A logo of a planet

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**GROUP ASSIGNMENT**

**TECHNOLOGY PARK MALAYSIA**

**AAPP013-4-2-OOP-L-3**

**UCDF2304ICT(SE) / UCDF2304ICT / UCDF2304ICT(DI) / UCDF2304ICT(ITR)**

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**HAND OUT DATE: 4 October 2024**

**HAND IN DATE: 18 December 2024**

**WEIGHTAGE: 100%**

**INSTRUCTIONS TO CANDIDATES:**

1. Submit your assignment online in Moodle Folder unless advised otherwise
2. Late submission will be awarded zero (0) unless Extenuating Circumstances (EC) are upheld
3. Cases of plagiarism will be penalized
4. You must obtain at least 50% in each component to pass this module

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# 1.0 Introduction

The APU Psychology Consultation Management System is a tailored software application developed to streamline the psychology consultation processes at Asia Pacific University of Innovation & Technology (APU), serving as a dedicated platform for both students and psychology lecturers to simplify and optimize tasks such as scheduling consultations, managing appointments, and exchanging feedback. Recognizing that college students are a critical talent pool and future workforce, the system addresses the growing concern over students' psychological sub-health and the adverse effects of external pressures such as academic, work, and life stress which have led to varying degrees of mental health challenges, garnering increasing attention from all stakeholders (Psychological Consultation System Based on Intelligent Optimization Algorithm, 2022)

Built with a focus on user-centric design and efficiency, the system offers key functionalities, including user registration, appointment booking and rescheduling, feedback provision, and time slot management. Leveraging the object-oriented programming (OOP) paradigm, the solution ensures a structured and maintainable codebase. Additionally, it utilizes text files for persistent data storage, adhering to the project requirements and ensuring seamless accessibility of user and appointment information.

The system is designed to cater specifically to the needs of its primary users—students and psychology lecturers—by providing features that enhance their experience and simplify the consultation management process. For students, the system offers an intuitive interface where they can register an account and securely log in to access a range of functionalities. They can view a list of available psychology lecturers, along with their consultation slots, and book appointments with ease. The system also allows students to manage their consultations by viewing upcoming and past appointments, cancelling or rescheduling sessions, and providing feedback or ratings after each consultation. These features empower students to efficiently organize their schedules and make informed choices regarding their consultations.

For lecturers, the system provides tools to streamline their consultation schedules and interactions with students. Lecturers can set up and manage their availability by defining consultation slots, ensuring that students can only book appointments during their specified times. They can also view and keep track of their upcoming and past consultations, allowing them to prepare effectively. In cases where students request changes to their appointments, lecturers can approve or reject these rescheduling requests directly within the system. Additionally, after each session, lecturers can provide personalized feedback to students, fostering meaningful communication and collaboration.

Overall, the APU Psychology Consultation Management System not only simplifies the operational aspects of scheduling and managing consultations but also fosters a more organized and user-friendly environment. By leveraging object-oriented principles, the system ensures scalability and maintainability, making it a reliable and effective solution for the psychology department at APU.

# 2.0 Setup Guide

A screenshot of a computer

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After downloading the file, move the “OOPAssignment.zip” to the NetBeans directory.

A screenshot of a computer

Description automatically generated

Extract the file in the same directory.

A screenshot of a computer

Description automatically generated

Open Apache NetBeans IDE.

A screenshot of a computer program

Description automatically generated

Select “Open Project”.

A screenshot of a computer

Description automatically generated

Navigate to the appropriate directory, locate and select the file, and then proceed to open the project to display the code.

# 3.0 GUI Design, Input & Output

### Starting Screen

**A login screen with a blue sign in and a blue sign in with white text

Description automatically generated**

The image above displays the Login screen of the APU Psychology Consultation Management System, which acts as the main interface for user authentication and account creation. It includes two text fields for users to enter their TP Number and Password.

1. **Login**: Enables existing users to access the system after verifying their credentials.
2. **Register**: Facilitates new users in creating an account within the system.

### Registration Screen

A sign up and sign up form

Description automatically generated

A sign up and sign up form

Description automatically generated

A sign up and sign up form

Description automatically generated

This image illustrates the Registration screen of the system, designed for new users to create an account. Users are required to input their Name, TP Number, Password, and select their role (lecturer or student). Once the details are entered, they can proceed to click the “Sign Up” button to create an account which will redirect them to the Login page. Alternatively, if the user already has an account, the “Login” button will navigate them back to the Login screen.

## 3.1 Student Functionalities

A login screen with a logo and a sign in

Description automatically generated

A computer screen shot of a login box

Description automatically generated

A test student account will be utilized to showcase the functionalities available to consultants.

An example used is as follows:

* TP Number: TP074762
* Password: hello123

### Available Appointments

A screenshot of a computer

Description automatically generated

After logging in, students will be brought to a new page called "Consultations" where they will be able to see a list of specific consultants' free slots.

### Book Consultation



To book a consultation, student can find the available slots under “Consultations” tab.

A screenshot of a computer

Description automatically generated

If student has not selected an appointment to book, it will show the student with a pop-up screen saying they should select first before booking.

 After selecting, the blue highlight indicates that the consultation slot has been selected.

A blue rectangular sign with black text

Description automatically generated

To book the appointment, student has to click on the “Book Appointment” button which is located at the bottom of the screen.

A screen shot of a computer screen

Description automatically generated

A pop-up window will show that the system has already registered that consultation to booked, reassuring the student the booking has been made.

A screenshot of a computer

Description automatically generated

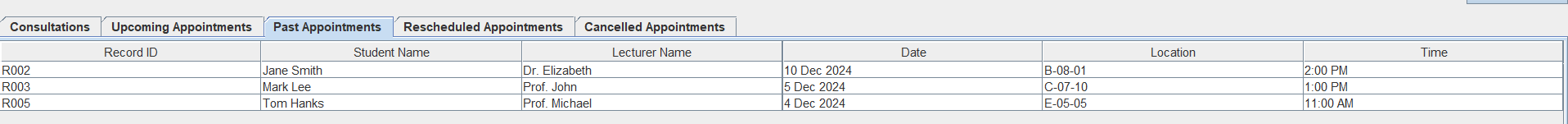
Finally, the booked consultation will be shown in “Upcoming Appointments”.

### Buttons for Booked Consultations and Past Appointments



At the top of the table, displayed in tab form, there are two buttons labelled as “Past Appointments” and “Booked Consultations”.

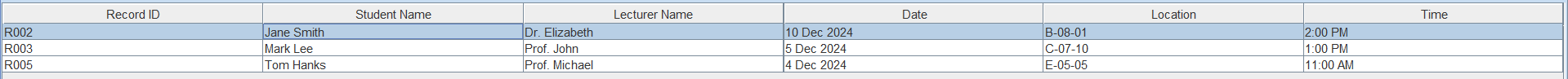
### View Past Appointments



Students can access their past appointments by clicking the "Past Appointments" button.

### Give Feedback



A blue rectangle with black text

Description automatically generated

In the “Past Appointment” tab, the student can select an appointment to give feedback on by simply clicking the "Submit Feedback" button to provide feedback to the consultant.

A screenshot of a computer

Description automatically generated

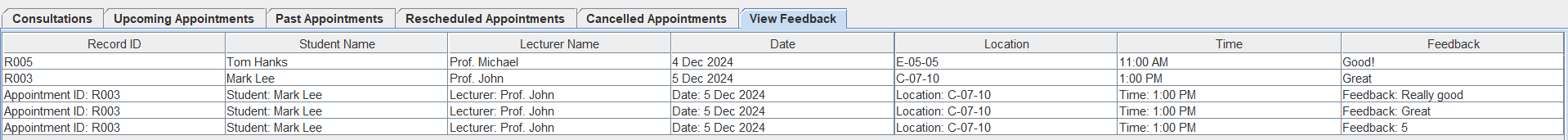
After clicking the “Submit Feedback” button, a popup will show up where the student can write comments in the text box section. After the student is done, they can click the “OK” button to submit the feedback.

A screenshot of a computer error

Description automatically generated

There will be a popup message displaying that the feedback has been submitted after clicking the “OK” button.

### View Feedback



After student click on the “View Feedback” tab, student can view the feedback given from the consultant that they had a session with.

### Refresh

A blue rectangle with black text

Description automatically generated

Afterr clicking the “Refresh” button, it will show the updated data in the table.

A screenshot of a computer

Description automatically generated

The pop-up will tell student that the page has already been updated and is able to view the latest data.

A screenshot of a computer

Description automatically generated

The feedback will be shown after clicking “OK”.

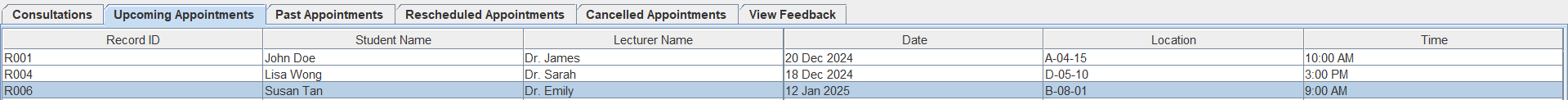
### View Booked Consultation

A screenshot of a computer

Description automatically generated

Under the “Upcoming Appointments” tab, it will show the latest consultation booked at the last row.

### Reschedule Consultation

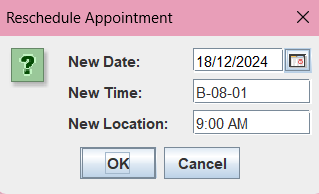


Students can choose from “Upcoming Appointments” tab to select the appointment they want to reschedule.

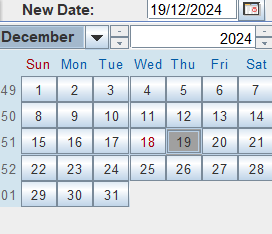
A blue rectangle with black text

Description automatically generated

To reschedule the appointment selected, the student have to locate the “Reschedule Appointment” button at the bottom of the screen and click on it to get a pop-up window.



After clicking “Reschedule Appointment” button, a pop-up window will appear and it will show the date, time, location that the student wants to change. If student decides not to reschedule, they can click on the “Cancel” button or else they can click “OK” button to reschedule.

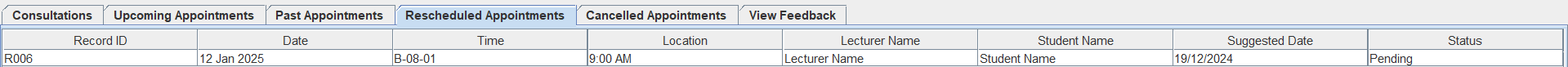


To make it easier for students to change the date, they can select it from a dropdown calendar simply by clicking the icon next to the date box.

A screen shot of a computer screen

Description automatically generated

After student click on the “OK button”, the student will receive feedback which says “Appointment rescheduled successfully!” to reassure students that changes has already been made.



To find the rescheduled data, students can view it under the “Rescheduled Appointments” tab to check it.

### Cancel Consultation

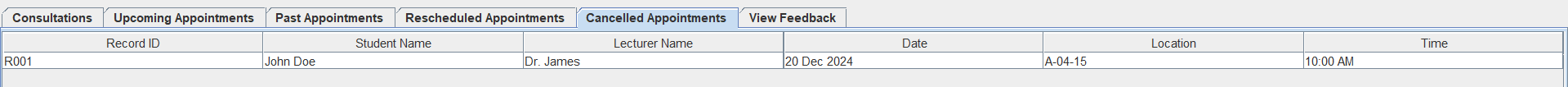


The “Cancel Appointment” button can be found at the bottom centre of the screen.

A screenshot of a computer screen

Description automatically generated

Once student clicks on it, a pop-up window will show to prompt students to select the appointment they want to cancel.



After that, it will show in the “Cancelled Appointments” tab after clicking “OK”.

## Logout Function

A screenshot of a student dashboard

Description automatically generated

At any point of the system, student can choose to end the session and go back to the login page. They can simply do it by clicking on the “Logout” button located at the top right of the page. This button will redirect them to login page immediately.

## 3.2 Lecturer Functionalities

A login screen with a logo and a sign in

Description automatically generated

A screenshot of a computer

Description automatically generated

A test lecturer account will be utilized to showcase the functionalities available to consultants.

An example used is as follows:

* TP Number: TP123
* Password: 123

### Lecturer’s Homepage

A screenshot of a computer

Description automatically generated

After the lecturer logs in, they are directed to the **Lecturer’s Homepage**. This page acts as the central navigation hub, where they can access all other functionalities. The homepage shows various options, such as viewing available consultation slots, adding or editing slots, and viewing feedback.

### Lecturer’s Current Set Available Slots

A screenshot of a computer

Description automatically generated

The lecturer can click on the **Manage Consultation Slot** section to see the consultation slots they have already set as available for students. These slots are displayed in a list format, showing the date, start time, and end time of each available slot. This allows the lecturer to verify their current availability.

### Add Available Consultation Slot

A screenshot of a computer

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Description automatically generated

A screenshot of a computer screen

Description automatically generatedA screenshot of a computer

Description automatically generated

To add a new consultation slot, the lecturer can fill up the column provided with the details such as Record ID, Date, Day, Time, Location and Name. Next the lecturer should click on the **“Add Consultation”** to continue. After clicking this button, a confirmation message popup will appear. After entering the required details, the lecturer confirms the addition, and the new slot will be added to the list of available slots for students.

### Edit Consultation Slot

A screenshot of a computer

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A screenshot of a computer

Description automatically generated

If the lecturer needs to modify an existing consultation slot, they can click on the row they wish to update. This will allow them to select a previously set slot and change its details. They can update the date, time, or other attributes. After editing the information, the consultant saves the changes by clicking on the **“Update Consultation”** button., and the updated consultation slot will reflect the new details.

### Remove Consultation Slot

A screenshot of a computer

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A screenshot of a computer

Description automatically generatedA blue rectangle with black text

Description automatically generated

If a consultation slot is no longer needed, the lecturer select the slot they wish to remove and click on the **“Delete Consultation”** button. Once confirmed, the slot will be removed from the list of available consultation slots, making it unavailable for students to book.

### View Upcoming & Past Appointments

A screenshot of a calendar

Description automatically generated

The lecturer can view their past consultation sessions by clicking the **“View Upcoming & Past Appointments”** button. This will display a list of all appointments they have had and upcoming with students. The list includes details about the date, time, and student information for each session, providing the consultant with a history of previous consultations.

### Give Feedback to Consulted Students

A screenshot of a calendar

Description automatically generated

A screenshot of a computer

Description automatically generated

A blue and black text

Description automatically generated

A screenshot of a computer screen

Description automatically generatedA screenshot of a computer screen

Description automatically generated

A screenshot of a computer

Description automatically generated

A screenshot of a computer

Description automatically generated

After completing a consultation session, the lecturer can provide feedback to the student by selecting a slot from the table and clicking the **“Add Feedback”** button. This opens a popup section where the consultant can enter their feedback, offering suggestions or comments based on the consultation session. The feedback is then submitted to the student.

### View Feedback from Consulted Students

A screen shot of a computer

Description automatically generated

The lecturer can read the feedback left by students regarding their consultation sessions by clicking the **“Feedback”** button. This section shows any comments or ratings that students have provided about the consultation. The lecturer can review this feedback to understand the students’ perspectives and improve their future sessions.

### Reschedule Appointment

A screenshot of a computer

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Description automatically generated

A screenshot of a status dialog box

Description automatically generated A screenshot of a status bar

Description automatically generated A screenshot of a status

Description automatically generated A screenshot of a computer

Description automatically generated

A screenshot of a computer

Description automatically generated

When a student requests to reschedule an appointment, the appointment details will be displayed in the table. The lecturer can update the status of the appointment to "Approved", "Unapproved" or “Pending” by clicking on the “Edit Status” button.

# 4.0 OO Concepts Used

## 4.1 Data Validation

A screen shot of a computer code

Description automatically generated

**Data validation** ensures that data is accurate, consistent, and properly structured before it is used in operations. In this Appointment class, it occurs in the getDate() method, where the date string is parsed. If the date format is invalid, it catches the DateTimeParseException and handles it by printing an error message and returning the original date string. This ensures that invalid data does not cause the program to crash.

## 4.2 Constructor

A black screen with white text

Description automatically generated

**Constructor** is a special method used to initialize objects. It is called when an object of a class is created and can set initial values for the object's attributes. The **constructor** in the Appointment class initializes the object with specific values provided when the object is created. This constructor takes several parameters and assigns them to the respective fields.

## 4.3 Encapsulation

A screen shot of a computer

Description automatically generated

Encapsulation is the practice of hiding the internal details of an object and providing access to those details through public methods (getters and setters). In this Consultation class Fields like **recordID**, **date**, **day**, **timeStart**, **timeEnd**, **location**, and **lecturername** are **private**. This means that these fields cannot be directly accessed from outside the class. **Public getters** (e.g., getRecordID(), getDate(), getTimeStart()) provide controlled access to these private fields and controlled modification of the private fields. For example, the setter for timeStart validates the time format before setting the value.

## 4.4 File Handling

A screen shot of a computer

Description automatically generated

**File handling** encompasses the processes of creating, opening, reading, writing, and closing files in a programming language. Itis demonstrated in the getAppointmentsForLecturer() method, where data is read from a file (appointments.txt). The method reads the file line by line, processes it, and creates Appointment objects accordingly.

## 4.5 Abstraction

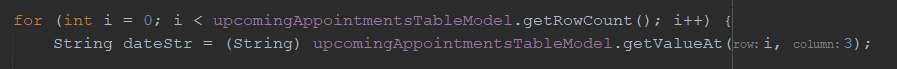
A screen shot of a computer

Description automatically generated

**Abstraction** hides the complexity of the underlying logic. In this case, the validation logic for time format is abstracted away in the setter methods. Users of the Consultation class don't need to know how the time validation is done. They just call the setTimeStart() or setTimeEnd() methods.

## 4.6 Iteration

The method makes use of **iteration** to go through the upcoming appointments and move the valid ones (those with dates before the current date) to the past appointments table.



This iteration over the rows of the table allows for a dynamic update based on the data in the table, demonstrating effective use of loops.

# 5.0 Additional Features

## JCalendar function



A screenshot of a calendar

Description automatically generated

The date selection calendar function is implemented using JCalendar packages imported from the Toedter website (JCalender, n.d.).

**Refresh function**

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Description automatically generated

A screen shot of a computer program

Description automatically generated

The refresh button is meant to update the user interface by reloading the displayed data. This is especially helpful in systems where the information changes regularly, like when new feedback is added or the data is updated.

## Logout Function

A screen shot of a computer

Description automatically generated

A screenshot of a student dashboard

Description automatically generated

A screen shot of a computer

Description automatically generated

A screenshot of a computer

Description automatically generated

A log-out function has been incorporated into the main page to provide both students and consultants with the option to securely exit the system whenever they choose. This feature ensures convenience and flexibility for users who may need to log out at any point during their session.

# 6.0 Conclusion

Throughout the development of the APU Psychology Consultation Management System, we gained a lot of practical experience with object-oriented concepts and coding in general. We really got to experience many OO concepts and learn how to use them to cut down on redundancy. By implementing OO concepts into the coding process, we made our code more reusable.

Along the way, we became more comfortable navigating the Java Oracle documentation and applying methods from various APIs to our project (Java Documentation, n.d.). We also learned how to work with JCalendar, which was really helpful for adding date and time features. While JCalendar doesn’t automatically download external libraries, it made it much easier to manage calendar-related functionality without needing to build everything from scratch, saving us time and energy in the process (JCalender, n.d.).

At the end, we quickly realized that planning is more important than we originally thought. While our initial plan worked to a degree, we had to adjust it multiple times, leading to continuous refactoring and some workarounds. This taught us that careful planning is essential to avoid bigger issues later.

Another important lesson was how crucial teamwork and communication were throughout the process. Staying aligned and keeping each other updated while working on different parts of the system helped everything come together smoothly.

Finally, we also learned to stay flexible and adapt quickly when unexpected challenges came up, which really underscored the importance of problem-solving and creative thinking in programming. In the end, this project has taught us valuable lessons in OO concepts such as collaboration and tackling problems. All of the valuable lessons shall be carried forward into future projects.

# References

*Java Documentation*. (n.d.). Retrieved from Oracles Corporation: http://toedter.com/jcalendar/

*JCalender*. (n.d.). Retrieved from Toedter: http://toedter.com/jcalendar/

Psychological Consultation System Based on Intelligent Optimization Algorithm. (2022). In J. Yao, *Advances in transdisciplinary engineering.*

# Workload Matrix

|  |  |  |  |
| --- | --- | --- | --- |
| **Name & TP Number:** | **Ng Vin Ee TP073088** | **Suchitra Nambiar A/P Mahandran TP074762** | **Total (%)** |
| **Task** | **Contribution Percentage (%)** | |
| Coding Implementation for Consultant Functionalities | 50% | 0% | 100% |
| Coding Implementation for Consultant Functionalities | 0% | 50% |
| Documentation | 50% | 50% | 100% |
| Total | 100% | 100% |  |
| Signature |  |  |  |