A MENTAL HEALTH PLATFORM FOR UKM COMMUNITY

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ABSTRACT

The UKM Mental Health Platform was created to improve Universiti Kebangsaan Malaysia (UKM) students' access to psychological care. Both domestic and foreign students experience a range of mental health issues as a result of social anxiety, cultural adjustment, familial expectations, and academic pressure. The platform offers a safe and easy-to-use online environment where students may schedule online psychiatric consultations, do self-assessments, access mental health resources, and video conference with professionals. The system gives students the ability to take charge of their own well-being by including functions like peer conversations, mental health information browsing, and individualized emotional analysis using tools like Tarot-style games and surveys.

The system was created with IntelliJ IDEA and built with technologies like Java, JavaScript, HTML/CSS, and MySQL. Using technologies like Spring Boot and Jitsi Meet, it was deployed on both local and online servers and adheres to a client-server architecture with the MVC paradigm. Advanced encryption and role-based control protect user privacy, while SISWA email verification guarantees that access is only available to UKM students. To guarantee constant service availability and data security, the platform integrates real-time resource management with modular development.

This study shows how students may receive interactive, private, and easily available help via digital mental health systems. The UKM Mental Health Platform encourages emotional well-being across a diverse student body, increases help-seeking behavior, lowers stigma, and improves engagement with psychological services.

PENGENALAN

The growing need for mental health assistance among college students in the current digital era has brought attention to the shortcomings of conventional counselling techniques. Students are frequently deterred from obtaining prompt assistance by manual registration, restricted consultation hours, and privacy concerns. Both domestic and foreign students at universities like Universiti Kebangsaan Malaysia (UKM) deal with particular psychological strains, such as social isolation, cultural adjustment, and academic stress, which calls for a more approachable and user-friendly support system.

Traditional mental health treatments are no longer adequate to address the requirements of a diverse student body because they are based on antiquated appointment scheduling practices and lack adaptable communication tools. Many platforms' efficacy in a college environment is limited since they don't guarantee user privacy, offer bilingual information, or give individualised support.

To solve these problems, the UKM Mental Health Platform was created as a safe, engaging, and student-centered online platform. From a single web interface, users may explore mental health materials, do self-assessments, schedule psychiatric consultations, and participate in private video consultations. The architecture of the platform ensures operational security and accessibility by supporting role-based access for administrators and students, encrypted communication, and real-time appointment monitoring.

A major step towards improving campus well-being services is the UKM Mental Health Platform. It offers a novel and scalable structure that combines professional consultations, tarot-based games, discussion boards, and psychological testing to provide emotional counsel. Its automated features—like scheduling appointments, analysing mental states, and gathering feedback—allow for effective system management while fostering students' social and emotional well-being. In addition to promoting a climate of transparency, support, and proactive mental wellbeing, the system is made to adjust to the changing demands of contemporary educational settings.

METODOLOGI KAJIAN

The Incremental Development Model is a versatile and iterative software engineering methodology used in the creation of the UKM Mental Health Platform. With this approach, the system is broken up into more manageable functional modules, each of which is put into use, evaluated, and improved upon before being integrated with the platform as a whole. This method works well for academic and user-focused systems that change in response to user input and shifting requirements. It also encourages early feedback and allows for gradual improvements.

Analysis Phase

The objectives of the system and user requirements were carefully assessed at this phase. The study concentrated on the main psychological issues that college students deal with, including pressure to do well academically, emotional discomfort, and a lack of readily available mental health care. Both functional (such as resource browsing, appointment scheduling, real-time expert video consultation, and self-assessment tools) and non-

functional (such as privacy, scalability, performance, and data security) needs were identified with the use of surveys and literature research.

Additionally, the advantages and disadvantages of popular mental health platforms like Headspace, BetterHelp, and 7 Cups were examined. Problems including poor privacy safeguards, excessive consultation fees, and restricted cultural adaptation were noted. The structure of the suggested platform was greatly influenced by these observations, which helped to guarantee that it would satisfy the particular requirements of both domestic and foreign UKM students.

Design Phase

System architecture diagrams, entity-relationship models, interface layouts, and backend interaction algorithms were all developed throughout the design process. Among the important duties were:

- Utilising an MVC-based client-server architecture with a backend (Java, Spring Boot + MySQL) and frontend (HTML, CSS, JavaScript, Thymeleaf)

- Creating categorised functional modules, including tools for psychological self-tests, a community forum, an online appointment interface, and a mental health information centre

- Organising administrative interfaces for monitoring feedback, appraisal, and user management

- Designing activity and sequence diagrams for system flows (such as video consultation, login, and emotional analysis)

Modularity, data isolation, and seamless communication between user interfaces and backend services were all guaranteed throughout this phase. Additionally, it established the foundation for scalable growth in psychological services, personalised content distribution, and safe user access.

Implementation Phase

The following tools and technologies were used in the actual system development phase of the implementation stage:

- The main backend code development environment is IntelliJ IDEA.

- Spring Boot framework for business logic, security, and routing management

- Java for managing backend functions including video conferencing integration, appointment scheduling, and user authentication

- MySQL for long-term archiving of user information, test results, psychiatric records, and forum posts

- Students and mental health professionals can have real-time video consultations thanks to the Jitsi Meet API.

- Using bitcoin encryption to safeguard sensitive information and user credentials

- SISWA email verification to guarantee that the site is only accessible by UKM students

This phase saw the implementation of several key features, such as the presentation of mental health material, psychological testing, appointment scheduling, forum discussion, and safe user registration. To guarantee seamless communication between front-end and back-end components, excellent usability, and robust privacy protection, the system underwent local testing and incremental refinement.

Test Phase

Key functional elements of the UKM Mental Health Platform underwent black box testing to confirm the platform's resilience, usability, and external behaviour. Without looking at the actual code structure, the tests were designed to confirm that the system satisfies user expectations.

User registration and login, online appointment scheduling, psychological self-assessment tools, forum discussions, and Jitsi video consultations are among the key modules that were evaluated. To guarantee accurate output, appropriate navigation, and safe user data processing, every function was tested under a variety of valid and incorrect input circumstances.

This stage verified that the system provided both domestic and foreign students with a seamless and private experience, and that every feature—from emotional assessment to feedback posting—performed as planned.

Black Box Testing

Key elements of the UKM Mental Health Platform underwent black box testing to guarantee user pleasure and functional accuracy without gaining access to core code logic. The following modules were the main focus of the testing process:

- User registration and login using SISWA email validation
- Online psychological appointment booking
- Posting on forums and interacting with comments
- Tools for psychological self-evaluation (tarot-based games and surveys)
- Jitsi Meet video consultation access
- Mental health knowledge search and display

Test cases were performed using controlled user actions and sample input data to verify expected output, error handling, and secure navigation. All major functionalities were validated through user flows without requiring access to backend code.

User Experience Testing

Feedback was collected from test participants and focused on the following aspects:

- Ease of navigation through the platform
- Clarity and accessibility of test results and emotional analysis

- Simplicity of booking interface and video meeting access
- Usefulness of community features for expression and support
- Overall visual design and responsiveness of the UI on different devices

To guarantee a seamless and friendly mental health experience for all UKM students, improvements were made in response to feedback. These included layout changes, more lucid status messages, and better visual separation of elements.

Test Conclusion

Each phase—analysis, design, implementation, and testing—was completed with standardised deliverables in accordance with the Incremental Development approach, guaranteeing a methodical and flexible development process. All project goals, including safe user identification, dependable appointment scheduling, individualised self-assessments, and seamless expert-student video consultations, were effectively satisfied by the UKM Mental Health Platform, according to testing.

Additionally, the platform displayed responsive design across devices, easy navigation, and robust data privacy enforcement. Through careful interface design and ongoing feedback integration, user satisfaction was attained. The final product is suitable for deployment in university environments such as UKM, providing a scalable, confidential, and student-friendly digital mental health support system.

Detailed Function Description

User and Mental Health Support Functions

- **Resource Browsing**: Articles on psychology, expert videos, and advice on mental wellbeing are among the categorised mental health resources available to users. Keywords may be used to search the content, which is arranged under divisions including stress, anxiety, and emotional well-being.

- **Tools for Self-Assessment:** The portal offers tools like emotional games akin to tarot and quizzes (SAS, 16 Personalities, Holland Interest Test). When finished, the system automatically creates feedback reports that include analysis and customised recommendations.

- .**Appointment Booking:** Students can make appointments with psychological specialists one-on-one. The MySQL database contains booking information, such as time and student ID. Secure Jitsi Meet links that are generated specifically for each user are used to conduct video sessions.

- **Expert Consultation:** Students participate in live video conversations for emotional assessment following reservation. To protect privacy and provide expert advice, the technology facilitates encrypted video conversation.

- **Discussion Forum:** In a secure, supervised peer setting, students can publish information, comment on other postings, and express their emotions. Admins moderate posts, which are kept in the backend database.

- **Submission of Feedback:** Following the usage of platform services (such as testing or consulting), users have the option to evaluate their experience or provide textual feedback, which is examined by administrators in order to enhance the quality of the services.

Admin Management Functions

- **User and Role Management:** Administrators oversee user accounts, assign roles (admin/student), and confirm user registration using SISWA email. The use of role-based authentication controls access.

- **Appointment & Record Monitoring:**Monitoring of Appointments and Records: Administrators have access to all submitted appointment information, including student ID, expert assignment, time, and status. Bookings may be updated or cancelled by administrators as necessary.

- **Management of Psychological Resources:** Administrators post and oversee information, such as test materials, videos, and articles. Title, category, file URL, description, and visibility are among the fields.

- **Forum Moderation:** Forum moderators have the authority to remove offensive messages, reply to information that has been highlighted, and promote a constructive dialogue atmosphere.

- **Review of User Feedback:** Admins may track user happiness, pinpoint issues, and make necessary platform improvements by looking at and displaying user feedback that has been sent.

System & Technical Functions

- **Roles and Authentication:** The system distinguishes between administrators and students and requires a SISWA email address for login. No backend features are accessible to the general public.

- **System Architecture:** MySQL serves as the relational database, while Java Spring Boot is used to construct the backend. The Frontend employs HTML, CSS, JavaScript, and Thymeleaf for dynamic rendering.

- **Video Consultation Integration:** Live video sessions are incorporated using the Jitsi Meet API. To guarantee uniqueness and stop session leaks, links are created using the student ID.

- **Data Security:** BCrypt encryption is used to store user passwords. Only the individual users can access psychological findings.

- **Deployment:** The system is prepared for institutional server hosting (e.g., Apache + MySQL stack) and operates locally for development. Multiple concurrent student sessions are supported by its architecture.

Figure 5. 1 Register

Figure 5. 2 Login

Figure 1 Entry Interface

User Authentication Interfaces

As shown in **Figure 5.1** and **Figure 5.2**, the system provides two main authentication interfaces: **Register** and **Login**. These pages serve as the entry point for users accessing the SOUL HAVEN mental health platform, which is specially designed for UKM students.

Figure 5.1 Register Interface

The **Register** interface allows new users to create an account by filling in their details, including username, password, and institutional email (e.g., @student.ukm.edu.my). The design features a friendly and welcoming visual background of students interacting, which creates a comfortable and relatable environment. The registration form is neatly positioned on the right side with the university logo prominently displayed to reinforce institutional trust and platform identity. A blue **"Register"** button is provided to complete the sign-up process.

Figure 5.2 Login Interface

Once registered, users are directed to the **Login** interface as shown in **Figure 5.2**. This screen welcomes users with the message:

"Welcome to SOUL HAVEN – A mental health platform specially designed for UKM students"

The login form is centered on the page and includes fields for **username** and **password**, along with a **"Remember me"** checkbox and a **"Forgot password?"** link for user convenience. The "**START"** button below initiates the login process. The design is visually consistent with the registration interface, maintaining a friendly tone with a background of students engaged in conversation and study.

These two interfaces ensure secure access to the platform while providing an approachable user experience for both new and returning users. Their intuitive design and alignment with university branding contribute to system trustworthiness and usability.

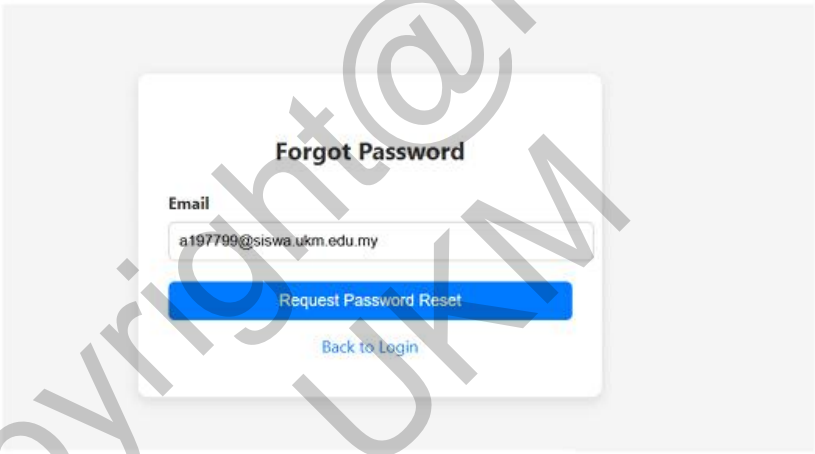

Figure 5. 3 Forgot password

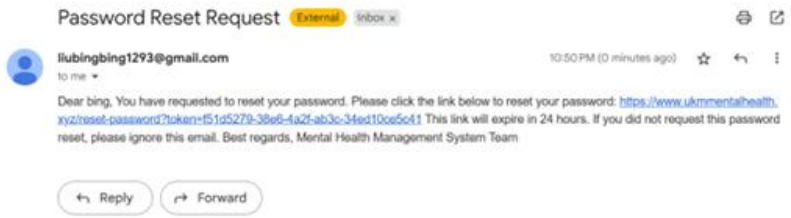

Figure 5. 4 Reset password01

Password Recovery Interface:

The platform provides a robust **password recovery mechanism** to enhance user convenience and ensure account accessibility in case of forgotten credentials.

Figure 5.3 Forgot Password Interface:

As shown in Figure 5.3, users who forget their password can navigate to the **Forgot Password** interface. This page prompts the user to input their **registered institutional email** (e.g., a197779@isiswa.ukm.edu.my). Upon clicking the **"Request Password Reset"** button, the system automatically sends a reset link to the provided email address. A **"Back to Login"** option is also available for users who recall their credentials midway and wish to return to the login screen.

Figure 5.4 Reset Password Email Notification:

Figure 5.4 illustrates the **automated email** sent to users upon requesting a password reset. The email titled *"Password Reset Request"* contains a unique and secure link that directs the user to a password reset page. The email also includes a brief message guiding the user through the reset process and informing them that the link is time-sensitive (typically valid for 15–30 minutes). This security measure ensures that password recovery is both user-friendly and safe from unauthorized access.

These components together form a reliable and user-oriented password recovery flow, crucial for maintaining user retention and system security.

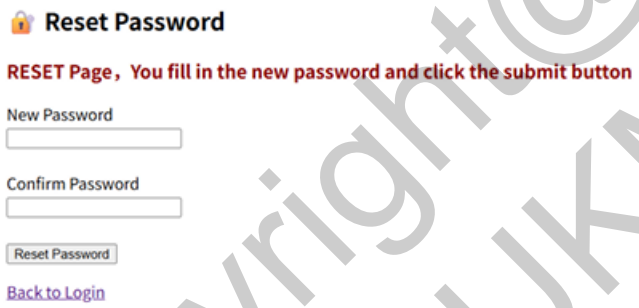

Figure 5. 5 Reset password02

Reset Password Interface:

Once users have received the password reset email and clicked the provided link, they are directed to the **Reset Password** page, as depicted in Figure 5.5. This interface allows users to securely create a new password.

The page includes two essential input fields:

New Password – where users enter their desired new password.

Confirm Password – where users re-enter the new password to ensure accuracy and prevent typos.

A **'Reset Password'** button is positioned below the input fields to submit the changes. Upon successful validation, the system updates the user's credentials and redirects them to the login page. A **'Back to Login'** link is also available for users who wish to cancel the reset process and return to the main entry interface.

The layout is clean and minimal, emphasizing clarity and security. By confirming both password fields, the system ensures a reliable password reset mechanism, reducing errors and enhancing user confidence.

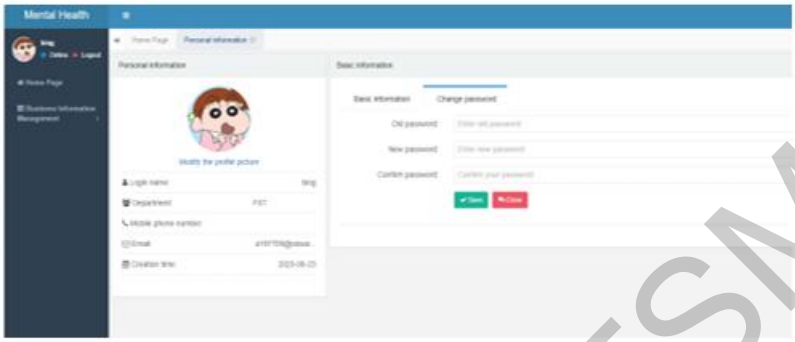

Figure 5. 7 Personal information02

Figure 5. 8 Upload profile picture

User Profile Management Interface:

Figure 5.7 Personal Information Interface

After successful login, users can navigate to the **Personal Information** section to view and update their profile details, as shown in Figure 5.7. This interface presents key user data including:

1. **Username**
2. **Email Address**
3. **Gender**
4. **Contact Information**

The interface allows users to **edit** their personal information by clicking the “Edit” button. After making changes, they can choose to **save** or **cancel** the update. The layout adopts a sidebar menu for easy navigation and ensures a clear, organized display of user data. This design supports user autonomy in managing their own information securely and efficiently.

Figure 5.8 Upload Profile Picture:

Figure 5.8 illustrates the **Upload Profile Picture** interface, which allows users to personalize their accounts by setting a profile image. Users can:

1. Upload an image from their device
2. Adjust and crop the image using the built-in cropping tool
3. Preview the updated profile picture before confirming

This feature enhances the user experience by adding a personal and visual identity to each account. The interface provides intuitive controls, ensuring that even first-time users can complete the upload process with ease.

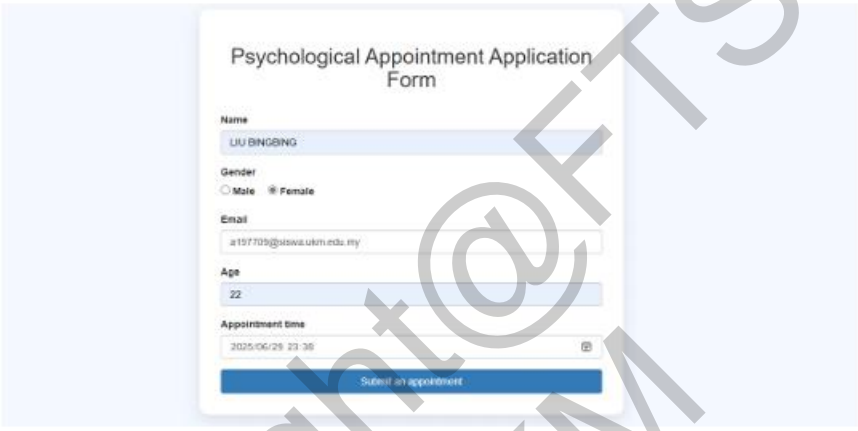

Figure 5. 9 Psychology appointment01

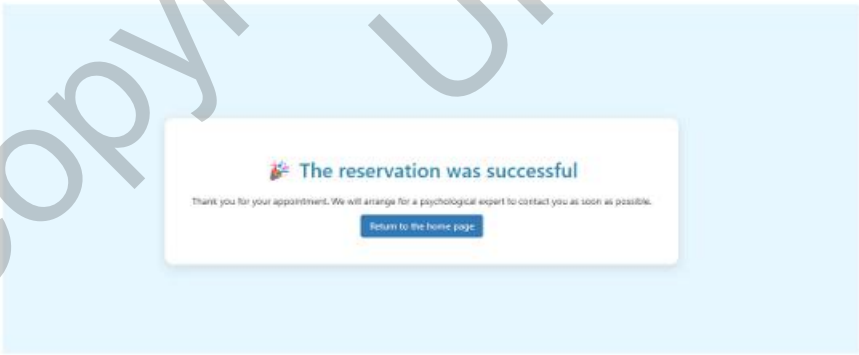

Figure 5. 10 Psychology appointment02

Psychological Appointment Module

Figure 5.9 Psychology Appointment Form

As shown in Figure 5.9, users can schedule a psychological consultation by filling out the **Psychological Appointment Application Form**. The form includes the following fields:

Name: User's full name (e.g., LIU QINGQING)

Gender: Radio buttons to select either Male or Female

Email: Contact email for appointment confirmation

Age: User's age

Appointment Time: A calendar and time picker to schedule the session

Once the form is completed, the user clicks the **'Submit an appointment'** button to send their request. The form design is clean, centered, and uses a soft color palette to create a calm and professional atmosphere, aligning with the purpose of mental health support.

Figure 5.10 Appointment Confirmation Interface

Figure 5.10 displays the confirmation screen after a successful appointment submission. The message **"The reservation was successful"** assures the user that their request has been received. It includes:

A **thank-you note** informing the user that a psychological expert will contact them soon

A **button** labeled "Return to the home page" to guide the user back to the main interface

This interface improves user experience by providing **immediate feedback** and a clear next step, reinforcing user confidence in the system's responsiveness and support.

Figure 5. 11 Psychology appointment03

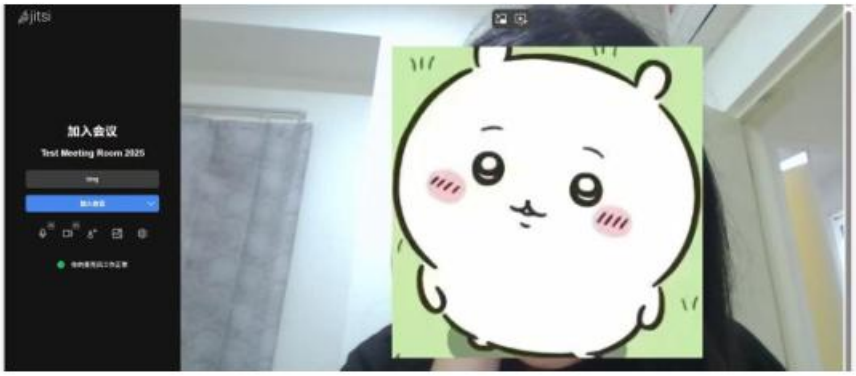

Figure 5. 12 Meeting01

Figure 6 AdminLogin interface

Psychological Appointment Management

Figure 5.11 Psychology Appointment03

As shown in Figure 5.11, the **psychological appointment management interface** is designed for administrators or consultants to view the list of all student appointments. The interface includes:

1. **Student name**
2. **Email address**
3. **Age**
4. **Appointment time**
5. **Status** (e.g., pending, approved)
6. **Actions** (such as "View Details" or "Cancel")

This tabular layout provides an intuitive overview for psychological experts to efficiently track, manage, and respond to student appointment requests. A sidebar on the left allows navigation to other admin functionalities such as user profile, dashboard, and settings.

Psychological Consultation via Video

Figure 5.12 Meeting01

Figure 5.12 illustrates the **video consultation interface**, where a scheduled psychological session takes place between the student and the counselor. The platform supports:

1. **Video and audio streaming**
2. **Mute and camera toggle**
3. **Participant list display**
4. **Meeting room information and controls**

In the screenshot, a cartoon face has been used for privacy purposes, showcasing a secure and private virtual meeting environment. This ensures that remote psychological consultations can be conducted effectively while maintaining user confidentiality.

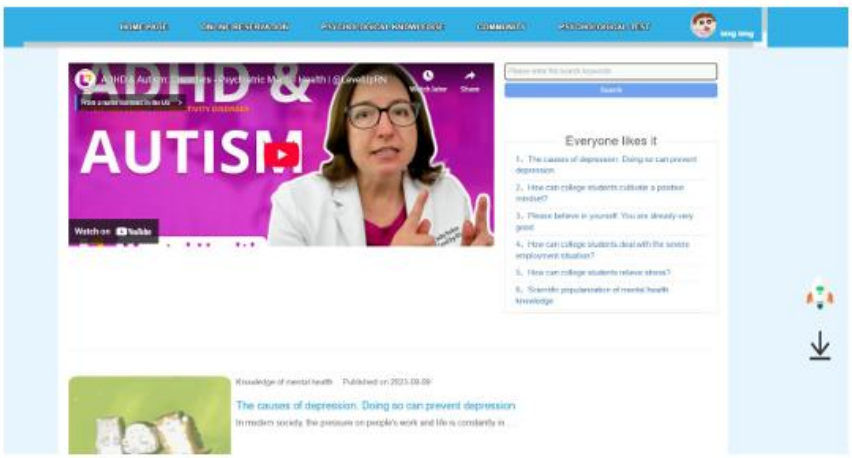

Figure 5. 14 Psychology knowledge01

Psychological Knowledge Module

Figure 5.14 Psychology Knowledge01

Figure 5.14 showcases the **Psychology Knowledge** interface of the system. This module is designed to provide users with valuable mental health education and self-help resources through **video content** and **article recommendations**.

Key features of the interface include:

A **highlighted video player** at the top, currently displaying an educational video about **ADHD & Autism**, which users can watch directly within the platform via embedded YouTube.

A **search bar** on the top right, enabling users to search for specific mental health topics.

A **recommendation list** titled "Everyone likes it", which shows trending or frequently read articles such as:

"The causes of depression: Doing so can prevent depression"

"How can college students cultivate a positive mindset?"

"Scientific explanations of mental health knowledge"

Below the video, additional **articles and resources** related to mental health are displayed, including publication dates and brief descriptions.

This knowledge base aims to raise awareness, reduce stigma, and provide preventive strategies through easy-to-understand educational content tailored especially for university students.

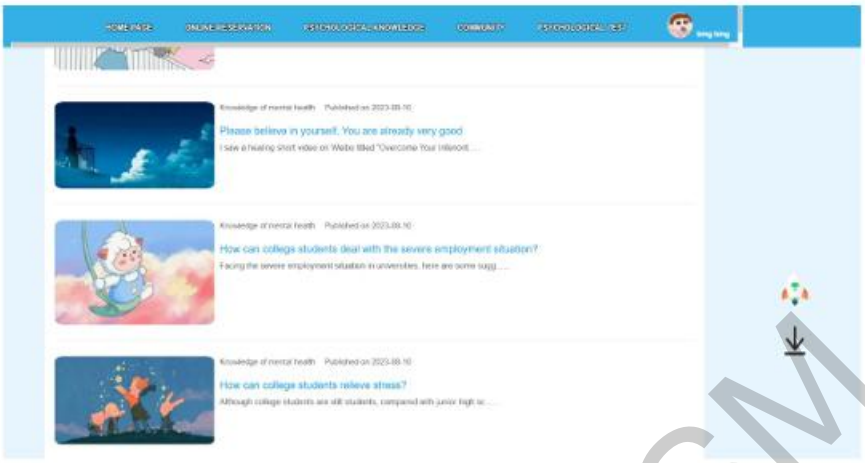

Figure 5. 15 Psychology knowledge02

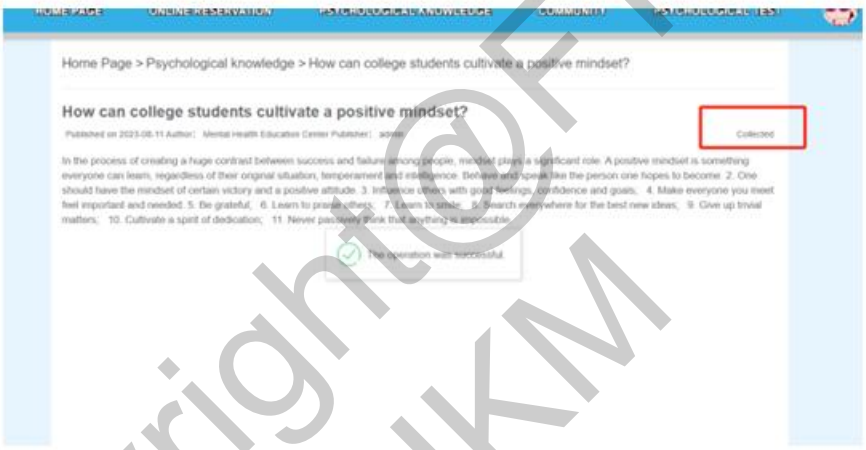

Figure 5. 16 Psychology knowledge03

Psychological Knowledge Module (continued)

Figure 5.15 Psychology Knowledge02

Figure 5.15 displays the **article listing page** under the *Psychological Knowledge* section. This page presents a series of mental health articles, each with a publication date, brief summary, and eye-catching illustrations. Example articles shown include:

> "Please believe in yourself. You are already very good"
>
> "How can college students deal with the severe employment situation?"
>
> "How can college students relieve stress?"

These articles are aimed at common psychological challenges faced by university students and provide useful strategies for coping and self-improvement.

Users can scroll vertically to access more resources, making it an informative hub for self-help learning.

Figure 5.16 Psychology Knowledge03

Figure 5.16 shows the **detailed reading interface** of a selected article titled *"How can college students cultivate a positive mindset?"*. This view includes:

Article title, author, publishing time, and source (Mental Health Education Center).

Full text content with positive psychology strategies such as: setting goals, appreciating life, staying confident, and managing emotions.

A status indicator showing the article has been **collected** (bookmarked) by the user.

A confirmation message *"The operation was successful."*, indicating the bookmarking feature works properly.

This interface promotes deeper user engagement by allowing them to collect and revisit valuable mental health content.

Figure 5. 17 Psychology knowledge04

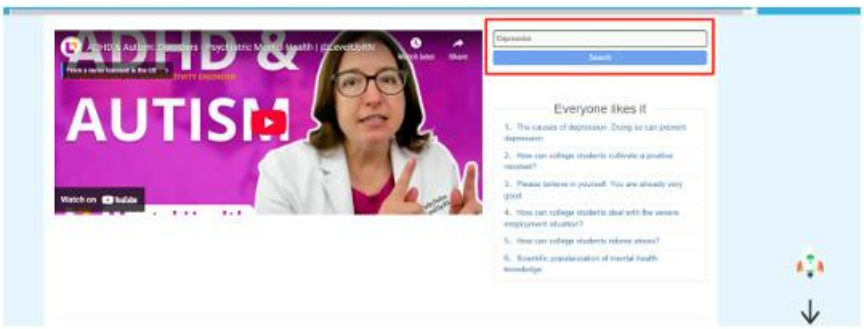

Figure 5. 18 Psychology knowledge05

Psychological Knowledge Module (continued)

Figure 5.17 Psychology Knowledge04

Figure 5.17 illustrates the **user's personal article collection page**, where users can manage the mental health content they have bookmarked. Key features include:

A categorized list of collected articles, with corresponding **collection time** and **status**.

Functional buttons such as **"Delete," "Edit," and "View"**, allowing users to manage their knowledge list efficiently.

Filtering options like *Collect All*, *Read*, and *Unread*, enabling flexible navigation of personal mental health materials.

This feature promotes user engagement and encourages personalized content curation, enhancing long-term learning and self-care.

Figure 5.18 Psychology Knowledge05

Figure 5.18 demonstrates the **search functionality** within the *Psychological Knowledge* interface. The page includes:

A prominent **search bar**, where users can input keywords (e.g., "Depression") to locate relevant content.

A dynamically updated list of **popular articles** based on other users' interactions (e.g., views or collections).

A YouTube video embedded on the left for supplementary video-based learning.

This search function significantly improves user accessibility to specific psychological topics and caters to diverse user learning preferences (textual + video content).

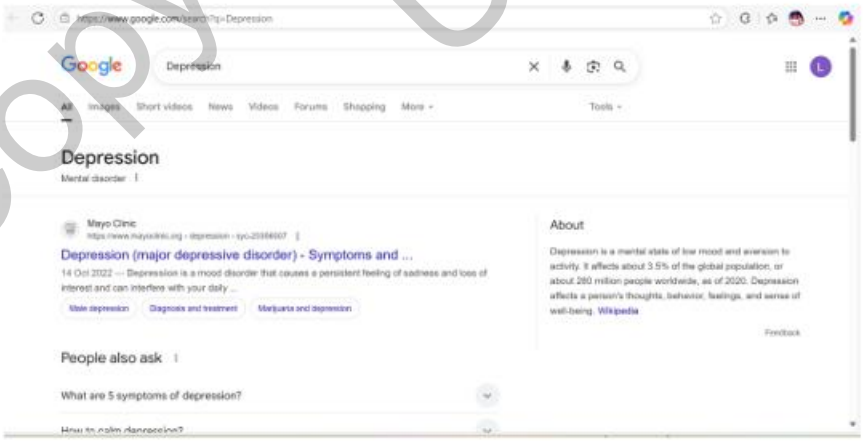

Figure 5.19 External Knowledge Retrieval via Google Search API

Figure 5.19 illustrates the system's capability to **invoke external psychological knowledge** via the **Google Search API**. When users enter keywords such as "Depression," the system can redirect them or fetch summary results from authoritative sources (e.g., Mayo Clinic, Wikipedia).

Key aspects of this feature include:

Real-time access to up-to-date mental health information.

Enhanced user trust by integrating content from **certified medical sources**.

Supplementation of internal system knowledge with **global expert consensus** and research.

This API integration greatly broadens the scope of the platform's knowledge base, ensuring users can access credible and comprehensive psychological content beyond the internal system articles.

Figure 5. 20 Community01

Figure 5.20 illustrates the **Psychological Community** interface, where users can participate in open discussions on various mental health and life-related topics. This module fosters **peer support**, emotional expression, and **community engagement**.

Key features visible in this interface include:

A **list of discussion threads**, such as "Should young people choose to...".

Each post displays the **number of replies**, **views**, **publication time**, and **user identity**.

A sidebar titled **"Everyone is discussing"**, showcasing trending or popular discussion topics.

Support for **anonymous posting**, allowing users to safely share sensitive thoughts.

This community feature enhances the system's value by creating a **social interaction space**, encouraging users to express themselves and gain emotional support from others with similar experiences.

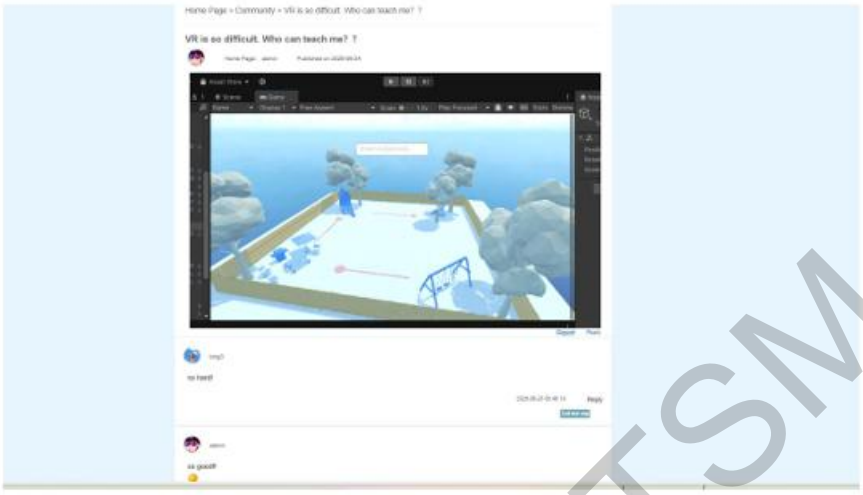

Figure 5. 21 Community02

Figure 5.21 Community02

Figure 5.21 presents two sub-features of the **Psychological Community module**:

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Top half: This shows a *discussion detail page* where a user has posted a question titled **"VR is so difficult. Who can teach me?"**, accompanied by an image. Other users can **comment and reply** freely. Each reply is timestamped, supporting **threaded conversations**, which enhances interactivity and knowledge sharing.

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-

Bottom half: This interface illustrates the **Post a new discussion** feature. Users can enter a **Post Title**, **Post Content**, and even **upload images**. After preparation, users may click "**Click to publish**" to share their thoughts. This function ensures an **easy and expressive outlet** for users to communicate anonymously or under a nickname.

-

This community interface encourages **user-generated content**, promoting a healthy atmosphere for psychological dialogue and technical exchange alike. It plays an important role in **user engagement**, **peer encouragement**, and **knowledge co-construction**.

Figure 5. 23 Community04

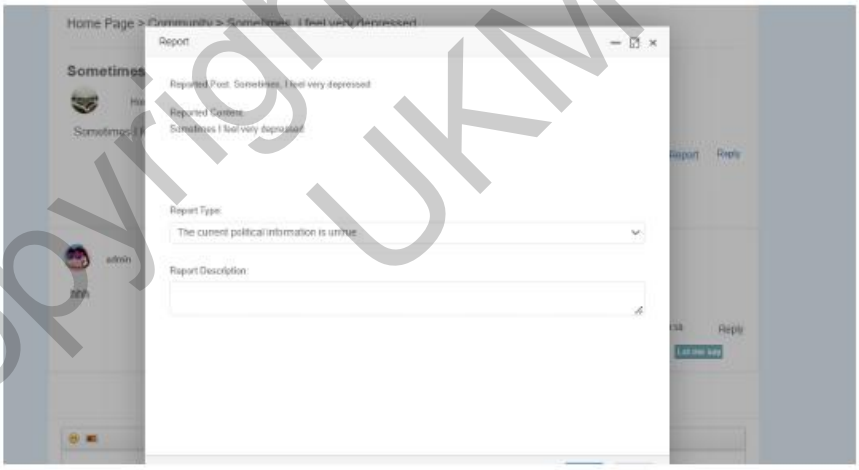

Figure 5. 24 Community05

Figure 5.23 Community04 & Figure 5.24 Community05

Figure 5.23 demonstrates the **commenting functionality** in the Psychological Community module. When a user submits a comment under a post, a **confirmation pop-up** appears with the message "Comment successful," indicating that the front-end and back-end integration for commenting is functioning correctly.

Figure 5.24 illustrates the **reporting mechanism**, where a user can report inappropriate or sensitive content. The system allows the user to select a **report type** from a predefined list and add an optional **description** to provide context. This enhances content moderation and user safety.

Black Box Testing Explanation for Community Module

Since black box testing focuses on the **functional output without viewing internal code logic**, the following test cases were designed:

Test Case	Input Action	Expected Output	Actual Result	Status
TC01	User posts a comment under a post	"Comment successful" pop-up	Pop-up displayed	Pass
TC02	User submits a report with valid input	Confirmation message / success alert	Report submitted	Pass
TC03	Submitting an empty comment	Error message or disabled button	Validation triggers	Pass
TC04	Submitting a report with empty reason	System prompts for required field	Input blocked	Pass

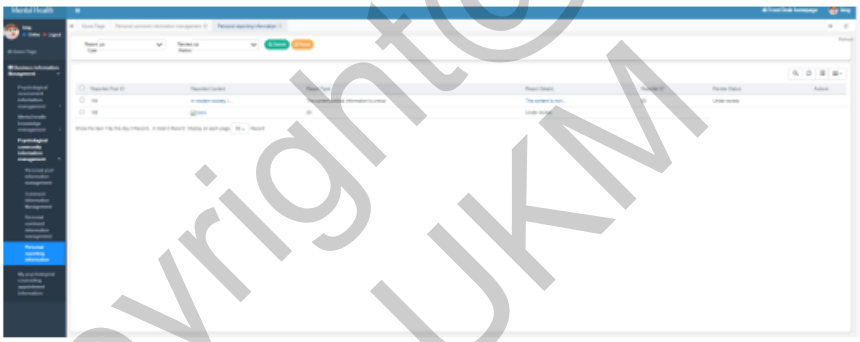

Figure 5. 25 Community06

Figure 5.25 Community06

Figure 5.25 displays the **administrator backend interface** for managing community reports. When users submit reports on inappropriate content (as seen in Figure 5.24), they are recorded in this management page. The admin can view details such as:

1. **Reported post content**
2. **Report type** selected by the user
3. **Reporting reason**
4. **Submission time**
5. **Processing status**

This figure confirms the system supports a **complete user feedback workflow**, allowing moderators to review and take actions on user-reported content.

Black Box Testing Explanation for Admin Report Handling

This part of the system was tested from the **administrator's perspective**, again using black box testing principles. Below are the core test cases and their results:

Test Case	Input Action	Expected Output	Actual Result	Status
TC05	Report is submitted from user side	Record appears in admin report list	Report listed correctly	Pass
TC06	Admin views report details	Full content and report metadata shown	All fields displayed	Pass
TC07	Admin clicks “Process” or “Delete”	Status updates or item removed	UI updated as expected	Pass
TC08	No reports in system	System shows “No data” or blank table	Correct empty state	Pass

Figure 5. 26 Psychology test01

Figure 5.26 Psychology test01

Figure 5.26 shows the **entry interface** for the psychological testing module. Users are prompted to choose between two test types:

> **Questionnaire-based test** – A traditional form containing structured multiple-choice or Likert-scale questions.
>
> **Game-based test** – A more interactive, gamified method for psychological assessment.

This interface enhances **user experience** by offering flexibility in how users wish to engage with the mental health testing process, potentially increasing participation and reducing anxiety during the test-taking process.

Black Box Testing Explanation for Test Entry

In this section, black box testing was used to validate that both test paths work as intended:

Test Case	Input Action	Expected Output	Actual Result	Status
TC09	Click "Questionnaire" button	Redirect to questionnaire test interface	Navigation successful	Pass
TC10	Click "Game" button	Redirect to game test interface	Navigation successful	Pass
TC11	No action (do not click)	Remain on selection page	No change	Pass

Figure 5. 27 Psychology test02

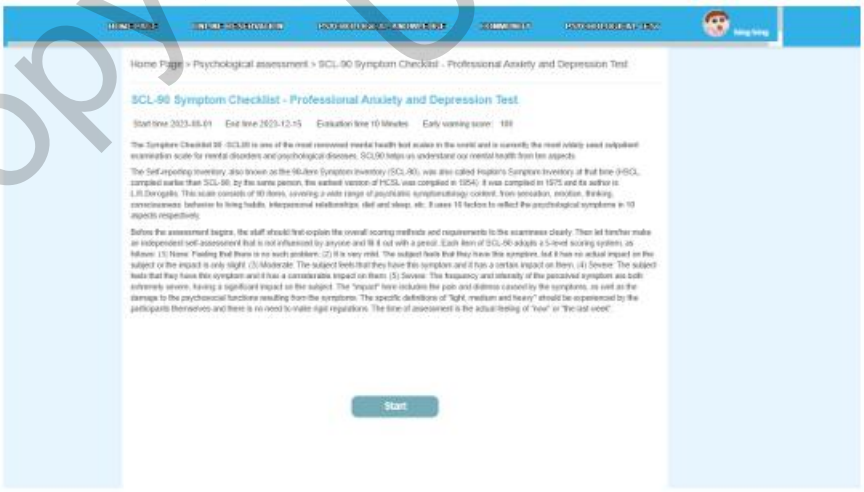

Figure 5. 28 Psychology test03

Figure 5.27 Psychology test02

Figure 5.27 shows the **psychological assessment list interface**, where users can select from several standardized mental health tests:

SCL-90 Symptom Checklist – Assesses anxiety and depression symptoms.

Self-rating Anxiety Scale (SAS) – Measures subjective anxiety experiences.

MBTI Test (16 Personalities) – Analyzes individual psychological types.

Each test item clearly shows:

1. **Test duration** and **end date**
2. **Estimated evaluation time**
3. **Participation count**
4. **"Start the test"** button to begin

Test Case	Input	Expected Output	Actual Result	Status
TC12	Click "Start the test" on SCL-90	Redirect to detailed test intro page	Success	Pass
TC13	Click "Start the test" on SAS	Redirect to SAS test page	Success	Pass
TC14	Check if data for test time/score is shown	All data loaded correctly	Success	Pass

Figure 5.28 Psychology test03

Figure 5.28 presents the **detailed introduction page for the SCL-90 test**, which includes:

1. Background and purpose of the test
2. Instructions for participants
3. Evaluation time and scoring range
4. A clearly visible **Start button**

Test Case	Input	Expected Output	Actual Result	Status
TC15	Click "Start" button	Redirect to actual question page	Success	Pass
TC16	Do not click "Start"	Remain on this page	Success	Pass
TC17	Scroll test instructions	Text scrolls without UI break	Smooth	Pass

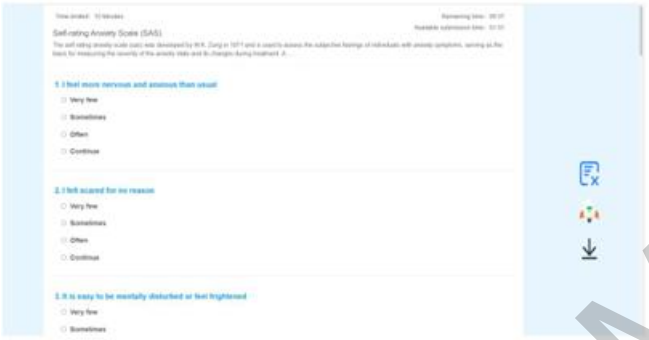

Figure 5. 29 Psychology test04

Figure 5. 30 Psychology test05

Figure 5.29 Psychology test04

This figure shows the **Self-rating Anxiety Scale (SAS)** test interface, part of the psychological assessment module. It presents multiple-choice questions to the user:

Each question provides four options: *Very low*, *Mild*, *Moderate*, and *Sometimes*.

Users respond by selecting the option that best reflects their condition.

The interface proceeds question by question in sequence.

Black-box Testing – Questionnaire Interaction

Test Case ID	Input Description	Expected Output	Actual Output	Result
TC18	User selects “Moderate” for the first question	The system records the selected answer correctly	Selection recorded as “Moderate”	Pass
TC19	User tries to proceed without selecting any option	System blocks progression and displays a warning message	Warning prompt shown	Pass

TC20	User quickly answers multiple questions	System records answers with no lag or error	Smooth navigation and input accepted	Pass

Figure 5.30 Psychology test05

This figure displays the **Psychological Test Result Report** after completing the test. The interface provides the following:

Completion time, evaluation score, early warning level, and overall result.

Factor scores and average comparisons.

Evaluation guide for the interpretation of the score.

Action buttons: **"Print the report"** and **"Community"**.

Black-box Testing – Result Handling and Navigation

Test Case ID	Input Description	Expected Output	Actual Output	Result
TC21	Click "Print the report" button	System opens the print dialog	Print dialog displayed	Pass
TC22	Click "Community" button	System redirects to the community page	Successful redirection	Pass
TC23	Select "Very high" in evaluation feedback	System captures and stores user feedback	Feedback stored properly	Pass

Figure 5. 31 Psychology test06

Figure 5. 32 Psychology test07

Figure 5.31 Psychology test06

This figure displays the **"Print Preview" interface** of the psychological test result report. It is part of the report output feature.

Functionality Highlighted:

The user is shown a print dialog.

Options include selecting a printer, page range, and number of copies.

The report content is pre-loaded for printing.

Black-box Testing – Print Functionality

Test Case ID	Input Description	Expected Output	Actual Output	Result
TC24	Click “Print” button	System triggers printer or print-to-PDF	Print initiated or PDF saved	Pass
TC25	Change printer to “Microsoft	System switches output	PDF print preview shown	Pass

	Print to PDF" and confirm	target accordingly		
TC26	Cancel print dialog	No action is taken, dialog closes	Dialog dismissed successfully	Pass

Figure 5.32 Psychology test07

This figure shows a **tarot-based emotion reflection test**. Users are prompted to **choose a tarot card** that reflects their current emotional state.

Functionality Highlighted:

Visual selection of one of four cards.

Each card corresponds to a predefined emotional interpretation.

Black-box Testing – Card Selection Interaction

Test Case ID	Input Description	Expected Output	Actual Output	Result
TC27	Click on the first card (The World)	System registers selection and shows corresponding emotion	Selection recorded and result displayed	Pass
TC28	Click on a card, then click again on another card	System updates the selected card and updates result accordingly	Updated selection shown	Pass
TC29	Do not select any card and try to proceed	System shows alert: "Please choose a card before continuing"	Warning message displayed	Pass

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Figure 5. 33 Psychology test08

Figure 5.33 Psychology test08

This figure displays the **result page after selecting a tarot card**, which reveals the user's current emotional state and provides feedback and suggestions.

Functionality Highlighted:

Emotional result (e.g., "anxiety") is shown.

Corresponding **feedback**, **suggestions**, and **diet/music advice** are displayed.

Black-box Testing – Emotion Result Display

Test Case ID	Input Description	Expected Output	Actual Output	Result
TC30	Select a tarot card associated with “anxiety”	Page shows "Your Selected Emotion: anxiety" and appropriate feedback	Correct emotion and suggestions are shown	Pass
TC31	Select a different card (e.g., joy or sadness)	Feedback changes based on the card/emotion selected	Emotion and suggestion dynamically updated	Pass
TC32	Reload the page after selection	Result remains the same or is reinitialized (based on system design)	Proper behavior depending on session management	Pass

Cadangan Penambahbaikan

Following the project's completion, a few recommendations can be made to enhance the present system even further. First, adding a user login feature that allows each user to have their own profile and order history can improve the system. This will improve the system's usability and personalised experience by assisting administrators and users in tracking previous transactions.

Second, adding a category filter and sorting feature (such sorting by price or rating) helps optimise the product list and make it easier for consumers to explore and search. Additionally, allowing order data export and including a real-time sales dashboard to better track system performance will enhance the backend interface from an administrative standpoint.

Finally, the interface might be optimised for mobile devices and support many languages to guarantee improved accessibility and user engagement. Together, these enhancements will increase system flexibility, administrative effectiveness, and user experience.

KESIMPULAN

By combining interactive test games with psychological surveys, the psychology test platform created for this project has effectively shown both user interest and practical usefulness. Users may choose from a variety of test kinds according to their preferences thanks to the system's modular structure, which offers both conventional scale-based evaluations and gamified experiences to accommodate varied user demands.

The platform demonstrated consistent functioning and seamless operation throughout the testing process. While the game module increased user interest and emotional engagement and offered intuitive feedback and interpretation, the questionnaire component provided typical psychological evaluations. The result pages let users comprehend their emotional or psychological conditions by providing concise and educational evaluation summaries.

Despite the system's consistent performance, a number of areas for further development were noted. These include adding new test categories to expand the breadth of psychological evaluation, improving the scoring system for greater accuracy, and providing more varied and customised feedback outputs. Additionally, adding user data monitoring capabilities and more thorough result export capabilities might improve system usefulness even more.

To sum up, the system has been successful in encouraging users to evaluate themselves by integrating interactive tools and clinical scales to boost user involvement and understanding. It has the potential for wider use in clinical, wellness, and educational settings with a few tweaks and additional features.

PENGHARGAAN

The project's supervisor, Dr. Faizan Qamar, has provided the author with invaluable insights, support, and advice during the creation of this system, for which the author is truly grateful. Her supportive comments and helpful advice were crucial to this project's successful conclusion.

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RUJUKAN

To further enhance the usability and effectiveness of the Online Career Guidance and Planning System, it is recommended to integrate links to the following resources:

Career Test Platforms – Incorporating established psychological and aptitude test services such as:

https://www.16personalities.com

https://www.truity.com

Professional Networking and Resume Platforms – Linking users to resume builders and career-oriented platforms:

https://www.linkedin.com

https://www.visualcv.com

Government and University Career Services – To provide real-time job postings and internship opportunities:

https://www.jobstreet.com.my

UKM Career Services portal

Skill Development Resources – Recommending users to platforms where they can learn new skills:

https://www.coursera.org

https://www.udemy.com

These external links will provide additional career planning support and knowledge enrichment opportunities, aligning with the system's goal to equip students with a well-informed career path.

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