (inclusive).

- **Login**

When user logging into the application, the user must fill in their credential on the **login page**. User must fill their **UserName** and **Password**.

Variable / Field	Validation / Action
UserName	<ul style="list-style-type: none"> <li>- Must be filled.</li> <li>- UserName must exist in database.</li> </ul>
Password	<ul style="list-style-type: none"> <li>- Must be filled.</li> <li>- Password must match with the username in database.</li> </ul>

- **View All PC**

**Every user** on Internet CLafe can **view all PC**. Their can see it right way when logging into the app. This use case will show all PC on Internet CLafe including their PC ID and its condition that are between **Usable**, **Maintenance**, or **Broken**.

- **View Customer Transaction History**

Users who have the role of **Customer** on Internet CLafe can **view their transaction history**. They can see the history of PC that they have booked before. You can make it on TableView.

- **Book PC**

Users who have the role of **Customer** on Internet CLafe can **book a PC** in future date. They must fill in a book form.

Variable / Field	Validation / Action
BookID	<ul style="list-style-type: none"> <li>- This BookID will be generated by the system. You can use auto-increment in MySQL.</li> </ul>
BookedDate	<ul style="list-style-type: none"> <li>- Must be chosen.</li> </ul>
PC ID	<ul style="list-style-type: none"> <li>- Must be chosen.</li> <li>- Make sure PC is available to be book.</li> </ul>

- **Make Report**

Users who have the role of **Customer** or **Operator** can make a report for PC if the PC has any problem or user has any request for the PC.

Variable / Field	Validation / Action
PC ID	<ul style="list-style-type: none"> <li>- Must be chosen / filled.</li> <li>- Must be exists in database.</li> </ul>
ReportNote	<ul style="list-style-type: none"> <li>- Must be filled.</li> </ul>

- **View Technician Job**

Users who have the role of **Computer Technician** can **view technician job** that have assigned by Admin. **Computer Technician** can see their **PC ID** and **Status**.

- **Complete Job**

Users who have the role of **Computer Technician** can **complete technician job** that have status **UnComplete**. **Computer Technician** must choose which PC their want to complete.

- **View PC Booked Data**

Users who have the role of **Operator** can **view PC booked data**. They can also **Cancel Book** or **Finish Book** to the PC that have been book by User before.

- **Cancel Book**

Users who have the role of **Operator** can **cancel bookings** that have been booked before passed on the chosen date.

Variable / Field	Validation / Action
Date	<ul style="list-style-type: none"> <li>- Must be chosen.</li> </ul>

- **Finish Book**

Users who have the role of **Operator** can also **finish bookings** that have been booked on the chosen date.

Variable / Field	Validation / Action
Date	<ul style="list-style-type: none"> <li>- Must be chosen.</li> </ul>

- **Assign User to Another PC**

Users who have the role of **Operator** can also **assign user to another PC**. They must choose booking data that they want to change PC.

Variable / Field	Validation / Action
PC ID	<ul style="list-style-type: none"> <li>- Must be filled.</li> <li>- On that day PC must not yet booked.</li> </ul>

### • View All Staff - Change Role

**Admin** can **view all staff** and change **user role** to adjust with User Job. For **users** with **the use role Admin, Operator, Computer Technician** are considered as **staff**, while those with the role of Customer remain as customers.

Variable	Validation
UserRole	<ul style="list-style-type: none"> <li>- Must be either “Admin”, “Customer”, “Operator”, or “Computer Technician”</li> <li>- Staff must be chosen.</li> </ul>

### • PC Management

**The admin** is responsible for managing PC data. **They can add new PC, update the condition of PC, and delete PC** by accessing the **View All PC** sections and **View PC Detail**. These sections are accessible to all users, allowing them to view information about all available PCs and access detailed information about individual PCs.

Variable	Validation
PC_ID	<ul style="list-style-type: none"> <li>- PC must be choosen. (While delete PC &amp; Update PC)</li> <li>- Must be unique. (While add PC)</li> <li>- Cannot be empty (While add PC)</li> </ul>
PC_Condition (update)	<ul style="list-style-type: none"> <li>- Must be either “Usable”, “Maintenance” or “Broken”.</li> </ul>

### • Job Management

**Admin** can **Add New Job** to **Computer Technician** to fix PC or updating PC that has been reported or found in unusable condition, and also **Admin** can **Update Technician Job Status**. To do all these things **Admin** can **View All Job Data**.

Variable	Validation
JobID	<ul style="list-style-type: none"> <li>- This JobID will be generated by the system. You can use auto-increment in MySQL.</li> </ul>
PC_ID	<ul style="list-style-type: none"> <li>- Cannot be empty.</li> <li>- Must exists on database.</li> </ul>

UserID	- User Role must be “Technician”.
Job Status (Update job status)	- Must be either “Complete” or “UnComplete”.

- **Transaction History**

**Customer** can **View Their Transaction History** by viewing **Transaction Detail** and **Admin** can **View All Transaction History** by viewing **Transaction Header** and **TransactionDetail**. One **TransactionHeader** can consist of many **TransactionDetail**. **UserID** in TransactionHeader is a Staff that do finish Book. **UserID** in TransactionDetail is Customer who book the PC.

- **View All Report**

**Admin** can view all PCs reported by **customers** or **operator**.

\*\*\*

To help you design the program, Owner has already hired Mr. Charlie, a **System Analyst**, to provide you with the design of the program based on the requirement and the business flow above. You can open “**diagram.vpp**” to view the diagram that was designed by Mr. Charlie. As a programmer, Owner wants you to develop the application with the following requirement:

- The application must be built using Java-based Programming with **MVC (Model View Controller)** architecture for a better development process.

- **Model**

The model layer is responsible for **representing concepts** in the business or information about the business situation. Besides that, the model layer is also responsible for **giving access to the database** via its public interfaces to acquiring and manipulating references to preexisting domain objects.

- **View**

View layer, or Presentation 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 for validating all input from the view layer and **all business logics** are implemented in the controller layer. It is also responsible for **delegating requests** from the user to the lower layer for further processing.

- Ensure that **you didn't use regex, Java FXML, JavaFX Scene Builder, or any library used outside the class materials** in your project, or **it will affect your score**.
- The database must be using **MySQL**. You can freely use **auto-increment** to generate **ID**.
- The application must have an **authenticated user based on roles**.
- The application must **minimize human error with great user experiences**.
- The application **must be made based on the analysis diagram** that was provided by Mrs. Caroline, but you may add additional components to the system based on your assumption.
- Documentation for the application:
  - The guide for using the application in the form of **docx (External)**.
  - Explanation for your code in the form of **comment (Internal)**.
  - Any additional assumption that you make to develop the program.

**Please ask your teaching assistant if there are any related questions.**