

Hong Kong Diploma of Secondary Education Examination **20XX**
Information and Communication Technology
School-based Assessment
Elective B: Web Application Development
Website for selling tutoring services

United Christian College (Kowloon East)

Name: _____

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Design Part

Introduction

The website is an online shopping website for tutorial courses designed for both Primary School and Secondary School students in order to help with their academic results.

Functions

1. For guests
 - Login and Register
 - Viewing different courses
 - Viewing profile of different staffs
 - Changing themes (dark mode and light mode)
 - Changing languages (English, Traditional Chinese, Simplified Chinese)
 - Filtering courses (with grades and subjects)
 - Sorting courses (based on popularity)
 - Accessing “Help Center” page
2. For customers
 - Functions that guest has
 - Subscribing tutors
 - Adding payment methods
 - Giving comments and rating to paid courses
 - Editing profile
 - Adding products to shopping cart
 - Viewing past payment records
 - Giving comments for the entire service
3. For staffs
 - Functions that guest has
 - Adding new courses
 - Updating course information or deleting course
 - Viewing order records from all users
 - Editing profile
 - Viewing comments from users

Design Factors

1. Web accessibility

- Definition: better web accessibility means that more users are able to access to the website
- Usage: more users can access to the website
- Changing theme (dark mode and light mode)
 - Dark mode has a higher contrast in colour to make things easier to see, which is great for people who are suffering with low vision problem
- Changing language (English, Traditional Chinese and Simplified Chinese)
 - Users can still access to even they do not understand English
- Navigation bar and footer
 - Users are able to access common webpages through the links in the navigation bar
 - All webpages' links available are included in the footer. Therefore, users can directly go to the page through the footer

2. User-friendliness

- Definition: the website should be easy enough for users to understand and use. Users should feel comfortable during the visit to the website.
- Usage: more users are willing to stay on the website for a longer time
- Showing username and email address input previously in the profile edit page
- Filtering course with subjects and grades
 - Users can find the course they want in a fast way
- Sorting course with popularity or tutor or suitability
 - Customized order is provided for customers for sorting with tutor or suitability (The result of the sorting is based on the subscribed tutor and grade, subject chosen by every user)
 - Users can find the course with a higher / lower ranking in a fast way
- Different subjects shown when different grades chosen when filtering
 - Users can allocate the subject they want to select faster as less subject are shown
- Showing previous input in the register form when error occurs
 - Users do not need to waste time in inputting the information again and would not be annoyed by repeating the action
- Navigation bar and footer
 - Users can go the webpage they want with a fast method
 - User can change language directly through the navigation bar
- “Setting” section

- Users can choose the language, the theme, the open of notification in the “Setting” section inside profile page

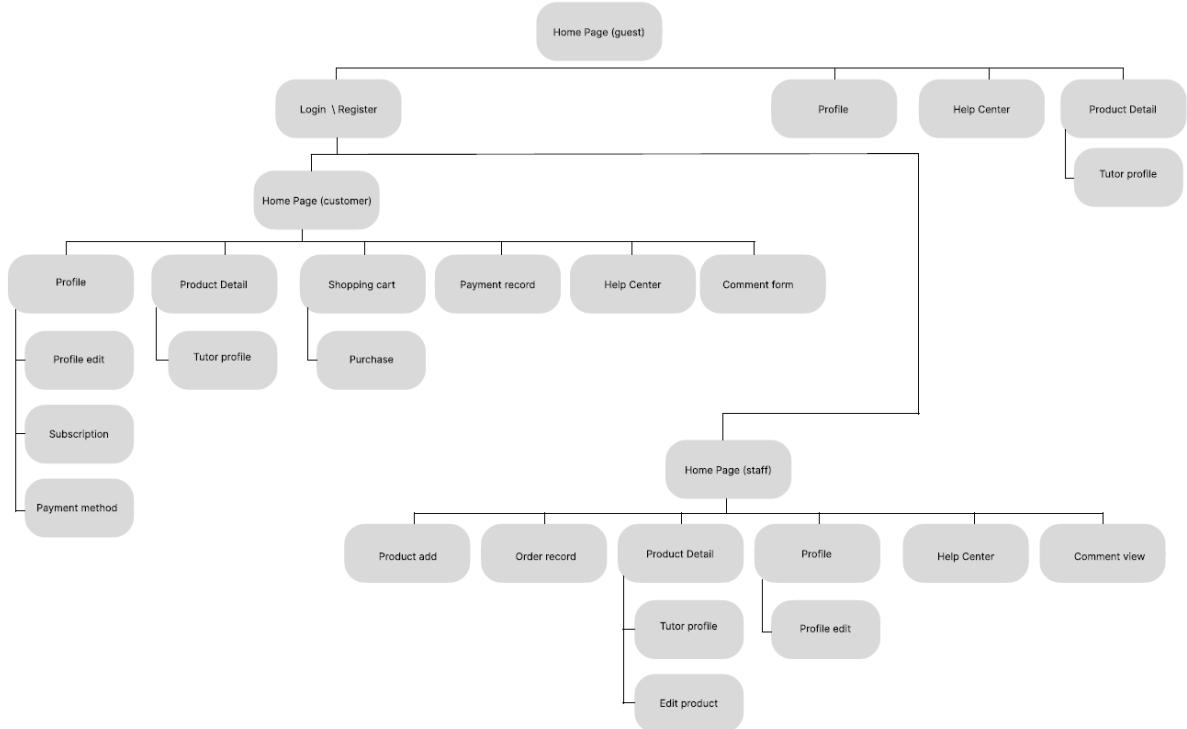
3. Audience awareness

- Definition: clearly knowing the target audience, and design the website according to their stance
- Usage: to let users feel comfortable while using the website and willing to stay longer
- Comment forms
 - Two comment forms are given in order to let users to give advice and comments
 - Comment form for specific course
 - Comment form for the entire service
- Grade and subjects to choose while register
 - Users can choose their grade and subject want to improve while registering

4. Multimedia elements

- Usage: to make the website more attractive, engaging and memorable to users through different ways to demonstrate information to users
- Sounds
 - Sound effects will be play when login, logout, course added to cart, error occurs, deleting things and after buying courses
- Images
 - Course images, banners, icons and shop logo
- Text
- Animation
 - One of the banners
- Video

Website structure



Website layout

1. General Structure

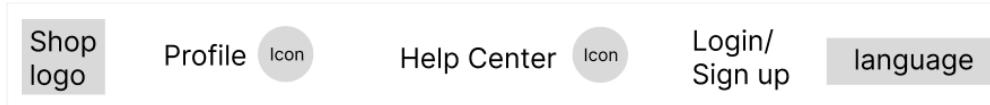
Navigation Bar

Content

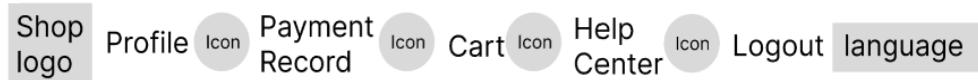
Footer

2. Navigation Bar

Guest:



Customer:

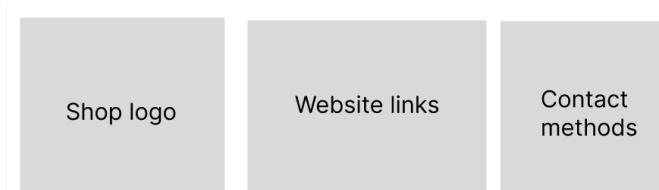


Staff:



3. Footer

Guest + Customer + Staff:



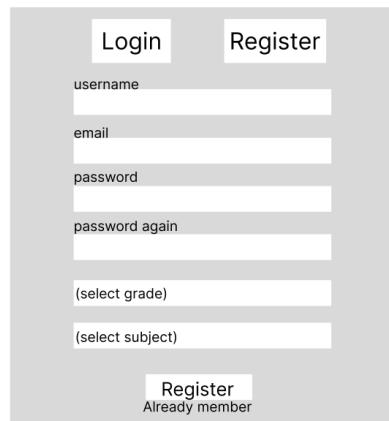
4. Login and Register

Login:

The login form consists of the following elements:

- Two buttons at the top: "Login" and "Register".
- A "username" input field below the first button.
- A "password" input field below the second button.
- A "Login" button at the bottom, followed by a "Forgot password" link.

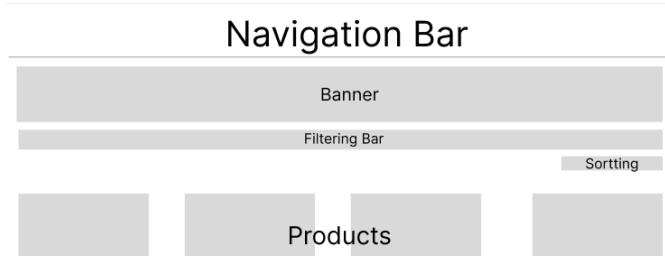
Register:



A registration form interface with a light gray background. At the top are two buttons: "Login" and "Register". Below them are six input fields with labels: "username", "email", "password", "password again", "(select grade)", and "(select subject)". At the bottom right is a "Register" button with the text "Already member" below it.

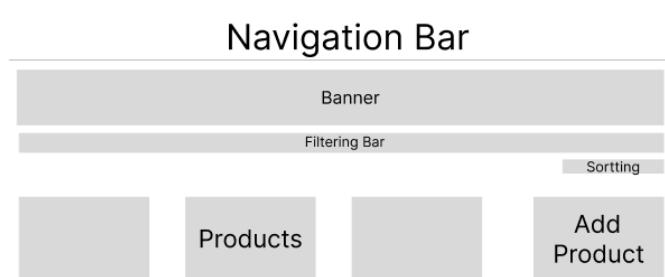
5. Home Page

Guest + Customer:



Footer

Staff:



Footer

6. Product detail Page

Navigation Bar

Course image

Course informations

Comments

Footer

7. Edit course page

Staff:

Navigation Bar

Photo upload box

Course information

delete

update

Footer

8. Add course page

Staff:

Navigation Bar

Photo upload box

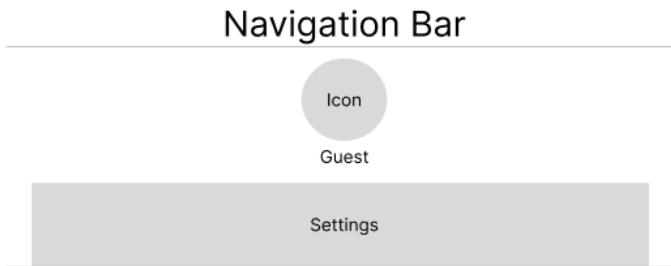
Course information

submit

Footer

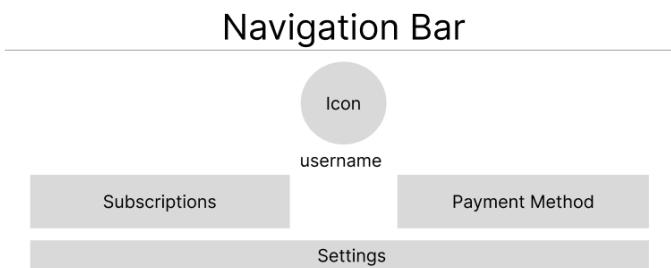
9. Profile page

Guest:



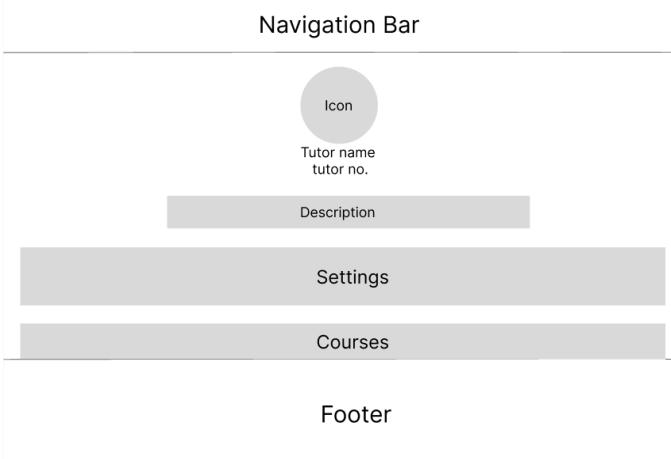
Footer

Customer:



Footer

Staff:



Footer

10. Subscription page

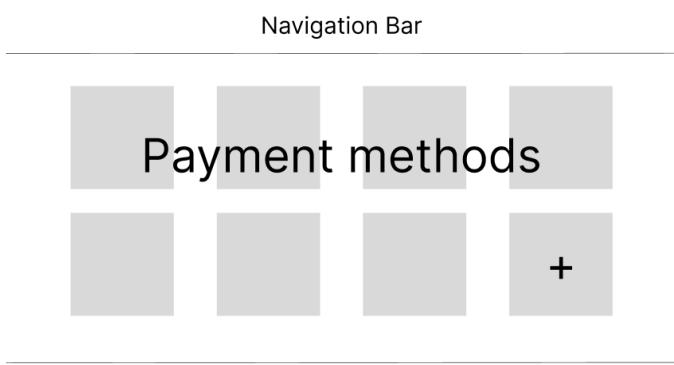
Customer:



Footer

11. Payment method page

Customer:



Footer

12. Add payment method page

Customer:

Navigation Bar

Adding payment method

(choose payment method)

(input card no)

submit

Footer

13. Edit profile page

Customer:

Navigation Bar

Icon

Personal information editing

Footer

Staff:

Navigation Bar

Icon

Personal information editing
+
self-description editing

Footer

14. Payment record page

Customer:

Navigation Bar

Filtering Sorting

Order
information

Course information +
give comments and rating

Order
information

Course information +
give comments and rating

Footer

15. Order record page

Staff:

Navigation Bar

Filtering Sorting

Order
information

Course information

Customer
information

Order
information

Course information

Customer
information

Footer

16. Shopping cart page

Customer:

Navigation Bar

Select all

Cart
Records

Total: \$XX [Buy](#)

Footer

17. Purchase page

Customer:



18. Comment page

Customer:



Staff:



Footer

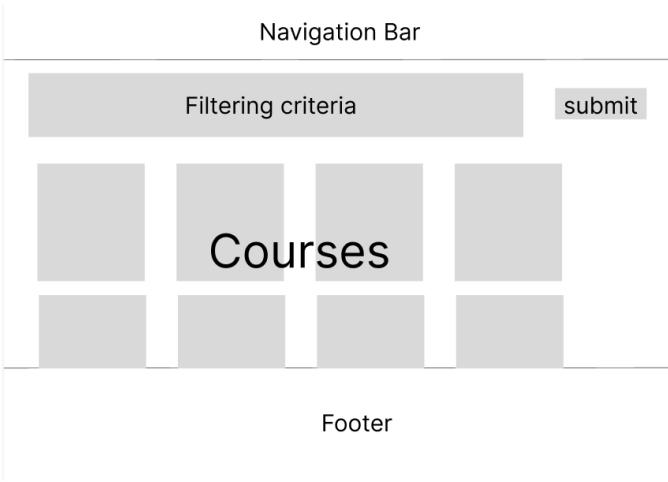
19. Help Center

Guest + Customer + Staff:



Footer

20. Courses page

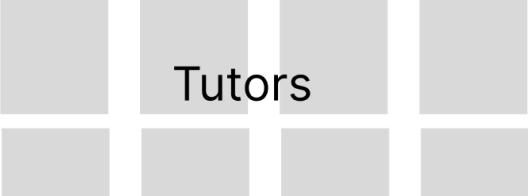


21. Tutors page

Navigation Bar

Filtering tutor's name submit

Tutors



Footer

Implementation

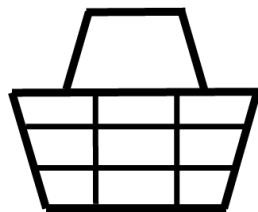
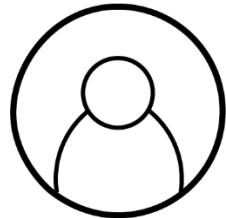
Software and techniques used in creating multimedia contents



1. Adobe Illustrator

I used Abode Illustrator to create the icons of the website. As Adobe Illustrator provides a transparent background for the image. Moreover, I can use it on a laptop.

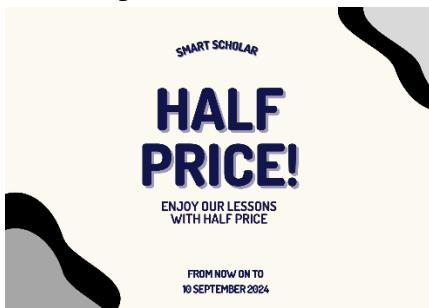
Examples:



2. Canva

I used Canva to create banners and the animation of my website. As it is easy to use and there are many templates to take reference with.

Examples:





3. Procreate

I used Procreate to draw my shop logo. The reason why I used it is because there are many useful tools inside and I need a transparent background for the logo.



4. DeepAI

I used DeepAI (an AI photo generator) to generate course images in order to reduce time spending on creating course images. To do this, I used the prompt “Please help me generate XXX course photo for Primary / Secondary X students in Hong Kong. Please show a clear word of ‘XXX’ shown”.

Examples:



Web coding

1. Header

```
<head>
  <meta charset="utf-8">
  <link href="../css/style.css" rel="stylesheet" type="text/css">
  <script src="../javascript/javascript.js" type="text/javascript"></script>
  <title>Product | Smart Scholar</title>
  <link rel="icon" href="../../images/shop.png" type="image/x-icon">
</head>
```

- Every page contains similar content within the `<head>` tag. Some pages may have additional linkage with other JavaScript files.
- The above example is the content of `<head>` tag inside the file `product.php` for product detail page.
- The `<meta>` tag specifies that the browser should use UTF-8-character encoding.
- The first `<link>` tag helps connecting to the CSS file with the attribute “`href`” and the path `../css/style.css`, which contains all the needed styles for the entire website.
- The `<script>` tag is used to link the JavaScript file with the attribute “`src`” and the path `“..../javascript/javascript.js”`.
 - In some other pages with more JavaScript file linking, the `<script>` tag has also been used with different path
- The `<title>` tag is utilized to set the page title in the title bar to “Product | Smart Scholar” in this case.
- The second `<link>` tag is included to specify the favicon for the page inside the title bar, pointing to the image located at `..../images/shop.png` with the “`href`” attribute.

2. Importing CSS file

```
@import
url("https://fonts.googleapis.com/css2?family=Poppins:ital,wght@0,100;0,200;0,300;0,400;0,500;0,600;0,700;0,8
00;0,900;1,100;1,200;1,300;1,400;1,500;1,600;1,700;1,800;1,900&display=swap");
@import url("login_register.css");
@import url("nav.css");
@import url("home.css");
@import url("product.css");
@import url("buy.css");
@import url("cart.css");
@import url("payment.css");
@import url("order.css");
@import url("profile.css");
@import url("subscriptions.css");
@import url("forgot.css");
@import url("help.css");
@import url("comment.css");
@import url("footer.css");
@import url("tutor.css");
```

- The `@import url("XXX")` is used to import all styling files to `style.css` for easier linking between HTML file and CSS file.
- The first line imports the font style used on the website, which is from Google.
- The subsequent lines import all other CSS files for different webpages.

3. Setting root elements in CSS

```
:root{  
    --background: #ebd182;  
    --navbackground: white;  
    --colour: #3c556b;  
    --hr: #989292;  
    --shadow: rgba(0, 0, 0, 0.2);  
    --a: darkblue;  
    --trans_dark: 0px;  
    --trans_noti: 0px;  
    --nava: black;  
}
```

- The `:root` selector in the file `style.css` stores the document's root elements which the elements may frequently change and with a wide range of use on the website.
- “`--`” is used in front of the texts to show that it is a variable.
 - Take the variable `background` with the value `#ebd182` as an example, the corresponding code is `--background: #ebd182`

4. Basic CSS

Some common styles are also included in the file `style.css`. Below are some examples.

```
body{  
    font-family: "Poppins", sans-serif;  
    font-weight: 400;  
    font-style: normal;  
    background-color: var(--background);  
    color: var(--colour);  
    margin: 8px 0 0 0 ;  
    width: 100%;  
}
```

- This part of styling affects the elements with `<body>` tag in all files.
- The font family used is what mentioned in the code `font-family: "Poppins", sans-serif`
- The font weight is set to 400 with `font-weight: 400`
- Normal font style is used
- The background colour will change according to the root element `background` mentioned previously with the code `background-color: var(--background)`
- `color: var(--colour)` is similar to background colour, which `color` is changing the text colour
- The margin property state applies that there will be 8px of margin on the top with the code `margin: 8px 0 0 0`. The corresponding places according to the order of margins are top, right, bottom, left.
- The width property with the code `width: 100%`, set the width of the website to 100% of the screen size of the device viewing

```
button,  
input{  
    cursor: pointer;  
}
```

- The above code has affects to `<button>` tag and `<input>` tag
- It set the cursor to a pointer
 - Users can know clearly which part of the website they are able to click on

```
.hidden{  
    display: none;  
}
```

- This is for the style for elements with class name “hidden”
- The elements will be invisible without any actions with `display: none`

```
#top-button{  
    display: none;  
    position: fixed;  
    z-index: 4;  
    border: none;  
    border-radius: 50%;  
    cursor: pointer;  
    right: 3%;  
    bottom: 5%;  
    padding: 0;  
    height: 50px;  
    width: 50px;  
    background: white;  
}  
#top-button img{  
    height: 30px;  
    z-index: 5;  
}
```

- The above code changes the style for elements with id “top-button” and elements with `` tag inside element with id “top-button”
- For the element with id “top-button”
 - The initial setting for the `display` property is `none`, stating that it would not appear on the website at the beginning
 - The element is in a fixed position with the code `position: fixed`
 - The element is in a quite top layer, which the code set `z-index: 4`
 - The element does not have borders, and its border radius is set to 50%
 - The cursor is set to `pointer`
 - On the right and bottom of the element, there will be 3% and 5% (of the screen size) of spaces respectively
 - No padding is given to the element
 - The height and width of the element is fixed to 50px respectively
 - The background colour is set to white with `background: white`
- For the elements with `` tag inside element with id “top-button”

```
.object{  
    width: 100%;  
    position: fixed;  
    z-index: 3;  
    top: 0;  
    height: 67px;  
}
```

- The code is for styling elements with the class name “object”, which contain the content of navigation bar
- The height is set to 67px, the width is set to 100% of the device
- The position of the element is fixed with no space on the top
- The element is on top of most of other elements with its z-index

5. Phone view (CSS)

```
@media only screen and (min-device-width: 320px) and (max-device-width: 430px) and (min-device-height: 480px) and (max-device-height: 956px) and (orientation: portrait){
    #top-button{
        height: 90px;
        width: 90px;
    }
    #top-button img{
        height: 50px;
        width: 50px;
    }
    body{
        margin-top: 35px!important;
    }
    body h1{
        font-size: 49px!important;
    }
    body h2{
        font-size: 47px!important;
    }
    body h3{
        font-size: 41px!important;
    }
    body h4{
        font-size: 47px!important;
    }
    body h5{
        font-size: 45px!important;
    }
    body h6{
        font-size: 43px!important;
    }
    body p{
        font-size: 41px!important;
    }
    body select,
    body button,
    body input[type="submit"]){
        font-size: 37px!important;
    }
    body option{
        font-size: 20px!important;
    }
    body input[type="text"],
    body input[type="password"],
    body input[type="email"],
    body textarea{
        font-size: 41px!important;
    }
    .object{
        width: 100%;
        position: fixed;
        z-index: 3;
        top: 0;
        height: 90px!important;
    }
    .hr{
        height: 2px;
        width: 100%;
        background: var(--hr);
        top: 90px!important;
    }
    .hr.fixed{
        display: none!important;
    }
}
```

- The above codes are CSS codes for phone view.
- To change styles only when the device is phone and is in portrait mode, the `@media only screen and (min-device-width: 320px) and (max-device-width: 430px) and (min-device-height: 480px) and (max-device-height: 956px) and (orientation: portrait)` is used
- Take the above code, which is inside the CSS file `style.css` as an example, the element with id “top-button” is resized to 90px X 90px, the element with both class name “hr” and “fixed” become invisible, etc.

6. Session

```
<?php
    session_start();
    .....
    session_unset();
    session_destroy();
    $_SESSION[ "sound" ] = "sound_logout";
?>
```

- Session starts with `session_start()`
- All sessions started are unset with `session_unset()`
- All session is destroyed with `session_destroy()`
- `$_SESSION["XXX"] = "XXX"` means that a variable in session is set
 - In this case, the variable `sound` in session is set to “`sound_logout`”

7. PHP with SQL

```
<?php
    $con = mysqli_connect("localhost", "root", "", "ictsba") or die(mysqli_error($con));
```

- The variable `con` is used to connect with the database “ictsba” with `mysqli_connect("localhost", "root", "ictsba")`
- An error message will output when there is error with `mysqli_error($con)`

```
$result = mysqli_query($con,$sql);
$row = mysqli_fetch_array($result);
$num_row = mysqli_num_rows($result);
```

- The variable `sql` stores the SQL statement set previously
- The variable `result` stores the result of the SQL statement with `mysqli_query($con, $sql)`. Which it put the content containing in the variable `sql` runs in the connected database stores in the variable `con`
- The variable `row` stores the result of the SQL statement as an array
- The variable `num_row` stores the number of rows of the result of SQL statement with `mysqli_num_rows($result)`

```
<?php
    mysqli_close($con);
?>
```

- Connected database stored in the variable `con` will close with `mysqli_close($con)`

8. Including navigation bar and footer

```
<div class="object">
    <?php include "../navigation/nav.php"?>
</div>
<div class="hr fixed"></div>
<?php include "../footer/footer.php"?>
```

- Each page has a common content of navigation bar and footer. Therefore, a separate file is created to reduce typing time, and they need to be included in every webpage.
- PHP function `include “XXX”` is used to do so

- A <div> tag with class name “object” is used to cover the navigation bar
- A horizontal divider is used under the navigation bar to let users distinguish the navigation bar and the contents better. A <div> tag with class names “hr” and “fixed” is used to do so.

9. Sound playing

```
<html>
  <head>
    <script src="../javascript/javascript.js" type="text/javascript"></script>
  </head>
  <body>
    <audio src="../../sounds/error.m4a" id="sound_error" controls preload></audio>
    <audio src="../../sounds/login.m4a" id="sound_login" controls preload></audio>
    <audio src="../../sounds/logout.m4a" id="sound_logout" controls preload></audio>
    <audio src="../../sounds/cart.m4a" id="sound_cart" controls preload></audio>
    <audio src="../../sounds/buy.m4a" id="sound_buy" controls preload></audio>
    <audio src="../../sounds/delete.m4a" id="sound_delete" controls preload></audio>
  </body>
</html>
```

- To have better control and organization for the soundtracks, a separate file is opened for storing the soundtracks only.
- <audio> tags are used to include the soundtracks in the HTML file
 - Each of them is given a special id for the JavaScript function that will be mentioned later
 - “src” attribute is used to link the soundtracks and the <audio> tag
 - There is a “control” attribute is used to make the audio file presentable
 - A “preload” attribute is also included to load the audio file even it was not called

```
<?php
  if (isset($_SESSION[ "sound"])){
    if ($_SESSION[ "sound"] != "") {
      <script>
        let savedSound = localStorage.getItem("sound");
        if (savedSound == "open"){
          Play("<?php echo $_SESSION[\"sound\"]?>");
        }
      </script>
    }
    $_SESSION[ "sound"] = "";
  }
?>
```

- This is the code to activate the audio file inside the HTML file
- The above code will appear in `cart.php`, `payment.php` (inside the folder `payment`), `index.php` and `login_register.php`
- The appear of the session variable `sound` is detected by the code `isset($_SESSION["sound"])`
 - The variable is set in other php files (`login.php`, `logout.php`, `buy.php`, `cart_add.php`, `cart_del.php`, `register.php`)
 - Example: `$_SESSION["sound"] = "sound_logout";`
- If the variable is set, the code will detect that whether there are any values inside it by the code `$_SESSION["sound"] != ""`

- Then, the code will detect whether the user turned on the notification or not. The decision of users stores in the local storage by the variable `sound`. To get its value, the code `let savedsound = localStorage.getItem("sound")` is used. The value then is stored in the JavaScript variable `savedsound`. If users turn on the notification, the value will be “open”, else the value will be “mute”.
- If yes (`savedsound == “open”`), the JavaScript function `Play()` will be executed, and the value of the parameter will be set to the value of the session variable `sound`. If not, the code will end without any output.

```
function Play(button) {
    let sound_path = document.getElementById(button).src;
    let audio = new Audio(sound_path);
    audio.play();
};
```

- This is the code for the JavaScript function `Play`, with a parameter `button`.
- The JavaScript variable `sound_path` stores the path of the audio file by getting the value of the “src” attribute in the element with the id of value of `button`. It is done by the code `document.getElementById(button).src`
- Another variable `audio` creates a new audio file with the link stored in the variable `sound_path` by the code `new Audio(sound_path)`
- Then, the new audio file will be play with the code `audio.play()`

10. Page scrolling

```
<button onclick="GoToTop()" id="top-button"></button>
```

- This is the code for the “To Top” button”, which is included in all the webpages
- A `<button>` tag is used to display a button, inside it an up-arrow images is included with the `` tag.
- A id of “top-button” is given to the `<button>` tag
- The JavaScript function `GoToTop()` will be execute after clicking on the button by setting the “onclick” attribute with the code `onclick="GoToTop()"`

```
function GoToTop() {
    window.scrollTo({ top: 0, behavior: 'smooth' });
};

window.onscroll = function () {Scroll()};
function Scroll(){
    let btn = document.getElementById("top-button");
    if (document.documentElement.scrollTop > 20 || document.body.scrollTop > 20){
        btn.style.display = "block";
    }else{
        btn.style.display = "none";
    }
};
```

- This is the code for two JavaScript functions `GoToTop()` and `Scroll()`
- `GoToTop()`
 - The page will back to the top smoothly after activating it by the code `window.scrollTo({top: 0, behavior: 'smooth'})`
- `Scroll()`

- To activate this function, the user needs to scroll the page first. The action is detected by the code `window.onscroll`
- The JavaScript variable `btn` is then set, storing the element with id “top-button” by the code `let btn = document.getElementById("top-button")`
- If the webpage had been scrolled 20px away from the top. This is detected by the code `if (document.documentElement.scrollTop > 20 || document.body.scrollTop > 20)`, which `||` represents “or”
- If the if statement returns true, the button mentioned previously will be shown by changing the display property to block in CSS with the code `btn.style.display = "block"`. Else, the button will be hidden by changing the display property to none with the code `btn.style.display = "none"`

11. Messages alert and redirection of page

```
?>
<script>
    alert ("Password is not correct");
    window.location.href = "../login_register/login_register.php";
</script>
<?php
}
```

- The above code is to alert messages and redirect page after some actions taken by the user
- The above code is an example from `login.php`. Similar contents appear in `register.php`, `staff_add.php`, `add.php`, `edit.php`, `delete_acc.php`, `subscribe.php`, `unsubscribe.php`, `comment_submit.php`, `reset.php`, `comment_submit.php`, `buy_submit.php`, `cart_add.php` and `cart_del.php`.
- Messages are alert by the code `alert ("XXX")`
- The webpage will redirect by the code `window.location.href = "XXX"`

12. Changing theme

```
function changeTheme() {
    let background = getComputedStyle(document.documentElement).getPropertyValue("--background");
    if (background === "black") {
        localStorage.setItem("theme", "light");
    } else {
        localStorage.setItem("theme", "dark");
    }
    window.location.reload();
};
```

- This JavaScript function `changeTheme()` is one of the parts of changing the theme of the entire website
- The current mode is sense by detecting the background colour of the current website with the code `getComputedStyle(document.documentElement).getPropertyValue("--background")`, and stores in the variable `background`

- If the value of the variable `background` equals to black, then the mode needs to turn to light mode and the variable `theme` inside local storage will be set to light with the code `localStorage.setItem("theme", "light")`. Else, the mode needs to turn to dark mode and the variable `theme` will be set to dark.
- The webpage then will reload for further actions with the code `window.location.reload()`

13. Changing language

```
function changeLang(lan){
    if (lan === "tradition_chin"){
        localStorage.setItem("language", "tradition_chin");
    }else if (lan === "eng"){
        localStorage.setItem("language", "eng");
    }else if (lan === "sim_chin"){
        localStorage.setItem("language", "sim_chin");
    }
    window.location.reload();
};
```

- This JavaScript function `changeLang()` is one part of the code to help with changing language for the website. It has a parameter `lan`, representing the language that needs to be changed to.
- If `lan` is “`traditional_chin`”, the variable `language` in local storage will set to `tradition_chin`. Similarly, if `lan` is “`eng`”, the variable `language` in local storage will set to `eng`. For `lan` equals to “`sim_chin`”, it is the same situation.
- Then, the webpage will reload for further actions.

14. Turning notification on/off

```
function changeNotification(){
    let sound = localStorage.getItem("sound");
    if (sound){
        if (sound == "mute"){
            localStorage.setItem("sound", "open");
        }else{
            localStorage.setItem("sound", "mute");
        }
    }else{
        localStorage.setItem("sound", "open");
    }
    window.location.reload();
};
```

- This JavaScript function `changeNotification()` is for turning on or turning off notifications.
- The desire of the user is stored in the variable `sound` in local storage. It is get and store in the JavaScript variable `sound`.
- If the variable `sound` does not exist, the variable `sound` in local storage will be set to “`open`”. Else, the value of the variable `sound` will be tested. If it is equal to “`mute`”, then the variable `sound` in the local storage will be set to “`open`”. Else, the variable will be set to “`mute`”.

15. Actions after reloading the page

```
window.addEventListener("load", () => {
    let savedTheme = localStorage.getItem("theme");
    if (savedTheme) {
        if (savedTheme == "dark") {
            document.documentElement.style.setProperty("--background", "black");
            .....
            if (document.getElementById("slider_dark")){
                document.getElementById("slider_dark").style.backgroundColor = "#2196F3";
            }
            if (document.getElementById('payment')){
                document.getElementById('payment').src = "../../images/dark/nav_logo/payment.png";
                if (document.getElementById('cart')){
                    document.getElementById('cart').src = "../../images/dark/nav_logo/cart.png";
                }
            }
            .....
            if (document.getElementById('del')){
                document.getElementById('del').style.color = "red";
            }
            let rightarrow = document.getElementsByClassName('right-arrow');
            for (let n=0; n<rightarrow.length; n++){
                rightarrow[n].src = "../../images/dark/right-arrow.png";
            }
            let profile = document.getElementsByClassName('profile_logo');
            for (let n=0; n<profile.length; n++){
                profile[n].src = "../../images/dark/nav_logo/profile.png";
            }
            .....
        } else {
            .....
        }
    }
    let savedLanguage = localStorage.getItem("language");
    if (savedLanguage){
        if (savedLanguage == "tradition_chin"){
            for (let n=0; n<document.getElementsByClassName('tradition_chin').length; n++){
                document.getElementsByClassName('tradition_chin')[n].style.textDecoration = "underline";
                document.getElementsByClassName('sim_chin')[n].style.textDecoration = "";
                document.getElementsByClassName('eng')[n].style.textDecoration = "";
            }
            let profile = document.getElementsByClassName('js_profile');
            if (profile){
                for (let n=0; n<profile.length; n++){
                    profile[n].innerText = "個人資料";
                }
            }
            let setting = document.getElementById('js_setting');
            let language = document.getElementById('js_language');
            let dark = document.getElementById('js_dark');
            let del = document.getElementById('del');
            if (setting){
                setting.innerText = "設定";
                language.innerText = "語言";
                dark.innerText = "深色模式";
                if (del){
                    del.innerText = "刪除帳戶";
                }
            }
        }else if (savedLanguage == "sim_chin"){
            .....
        }else if (savedLanguage == "eng"){
            for (let n=0; n<document.getElementsByClassName('tradition_chin').length; n++){
                document.getElementsByClassName('tradition_chin')[n].style.textDecoration = "";
                document.getElementsByClassName('sim_chin')[n].style.textDecoration = "";
                document.getElementsByClassName('eng')[n].style.textDecoration = "underline";
            }
        }
    }
    let savedNotification = localStorage.getItem("sound");
    if (savedNotification){
        if (savedNotification == "open"){
            document.documentElement.style.setProperty("--trans_noti", "26px");
            document.getElementById("slider_noti").style.backgroundColor = "#2196F3";
        }else{
            document.documentElement.style.setProperty("--trans_noti", "0px");
            document.getElementById("slider_noti").style.backgroundColor = "grey";
        }
    }
}
```

});

- This code is the actions after reloading the page. The reload of the page is detected by the code `window.addEventListener("load")`
- After a reload is detected, the function affecting the following aspects will be execute
 - Changing theme
 - The saved theme is got from the local storage and stores in the variable `savedtheme`
 - When the value of `savedtheme` is detected as "dark",
 - The value of root elements will change with the code `document.documentElement.style.setProperty("--XXX", "XXX")`
 - In the above code, the root element `background` is changed as an example
 - The path for the icons will change with the following code
 - For those with id instead of class name,
`document.getElementById("XXX").src = "XXX"`
 - For those with class name instead of id, the number of elements having the same class name, which can get with the code
`document.getELEMensByClassName["XXX"].length`, will be considered. Therefore, a for loop is used. The code for changing the path for the icons:
`document.getElementsByClassName["XXX"][n].src = "XXX"` which n is from 0 to the number of elements having the same class name.
 - The opposite will be happening if the value of the variable `savedtheme` is "light"
 - Changing language
 - The saved language is got from the local storage and store in the variable `savedLanguage`
 - When the value of `savedLanguage` is detected as "tradition_chin", the following changes will happen:
 - The word "繁體中文" being underlined
 - The words will turn from the original language to traditional chinese by changing the content of word from elements with particular id or class name (the method of getting the elements is the same as what the code did for changing theme). Using the code `.innerText` instead of `.src` will do it.
 - Similar situations happend when the value of `savedLanguage` is detected as "eng" or "sim_chin"

- Turning on/off notification
 - The decision of users is got from the local storage and store in the variable `savedNotification`
 - The style of the toggle box will change if “open” is detected as the value of `savedNotification`
 - The background colour of the element having the id of “slider_noti” will change to “#2196F3” with the code `document.getElementById("slider_noti").style.backgroundColor = "#2196F3"`
 - The value of the root element `trans_noti` will change to “26px”

16. Purchasing products

```

<div class="course_info">
    <div class="course_details">
        <?php
            if (!isset($_GET["ProductId"])){
                if (isset($_POST["check"])){
                    $check = $_POST["check"];
                    if (is_array($check)){
                        $product_id_list = array();
                        $product_name_list = array();
                        $product_price_list = array();

                        foreach ($check as $product_id){
                            array_push($product_id_list, $product_id);

                            $sql = "SELECT * FROM course_info WHERE course_id=$product_id";
                            $result = mysqli_query($con, $sql);
                            $row = mysqli_fetch_row($result);

                            array_push($product_name_list, $row[1]);
                            array_push($product_price_list, $row[6]);
                        }
                    }
                }
            }
            if (isset($_GET["ProductId"])){
                $sql = "SELECT * FROM course_info WHERE course_id=$product_id";
                $result = mysqli_query($con, $sql);
                $row = mysqli_fetch_row($result);

                $product_name = $row[1];
                $product_price = $row[6];
            }
        <?php
            <div class="card inline">
                <div class="course_image">
                    
                </div>
                <div class="course_info_detail">
                    <div class="inline">
                        <h2><?php echo $row[1]?></h2>
                        <h3>$<?php echo $row[6]?></h3>
                    </div>
                    <h4>by <?php echo $row[9]?></h4>
                    <h5>Date: <?php echo $row[3]?></h5>
                    <h5>Time: <?php echo $row[4]?> ~ <?php echo $row[5]?></h5>
                </div>
            </div>
        <?php
    }

```

```

        <h2><?php echo $row[1]?></h2>
        <h3>$<?php echo $row[6]?></h3>
    </div>
    <h4>by <?php echo $row[9]?></h4>
    <h5>Date: <?php echo $row[3]?></h5>
    <h5>Time: <?php echo $row[4]?> ~ <?php echo $row[5]?></h5>
</div>
<?php
}
?>
</div>
</div>

```

- The above code is used to display selected product/products in the purchase page (**buy.php**)
 - There are two methods to go to the purchase page, different number of products may need to be display in the purchase page. Therefore, the code is separated into two parts
 - Purchasing through shopping cart (**cart.php**)
 - Users can select which course to buy and can purchase multiple courses.
 - The variable **product_id_list** stores the array of product ids submitted from the cart.
 - Additional arrays are used to store other course information
 - **product_name_list** (course names)
 - **product_price_list** (course prices)
 - The variable **check** is an array storing the selected product ids. It is sent to the purchase page by the cart page using the POST method
 - If the ProductId does not exist, the code will check whether the variable **check** exist with the code **if (isset(\$_POST["check"]))**
 - If true, the variable **check** will be checked whether it is an array or not with the code **if (is_array(\$check))**
 - Then the arrays **product_id_list**, **product_name_list** and **product_price_list** are created. Every value inside the array **check** will be stored in the array **product_id_list** with the code **array_push(\$product_id_list, \$product_id)**
 - The corresponding product name and product price will be gained by running the SQL statement, storing in the variable **sql** to the connected database with the variable **product_id**. Then they will be stored into the corresponding array respectively.
 - The relevant information is then output by echoing different values from the corresponding columns in the SQL result.
 - Purchasing through product detail page (**product.php**)
 - When a user buys a product from the product detail page, the product id is sent to the purchase page by the method GET.
 - The exist of product id is detected by the code **if (isset(\$_GET["ProductId"]))**

- If it does exist, the SQL statement stored in the variable `sql` will be run and retrieves all information about the course
- The relevant information is then output by echoing different values from the corresponding columns in the SQL result.

17. Filtering courses

```

if (isset($_POST["grade"]) && isset($_POST["subject"])){
    $subject = $_POST["subject"];
    $grade = $_POST["grade"];
    if ($grade == "P1-P3"){
        $sql = "SELECT * FROM course_info WHERE (grade='P1' OR grade='P2' OR grade='P3') AND subjects='$subject'";
    }else if ($grade == "P4-P6"){
        $sql = "SELECT * FROM course_info WHERE (grade='P4' OR grade='P5' OR grade='P6') AND subjects='$subject'";
    }else if ($grade == "S1-S3"){
        $sql = "SELECT * FROM course_info WHERE (grade='S1' OR grade='S2' OR grade='S3') AND subjects='$subject'";
    }else if ($grade == "S4-S6"){
        $sql = "SELECT * FROM course_info WHERE (grade='S4' OR grade='S5' OR grade='S6') AND subjects='$subject'";
    }
}else if (isset($_POST["subject"])){
    $subject = $_POST["subject"];
    if ($subject == "all"){
        $sql = "SELECT * FROM course_info";
    }else{
        $sql = "SELECT * FROM course_info WHERE subjects='$subject'";
    }
}else if (isset($_POST["grade"])){
    $grade = $_POST["grade"];
    if ($grade == "P1-P3"){
        $sql = "SELECT * FROM course_info WHERE grade='P1' OR grade='P2' OR grade='P3'";
    }else if ($grade == "P4-P6"){
        $sql = "SELECT * FROM course_info WHERE grade='P4' OR grade='P5' OR grade='P6'";
    }else if ($grade == "S1-S3"){
        $sql = "SELECT * FROM course_info WHERE grade='S1' OR grade='S2' OR grade='S3'";
    }else if ($grade == "S4-S6"){
        $sql = "SELECT * FROM course_info WHERE grade='S4' OR grade='S5' OR grade='S6'";
    }else if ($grade == "all"){
        $sql = "SELECT * FROM course_info";
    }
}

```

- The above code is used for filtering courses
- The variable `grade` stores user's choice on grade
- The variable `subject` stores user's choice on subject
- The SQL statement for filtering grade is `SELECT * FROM course_info WHERE grade="XX" OR grade="XX" or grade="XX"`
- The SQL statement for filtering subject is `SELECT * FROM course_info WHERE subjects='$subject'`
- Users can also choose to show all of the courses, which the variable `sql` to be `SELECT * FROM course_info`

18. Sorting courses

```

<?php
.....
else if ($sort == "suitability"){

```

- The above code is used for sorting courses (with suitability)

- When the user registers his account, he is asked to input his grade and subject aimed to improve. According to the input, every user will have a suitability for each course.
- The variable `sort` stores which option user chose for the sorting
- The variable `input` stores the user's decision on the order of sorting (ascending or descending)
- The variable `row1` stores the number of result output after executing the SQL statement stored in the variable `sql1` to the connected database.
- The value of `input` will be determined as “asc” or “desc”. Moreover, if the value of `row1` equals to 0, in both of the above cases, the message “You didn't choose for the grade and subject you want to improve” will be alert. If the value of `row1` not equals to 0 (`if ($row1 != 0)`), the SQL statement will have a new value of combining the original SQL statement with “ORDER BY suitability” or “ORDER BY suitability DESC” for the cases of `input` equals to “asc” and `input` equals to “desc” respectively. The corresponding codes are `sql = sql1 . “ORDER BY suitability”` and `sql = sql1 . “ORDER BY suitability desc”` respectively.
- Then, the relevant information is then output by echoing different values from the corresponding columns in the SQL result.

19. Data validation in register form

```
function CheckSpace(form){
    let elements_text = form.querySelectorAll("input[type='text']");
    let elements_pw = form.querySelectorAll("input[type='password']");
    let elements_email = form.querySelectorAll("input[type='email']");
    let space = false;
    for (let n=0; n<elements_text.length; n++){
        if (elements_text[n].value.includes(" ")){
            space = true;
        }
    }
    for (let n=0; n<elements_pw.length; n++){
        if (elements_pw[n].value.includes(" ")){
            space = true;
        }
    }
    for (let n=0; n<elements_email.length; n++){
        if (elements_email[n].value.includes(" ")){
            space = true;
        }
    }
    if (space){
        alert ("The input fields should not have space(s)");
        window.location.reload();
    }
};
```

- This is the JavaScript function `CheckSpace(form)` used to check that whether there are any spaces in the `input` fields. It has a parameter `form` and can be used in all forms inside the website. The following will take the register form as an example.
- The JavaScript variables `elements_text`, `elements_pw` and `elements_email` stores the elements with `input` tag with the type `text`, `password` and `email` respectively. Take `elements_text` as an example,

`form.querySelectorAll("input[type='text']")` selects all elements with `<input>` tag and the “type” attribute equal to text in the `form`.

- The JavaScript variable `space` is a Boolean variable, stating that whether there are any spaces in the input fields.
- Then, the code starts to find that whether there are any spaces inside the elements with the for loops with the code `if (elements_text[n].value.includes(" ")).` (example with the variable `elements_text`)
- The message “The input fields should not have space(s)” will be alert and the webpage will reload to let users input the information again.

```
<?php
    $username = $_POST["user"];
    $email = $_POST["email"];
    $password = $_POST["pw1"];
    $repword = $_POST["repw"];
    if (isset($_POST["subjects"])){
        $subject = $_POST["subjects"];
    }
    if (isset($_POST["grade"])){
        $grade = $_POST["grade"];
    }
    $valid = True;

    $con = mysqli_connect("localhost", "root", "", "ictsba") or die(mysqli_error($con));

    $sql = "SELECT * FROM user_info WHERE email='$email'";

    $result = mysqli_query($con, $sql);
    $row = mysqli_fetch_row($result);

    $sql2 = "SELECT * FROM user_info WHERE user_name='$username'";
    $result2 = mysqli_query($con, $sql2);
    $row2 = mysqli_fetch_row($result2);

    $email_check = trim($_POST["email"]);
    if (!filter_var($email_check, FILTER_VALIDATE_EMAIL)) {
        $valid = False;
        $_SESSION["sound"] = "sound_error";
    }
    <script>
        alert ("Please enter a valid email address");
    </script>
<?php
    }

    if ($password != $repword){
        $valid = False;
    }
    <script>
        alert ("The passwords is not the same");
    </script>
<?php
    }else if (strlen($password) < 8){
        $valid = False;
    }
    <script>
        alert ("Your password should have at least eight characters");
    </script>
<?php
    }else if (!preg_match('/[A-Z]/', $password) || !preg_match('/[a-z]/', $password) || !preg_match('/[0-9]/', $password)){
        $valid = False;
        $_SESSION["sound"] = "sound_error";
    }
    <script>
        alert ("Please include at least one capital letter, one lowercase letter and one number in your password");
    </script>
<?php
}
```

```

if ($row >= 1){
    $valid = False;
    $_SESSION["sound"] = "sound_error";
?> 
    <script>
        alert ("The email has been registered");
    </script>
<?php
}

if ($row2 >= 1){
    $valid = False;
    $_SESSION["sound"] = "sound_error";
?> 
    <script>
        alert ("This username has been registered");
    </script>
<?php
}

```

- This is a part in the PHP file `register.php`, which will be execute after the “Register” button in clicked in the file `login_register.php`
- Variables
 - o The variable `username, password, repassword, email` is the username, password, repassword and email input by users in the register form respectively, which they are get by the POST method.
 - o If there the variable `subject` and `grade` are present by the POST method, they will be stored in the variable `subject` and `grade` respectively.
 - o There is also a variable `valid`, storing a Boolean variable (True or False). It states that whether the text users typed in the register form are valid or not.
 - o The variable `row` and `row2` stores the number of results outputs after executing the SQL statements stored in the variable `sql` and `sql2` respectively to the connected database.
- The variable `email` has validation after the input. The value `valid` will turn to False and the session of `sound` is set to “sound_error” when the following occurs
 - o When it is not according to the email format [`if (!filter_var($email_check), FILTER_VALIDATE_EMAIL)]`
 - o When the email has been registered [`$row >= 1`]
- Validation on `password` is undergone. The following situations will all turn the value of `valid` to False and set the session variable `sound` to “sound_error”.
 - o When the value of `password` and `repassword` is not equal. Which is tested by the code `if ($password != $repassword)`.
 - o When the password is shorter than 8 characters, tested with the code `if (strlen($password) < 8)`.
 - o When the password does not contain a capital letter and a letter and a lowercase letter, tested with `if (!preg_match('/[A-Z]/', $password) || !pref_match('/[a-z]/', $password) || !preg_match('/[0-9]/', $password))`

- There is also validation on username. When the username is registered, the value of valid will change from **True** to **False**, the session variable **sound** will be set to “**sound_error**”.
- Different messages will also be alert when the above situations happen.

20. Auto change of dropdown list content

```
function show(dropdownlist){
    let choice = dropdownlist.options[dropdownlist.selectedIndex].value;
    if (choice == "P1-P3" || choice == "P4-P6"){
        document.getElementById("m1").className = "hide";
        .....
        document.getElementById("music").className = "hide";
        document.getElementById("gs").className = "";
    }else{
        document.getElementById("m1").className = "";
        .....
        document.getElementById("music").className = "";
        document.getElementById("gs").className = "hide";
    }
};
```

- This is the JavaScript function **show(dropdownlist)** with the parameter **dropdownlist**
- The subjects can change when user select between primary grades and secondary grades
- The user's choice is saved in the variable **choice**, get by the code **dropdownlist.options[dropdownlist.selectedIndex].value**
- In order to do that, a class “**hide**” is given to elements that its content is not related to the corresponding grade chosen. The code is **document.getElementById("XX").className = “hide”**
- When the value of **choice** is equal to “P1-P3” or “P4-P6”, the element with id “**m1**”, etc, will be given the class name “**hide**”. The element with id “**gs**” ‘s class name will be removed.
- When the value of **choice** is not equal to “P1-P3” or “P4-P6”, the class name of the element with id “**m1**”, etc, will be remove. The element with id “**gs**” will be given the class name “**hide**”.
- The class name “**hide**” set the display property to “**none**”, making the elements invisible.

21. Photo preview

```
function Preview(){
    let upload = document.getElementById("btn-upload");
    let preview = document.getElementById("preview");

    let file = upload.files[0];
    if (file){
        let reader = new FileReader();
        reader.onload = function(event){
            preview.src = event.target.result;
        }
        reader.readAsDataURL(file);
    }
};
```

- The JavaScript function **Preview()** allows users to preview what photos they chose.

- The variable `upload` is the element with id “btn-upload” which is the `<input>` tag for adding file
- The variable `preview` is the element with id “preview” which is a `` tag
- The variable `file` gets the first file from the variable `upload`
- If `file` exist, a new variable `reader` is defined as a new file reader with the code `let reader = new FileReader()`
- Then, when the variable `reader` finishes loading, the following function will be undergone.
 - The “src” attribute of the variable `preview` to the result of the file uploaded
- The code `reader.readAsDataURL(file)` instructs the variable `reader` to read the file and convert it into data

22. Grouping order records

```

if (isset($_POST["grp"])){
    if ($group == "date"){
        $choice = "Purchase date";
    }
    <script>
        autoSelect("js_purchas_date");
    </script>
<?php
    }else if ($group == "course"){
        $choice = "Course ID";
    }
    <script>
        autoSelect("js_course");
    </script>
<?php
    }else if ($group == "customer"){
        $choice = "Customer ID";
    }
    <script>
        autoSelect("js_customer");
    </script>
<?php
}
if ($result = mysqli_query($con, $sql)){
    while ($row = mysqli_fetch_row($result)){
        <h4><?php echo $choice?>: &nbsp;<?php echo $row[0]?></h4>
        <?php
            if ($group == "date"){
                $sql5 = "SELECT * FROM payment_record WHERE payment_date=' $row[0] '";
            }else if ($group == "course"){
                $sql5 = "SELECT * FROM payment_record WHERE course_id=$row[0]";
            }else if ($group == "customer"){
                $sql5 = "SELECT * FROM payment_record WHERE user_id=$row[0]";
            }
            if ($result5 = mysqli_query($con, $sql5)){
                while ($row = mysqli_fetch_row($result5)){
                    <div class="card">
                        <div class="order-info">
                            <h3><span class="js_order_id">Order ID: &nbsp;</span><?php echo
                                $row[0]?></h3>
                            <h3><span class="js_order_date">Order Date: &nbsp;</span><?php echo
                                $row[1]?></h3>
                            <h3><span class="js_order_time">Order Time: &nbsp;</span><?php echo
                                $row[2]?></h3>
                        </div>
                        <div class="vr"></div>
                    <?php
                        $user_id = $row[4];
                }
            }
        }
        $sql1 = "SELECT * FROM course_info WHERE course_id=$row[3] ";
        if ($result1 = mysqli_query($con, $sql1)){
    }
}

```

```
>         while ($row1 = mysqli_fetch_row($result1)){
>             echo $row1[0]?></h3>
>             $row1[2]?>"></h3>
>             &nbsp;</span><?php echo $row1[1]?></h3>
>             &nbsp;</span><?php echo $row1[3]?></h3>
>             $HKD</span><?php echo $row1[6]?></h3>
>             <?php
>                 }
>
>                 }
>
>                 $sql2 = "SELECT * FROM user_info WHERE user_id=$user_id";
>                 if ($result2 = mysqli_query($con, $sql2)){
>                     while ($row2 = mysqli_fetch_row($result2)){
>                         echo $row2[0]?></h3>
>                         echo $row2[1]?></h3>
>                         echo $row2[3]?></h3>
>                         <?php
>                             }
>                         }
>                     }
>                 }
>
>             }
>
>         }
>
>     }
>
>     <?php
>         }
>     }
>
> ?>
```

- This is the grouping function for in the order record page shown inside the tutor page.
 - Tutors can choose to group by purchase date, course id, customer id which the decision stored in the variable `choice`.
 - For each row of result, the script will output an element with an `<h4>` element with the value of the variable `choice` and the corresponding value from the row.
 - For each row the result of the second SQL statement is based on the value of the variable group and the current row's value.
 - For every single result, a `<div>` tag with the class name “card” containing the information of the order, course and the user.
 - The corresponding elements will be displayed from the database.

23. PHP injection

```
$hashed_password = hash("sha256", $password);
```

- To prevent from the passwords user input seen by the database manager, passwords are hashed before entering it into the database
 - The code `$hashed_password=hash("sha256", $password)` is used to store the hashed password. Which the variable `password` stores the password the user input.

```

if ($row[4] == hash("sha256", $password)){
    $_SESSION["sound"] = "sound_login";
?>
<script>
    alert("Login successfully");
    window.location.href = "../HomePage/index.php";
</script>
<?php

```

- To login, the password entered by users will be hashed, then check with the value stored in the database with the codes `$row[4] == hash("sha256", $password)`.

Final Product

1. Navigation Bar



Guest:

The navigation bar for guest users is shown with its menu expanded. It includes links for Home Page, Profile, Help Center, language selection (Traditional Chinese, Simplified Chinese, English), and user status indicators (Notification bell, Message bubble).

Home Page

Profile

Help Center

繁體中文 簡體中文 English

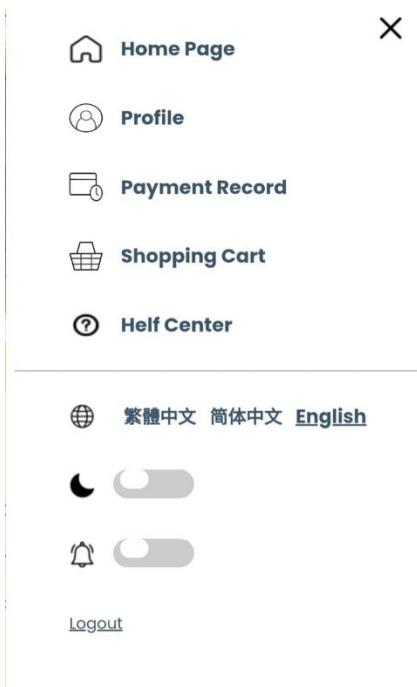
Notification bell

Message bubble

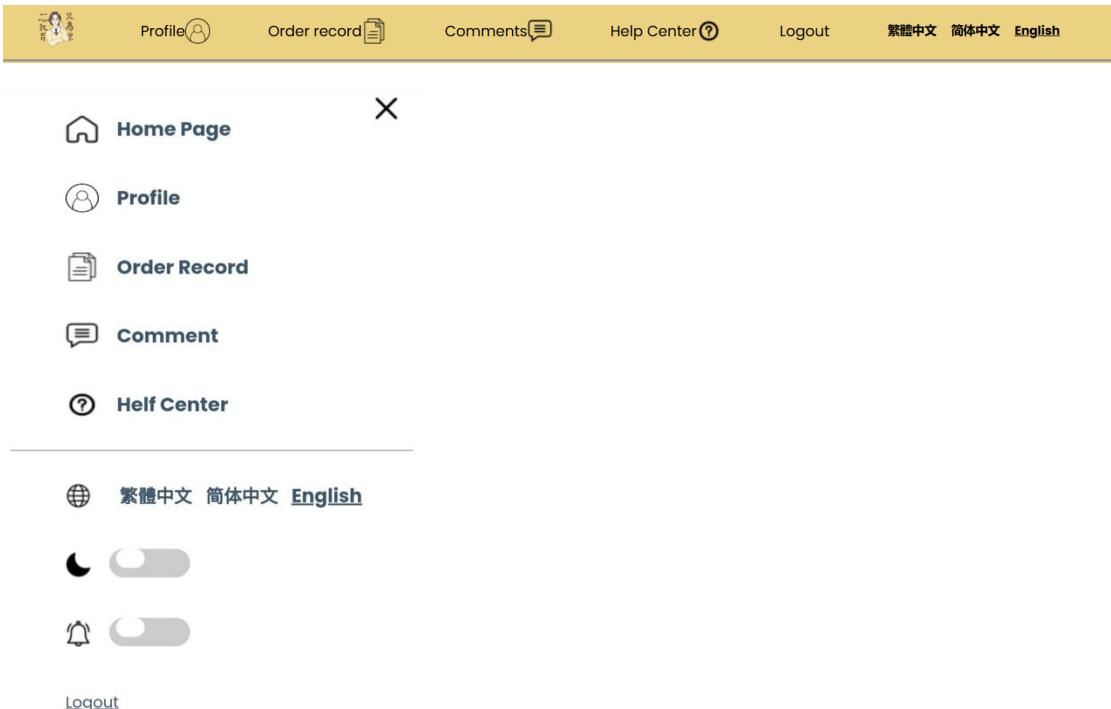
Login / sign up

Customer:



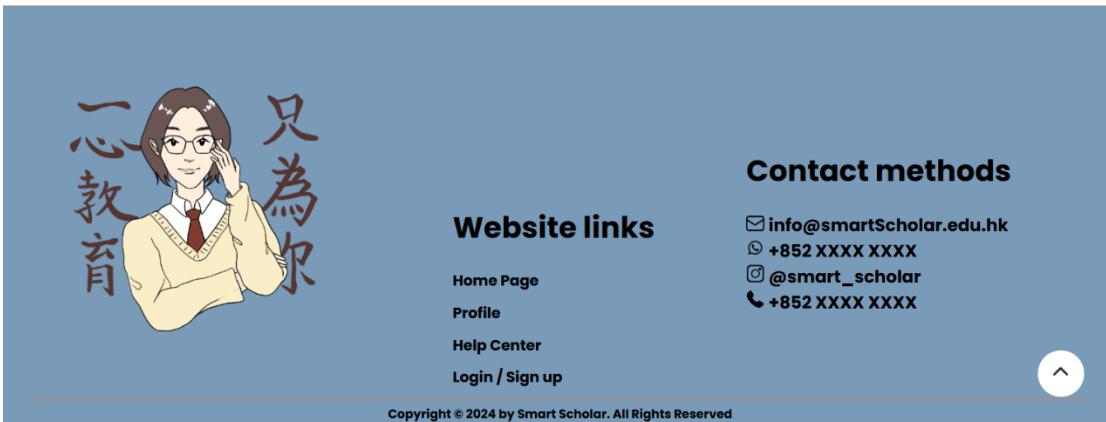


Staff:



2. Footer

Guest:

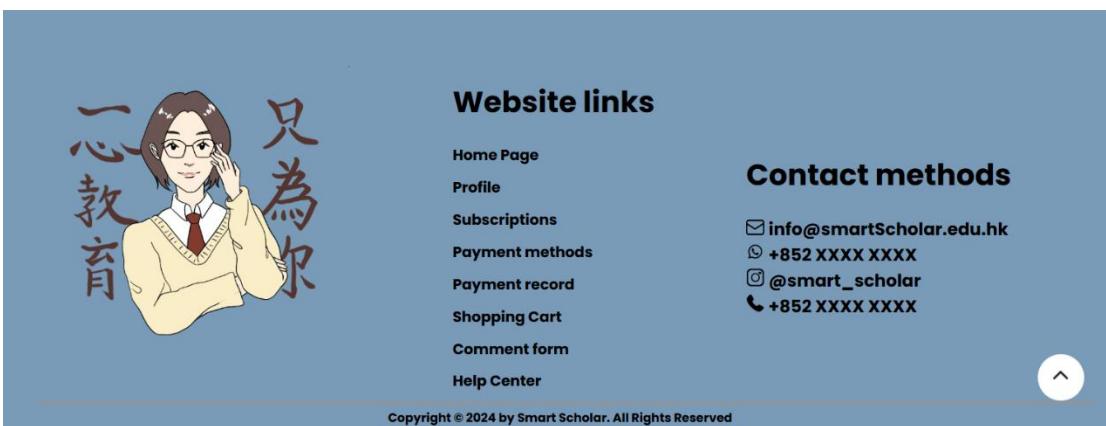


A screenshot of a mobile website for "Smart Scholar". The header features a cartoon illustration of a student boy with glasses and a yellow sweater over a white shirt, with the text "一心教育" on the left and "只為你" on the right. Below the header is a "Website links" section with links to Home Page, Profile, Help Center, and Login / Sign up. To the right is a "Contact methods" section with email (info@smartScholar.edu.hk), phone (+852 XXXX XXXX), and social media (@smart_scholar). A copyright notice at the bottom reads "Copyright © 2024 by Smart Scholar. All Rights Reserved".

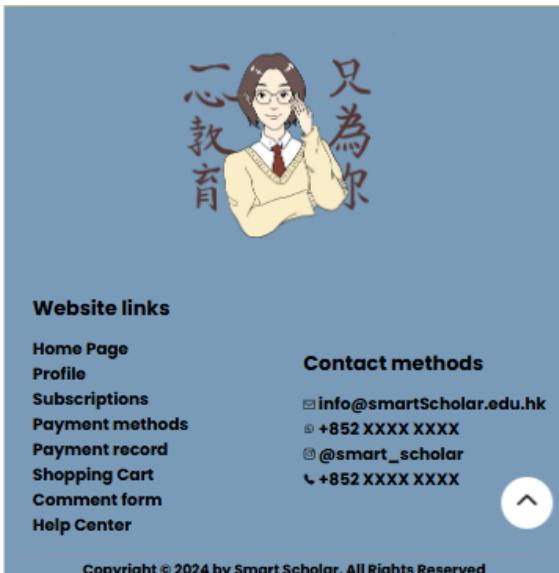


A screenshot of a mobile website for "Smart Scholar". The layout is identical to the guest version, featuring the same student illustration, "一心教育" and "只為你" text, "Website links" section, and "Contact methods" section. The copyright notice at the bottom also remains the same.

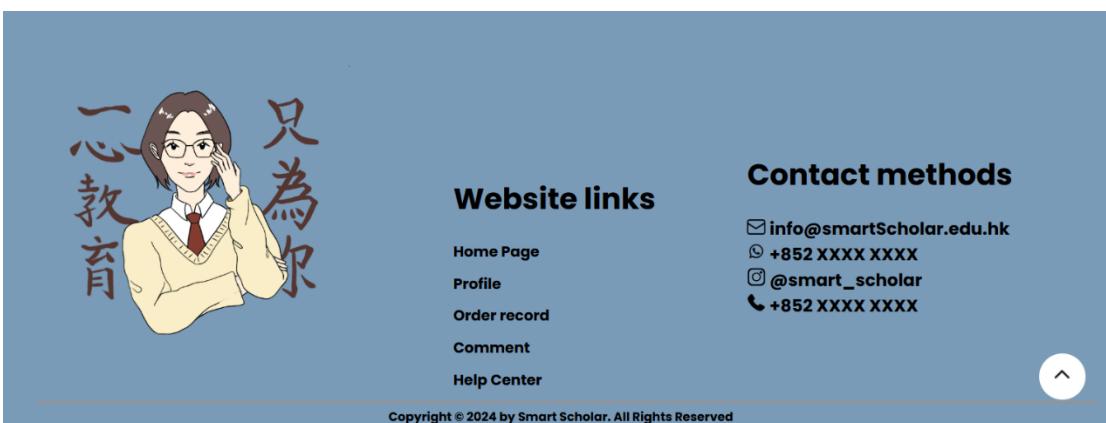
Customer:



A screenshot of a mobile website for "Smart Scholar". The layout is identical to the guest version, featuring the same student illustration, "一心教育" and "只為你" text, "Website links" section, and "Contact methods" section. The copyright notice at the bottom also remains the same.

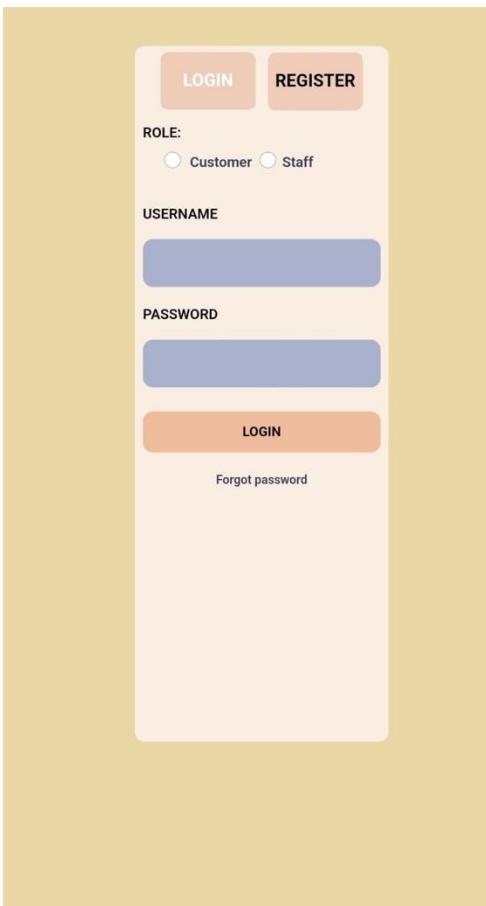
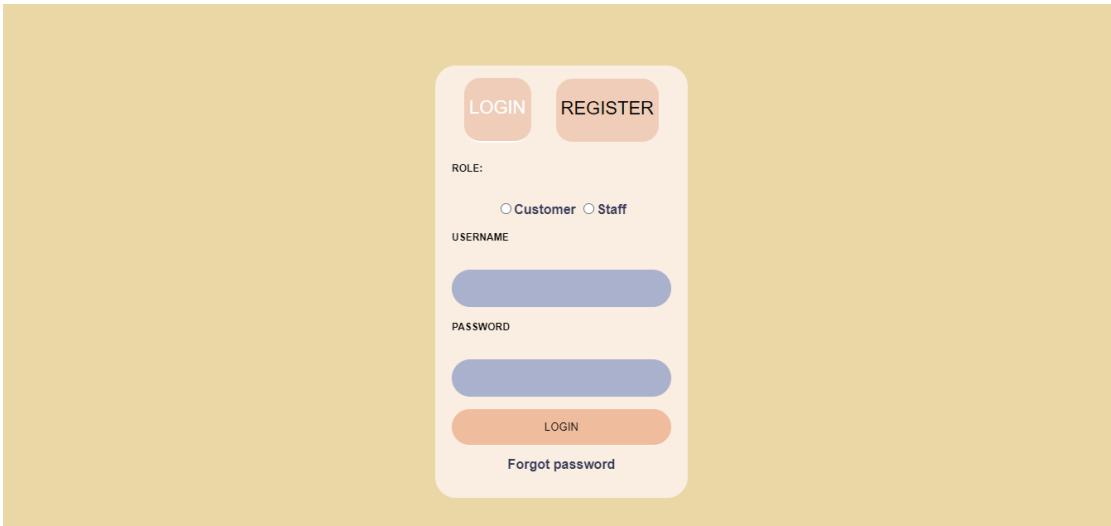


Staff:



3. Login and Register

Login:



Register:

The registration form is contained within a light blue rectangular box. At the top right are two orange rounded rectangular buttons labeled "LOGIN" and "REGISTER". Below them is a horizontal input field with the placeholder "EMAIL". Underneath is another input field with the placeholder "USERNAME". Below that is a third input field with the placeholder "PASSWORD". Below the password field is a fourth input field with the placeholder "PLEASE ENTER YOUR PASSWORD AGAIN". A vertical line separates this section from the bottom section. The bottom section contains the text "FORM:" followed by a row of six radio buttons labeled P1 through P6. Below that is another row of six radio buttons labeled S1 through S6. Underneath these rows is a dropdown menu labeled "SUBJECTS" containing three options: Chinese, English, and Mathematics. At the bottom of this section is an orange rounded rectangular button labeled "REGISTER". Below the "REGISTER" button is a link "Already Member?".

4. Home Page

Guest + Customer:

The home page features a search bar at the top with a magnifying glass icon. To its right are three dropdown menus: "grade", "subject", and "sorting". Below the search bar is a grid of four service cards, each with a blue rounded rectangular "Add to cart" button at the bottom. The cards are arranged in a 2x2 grid. The first card is titled "S5 M1" and lists the following details: Date: 2024-09-06, Time: 08:00 - 09:30, Price: HKD \$150, Tutor: tutor1. The second card is titled "S3 Eng" and lists: Date: 2024-12-25, Time: 08:00 - 10:00, Price: HKD \$400, Tutor: tutor1. The third card is titled "P1 Maths" and lists: Date: 2024-11-01, Time: 09:00 - 10:00, Price: HKD \$180, Tutor: tutor2. The fourth card is titled "P5 Chin" and lists: Date: 2024-08-09, Time: 10:00 - 11:00, Price: HKD \$100, Tutor: tutor1. In the bottom right corner of the grid area is a small circular icon with a white upward-pointing arrow.



grade subject sorting

S5 M1 Date: 2024-09-06 Time: 08:00 - 09:30 Price: HKD \$150 Tutor: tutor1 Buy	S3 Eng Date: 2024-12-25 Time: 08:00 - 10:00 Price: HKD \$400 Tutor: tutor1 Buy
P1 Maths Date: 2024-11-01 Buy	P5 Chin Date: 2024-08-09 Buy

Staff:

Buy	Buy	Buy	Buy
S3 Chinese Date: 2024-12-02 Time: 08:00 - 08:09 Price: HKD \$9 Tutor: tutor1 Buy	S6 Maths Date: 2024-11-02 Time: 08:00 - 09:00 Price: HKD \$90 Tutor: tutor1 Buy	S5 ICT Date: 2024-10-28 Time: 08:00 - 09:00 Price: HKD \$100 Tutor: tutor1 Buy	+

Date: 2024-12-02

Time: 08:00 ~ 08:09

Price: HKD \$9

Tutor: tutor1

[Buy](#)

Date: 2024-11-02

Time: 08:00 ~ 09:00

Price: HKD \$90

Tutor: tutor1

[Buy](#)

S5 ICT

Date: 2024-10-28

Time: 08:00 ~ 09:00

Price: HKD \$100

Tutor: tutor1

[Buy](#)

5. Product detail page

Guest + Customer + Staff:

S6 ICT

★★★★★

Date: 2024-09-01

Time: 08:00 ~ 08:30

Tutor: tutor1

Category: S6 ICT

Price: HKD \$50

[Buy](#)

[Add to cart](#)

Review



S6 ICT 

★★★★★

Date: 2024-09-01
Time: 08:00 ~ 08:30
Tutor: tutor1
Category: S6 ICT
Price: HKD \$50

[Buy](#)

Review

★★★★★
user123
2024-10-30

★★★★★
good

6. Edit course page

Staff:

Edit Course

Click to upload the image for the course



Course Name
S6 ICT

Date
01/09/2024

Starting Time
08 : 00 am

Ending Time
08 : 30 am

Price
50

Category
--grade-- ----- subject -----

Update Delete course

Edit Course

Click to upload the image for the course



Course Name
S6 ICT

Date
09/01/2024

Starting Time
08:00 AM

Ending Time
08:30 AM

Price
50

Category

7. Add course page

Staff:

New Course

Click to upload the image for the course

Course Name

Date

Starting Time

Ending Time

The screenshot shows a user interface for creating a new course. At the top, there is a yellow header bar containing fields for 'Price' (a horizontal slider), 'Category' (two dropdown menus for 'grade' and 'subject'), and a blue 'Add' button. Below the header is a pink dashed-bordered box labeled 'New Course'. Inside this box, there is a placeholder text 'Click to upload the image for the course'. Below the placeholder are several input fields: 'Course Name' (text input), 'Date' (date input with a calendar icon), 'Starting Time' (time input with a clock icon), 'Ending Time' (time input with a clock icon), 'Price' (text input), and 'Category' (two dropdown menus for 'grade' and 'subject'). A blue 'Add' button is located at the bottom right of the pink box.

Price

Category
--grade-- subject

Add

New Course

Click to upload the image for the course

Course Name

Date
mm/dd/yyyy

Starting Time

Ending Time

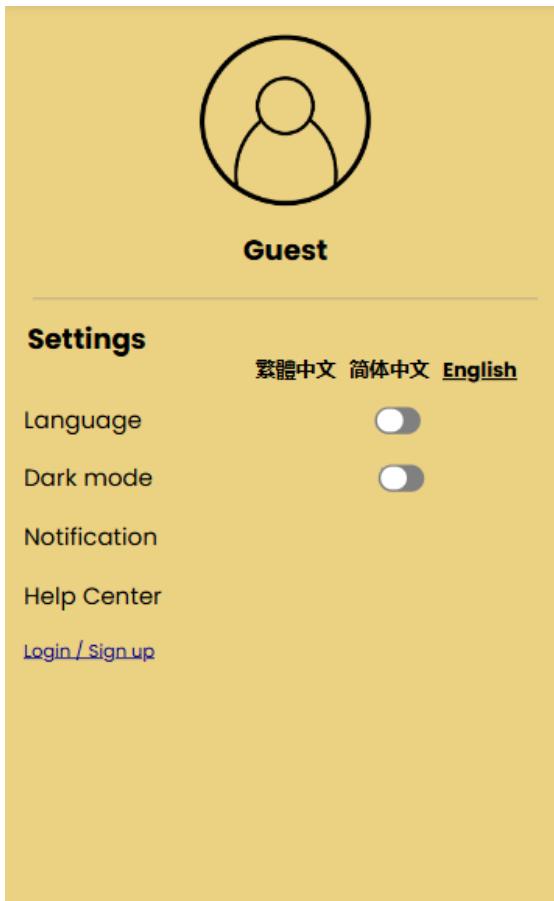
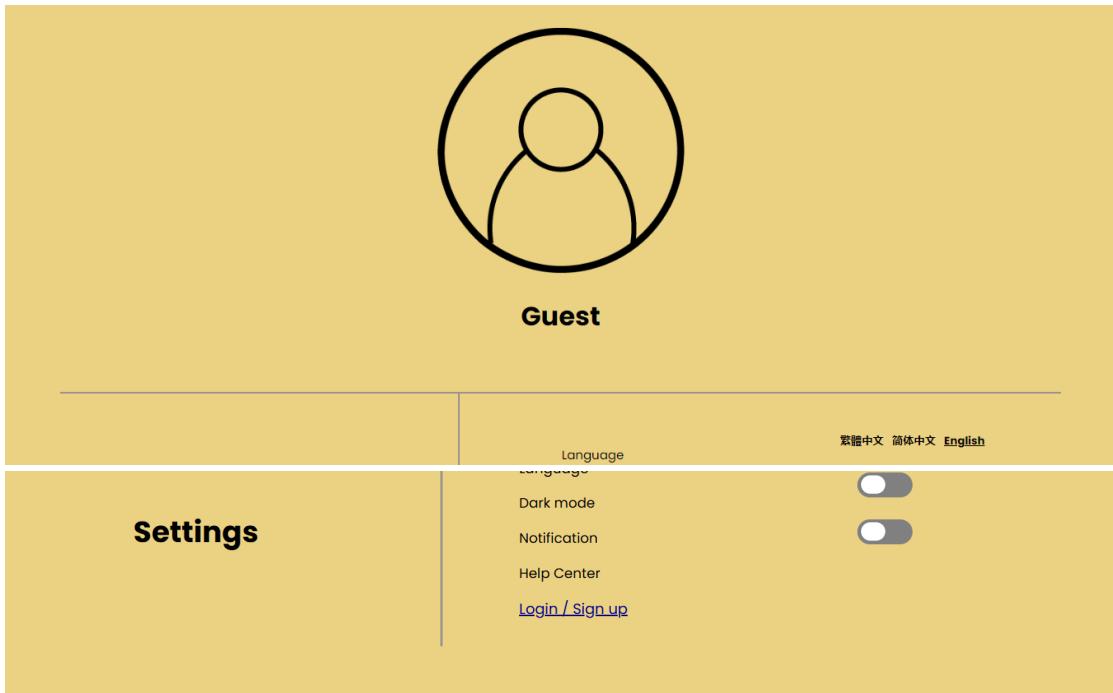
Price

Category
grade subject

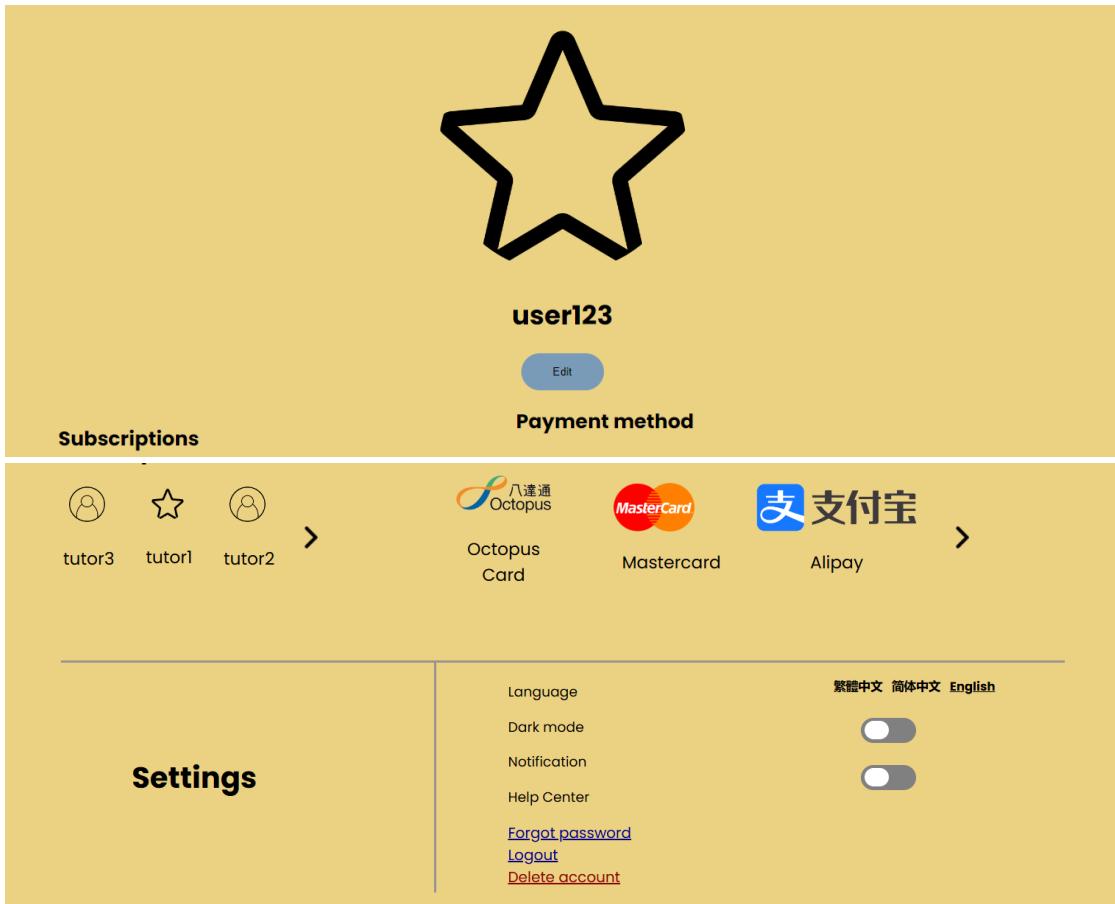
Add

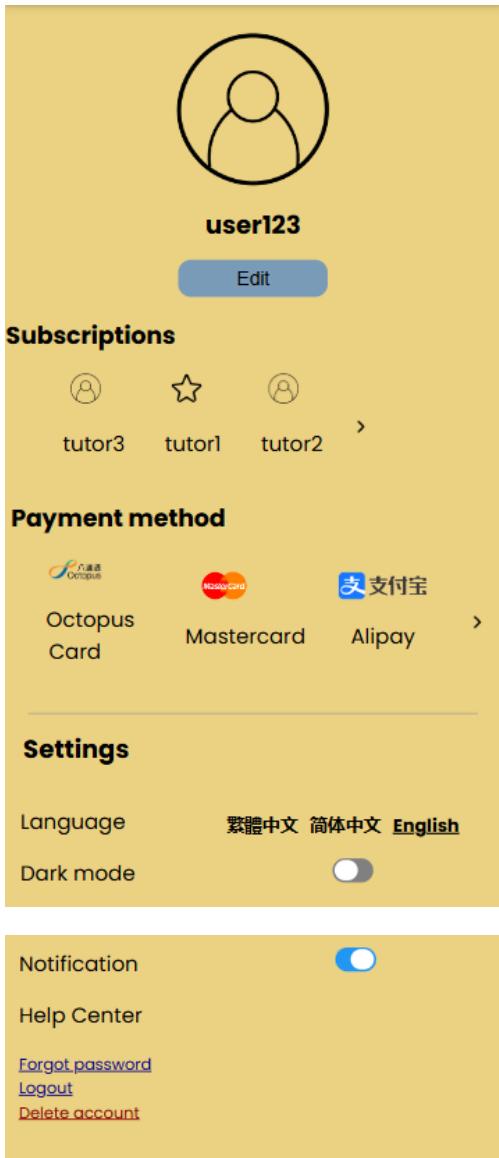
8. Profile page

Guest:



Customer:





Staff:



tutor1

tutor no:1

Edit

Description

I must be able to get 30 marks for my best 5 in dse

Edit

Settings

Language

繁體中文 簡體中文 English

Dark mode



Notification



Help Center

[Forgot password](#)

[Logout](#)



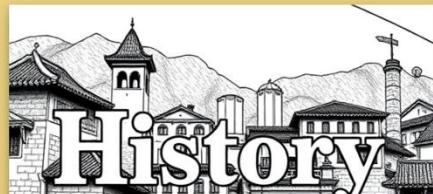
P3 Eng

Date: 2024-01-07

Time: 16:00 ~ 17:00

Category: [P3 Eng](#)

Price: \$70

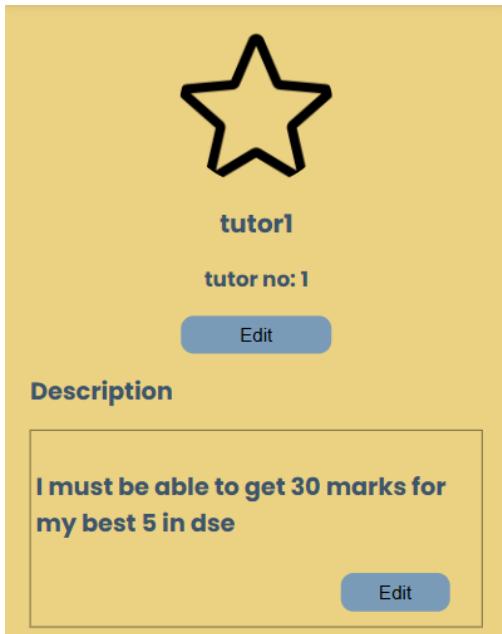


S4 Hist

Date: 2024-01-07

Time: 15:00 ~ 17:00





P3 Eng

Date: 2024-01-07

Time: 16:00 ~ 17:00

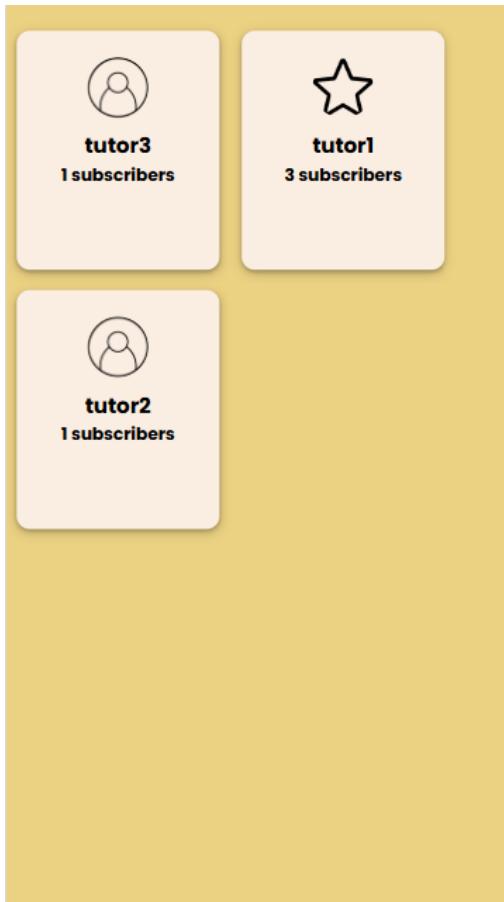
Category: P3 Eng

Price: \$70

9. Subscription page

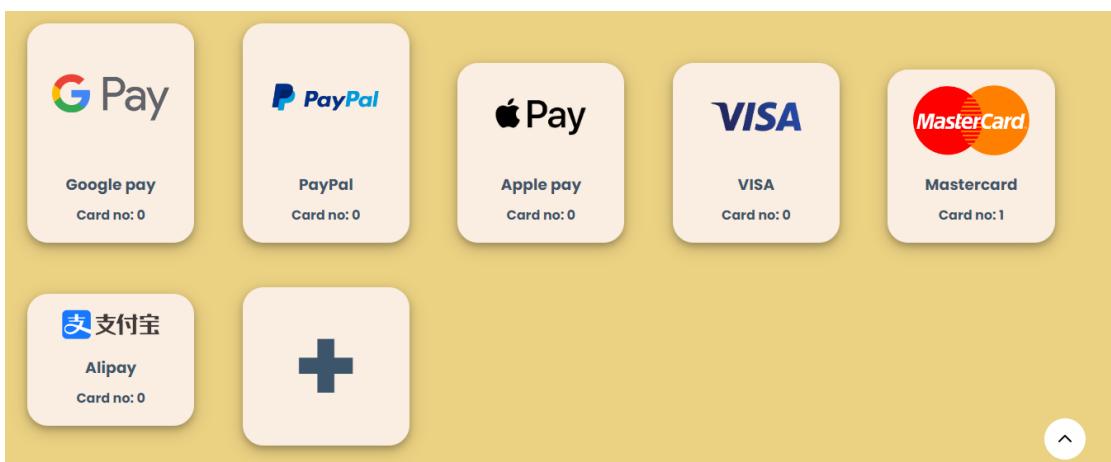
Customer:

 tutor3 1 subscribers	 tutor2 1 subscribers	 tutor1 2 subscribers
--	--	--



10. Payment method page

Customer:





11. Add payment method page

Customer:

Adding payment method

Payment Method

Octopus Card PayMe Alipay Mastercard
 PayPal Apple pay Google pay Samsung pay
 VISA

additional information (please type '0' for nothing)

Submit

Adding payment method

Payment Methods

Octopus Card PayMe Alipay Mastercard
 PayPal Apple pay Google pay Samsung
pay VISA

additional information (please type '0' for nothing)

Submit

12. Edit profile page

Customer:

Name
user123

Email Address
eemail@email.com

Current password

New password

Re-enter new password

Grade
----- grade -----

Subject(s)
----- subject -----

Change



Name
user123

Email Address
eeemail@email.com

Current password

New password

Re-enter new password

Grade

Subject(s)

Change

Staff:



Name
tutor1

Email Address
google@google.com

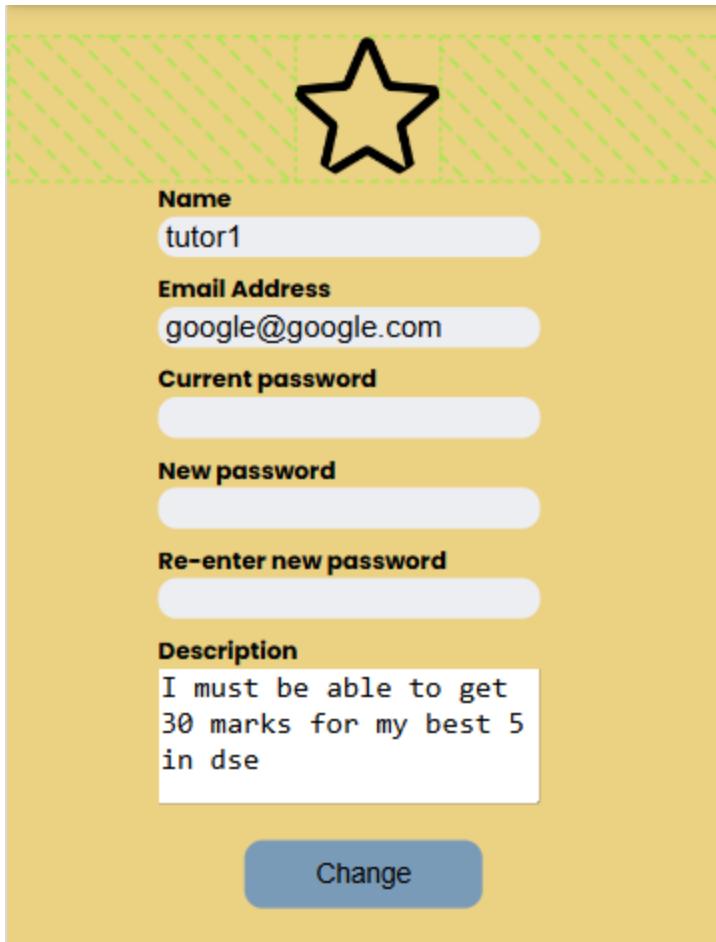
Current password

New password

Re-enter new password

Description
I must be able to get 30 marks for my best 5 in dse

Change



13. Payment record page

Customer:

----- sorting ----- ▾



S6 ICT
\$50

★★★★★

Order ID: 23
Order Date: 2024-10-15
Order Time: 11:13



S5 M1
\$150

★★★★★

Order ID: 25
Order Date: 2024-10-18
Order Time: 15:25

sorting ▾



S6 ICT
\$50

★★★★★

Order ID: 23
Order Date:
2024-10-15
Order Time:
11:13



S5 M1
\$150

★★★★★

Order ID: 25
Order Date:
2024-10-18
Order Time:
15:25



S6 English
\$500

★★★★★

Order ID: 26
Order Date:
2024-10-18
Order Time:
15:26

 **P1 Maths** Order ID: 36

14. Order record page

Staff:

Please enter a course ID Course ---Grouping---

<p>Order ID: 23 Order Date: 2024-10-15 Order Time: 11:13</p>	<p>Course ID: 28</p> <p>Course Name: S6 ICT Course Date: 2024-09-01 Course price: \$HKD50</p>	<p>User ID: 6 Username: user123 Email: eemail@email.com</p>
<p>Order ID: 24 Order Date: 2024-10-16 Order Time: 18:28</p>	<p>Course ID: 28</p> <p>Course Name: S6 ICT Course Date: 2024-09-01 Course price: \$HKD50</p>	<p>User ID: 60 Username: sbaishard Email: email5@email.com</p>

---Filtering--- - ---Grouping---

<p>Order ID: 23 Order Date: 2024-10-15 Order Time: 11:13</p>	<p>Course ID: 28</p> <p>Course Name: S6 ICT Course Date: 2024-09-01 Course price: \$HKD50</p>	<p>User ID: 6 Username: user123 Email: eemail@email.com</p>
<p>Order ID: 24 Order Date: 2024-10-16 Order Time: 18:28</p>		

15. Shopping cart page

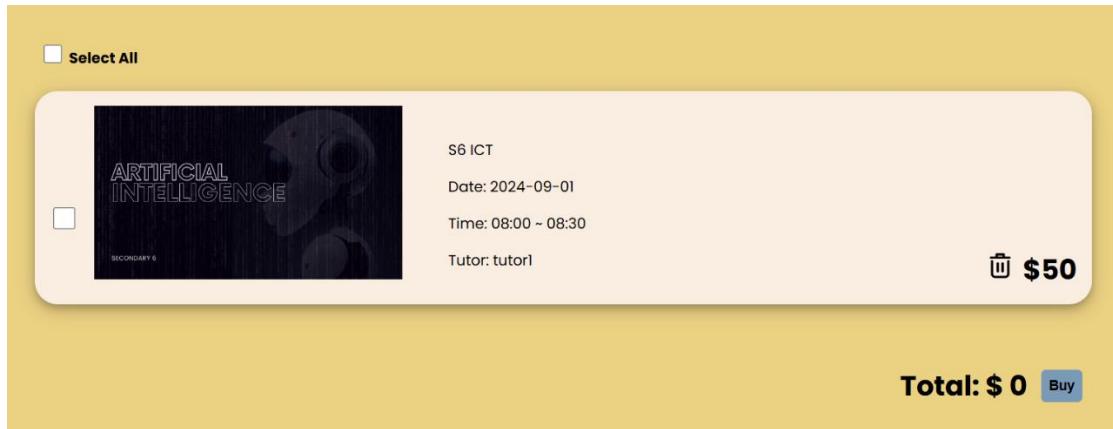
Customer:



No records found



No records found



16. Purchase page

Customer:



S6 ICT **\$50**

by tutor1
Date: 2024-09-01
Time: 08:00 ~ 08:30



S1 ICT **\$50**

by tutor1
Date: 2024-09-01
Time: 09:00 ~ 09:30

Payment Method

Mastercard

PayMe

PayPal

S6 ICT 50 S1 ICT 50

Total: \$100

Pay



S6 ICT **\$50**

by tutor1
Date: 2024-09-01
Time: 08:00 ~ 08:30



S1 ICT **\$50**



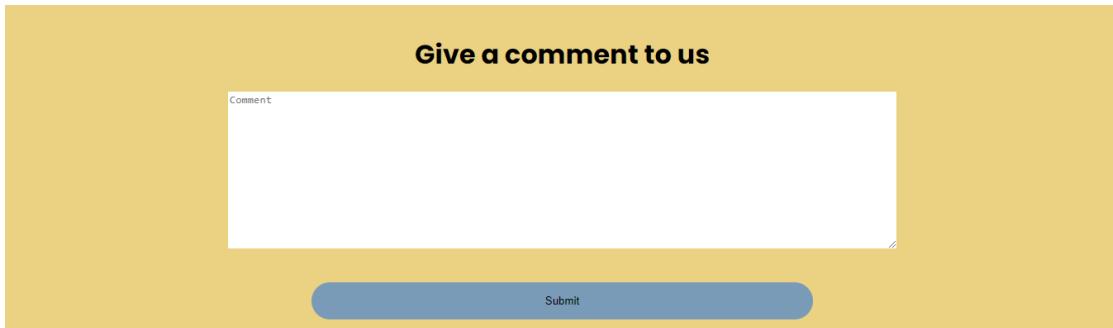
17. Comment Page

Customer:

Give a comment to us

Comment

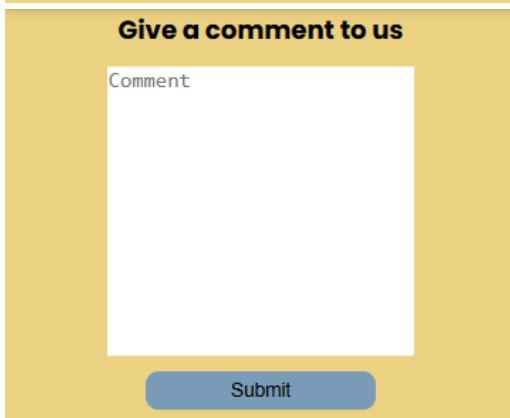
Submit



Give a comment to us

Comment

Submit



Staff:

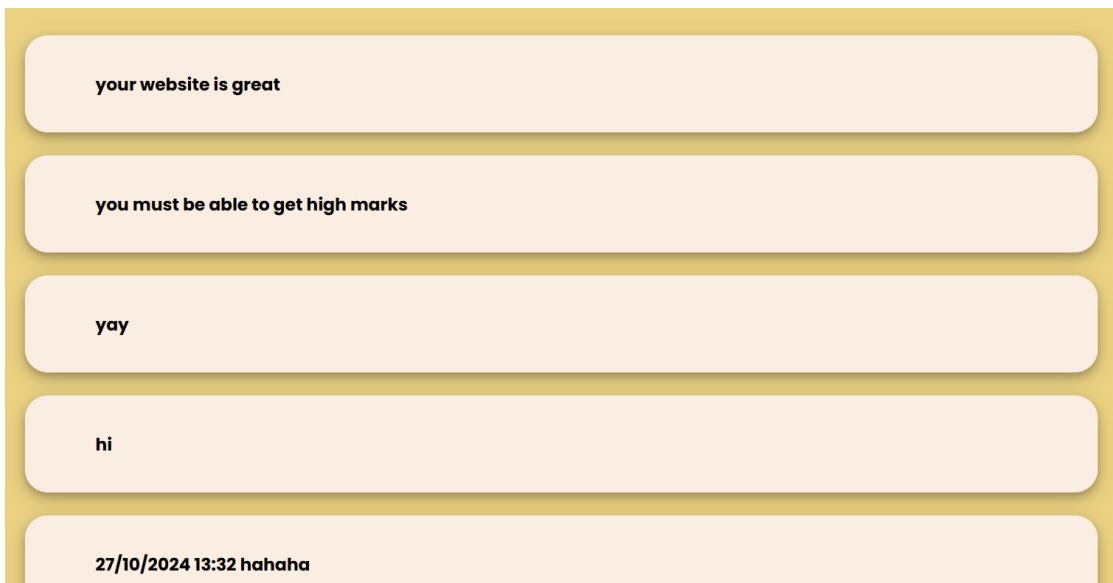
your website is great

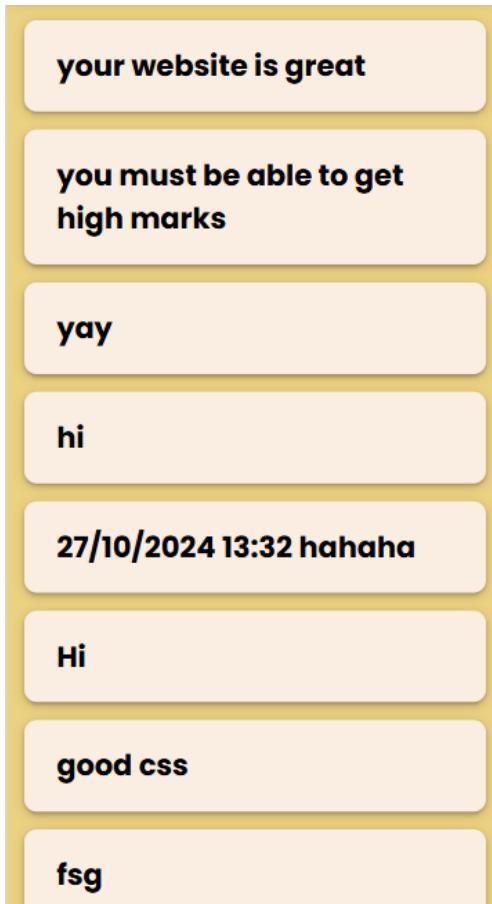
you must be able to get high marks

yay

hi

27/10/2024 13:32 hahaha





18. Help Center

Guest + Customer + Staff:

The screenshot shows the 'Help Center' interface. On the left, there's a sidebar with links: 'Quick Start', 'Account' (which is highlighted with a grey background), 'Payment', and 'Order Inquiries'. The main content area has a yellow header 'Help Center'. Below it, under the 'Account' section, there are two expandable sections: 'Update personal information' and 'Cancel subscriptions'. Both sections contain descriptive text and a link to edit personal information or cancel subscriptions. There are also sections for 'Trouble logging in your account' and 'Delete account', each with a plus sign to expand.

Quick Start ▾

Account

Payment

Order Inquiries

Why can't purchase our course -

you need to register for an account before you buy our lessons

How to purchase our courses -

You could either buy it in the "shopping cart" page or click the "buy" button in the product details page

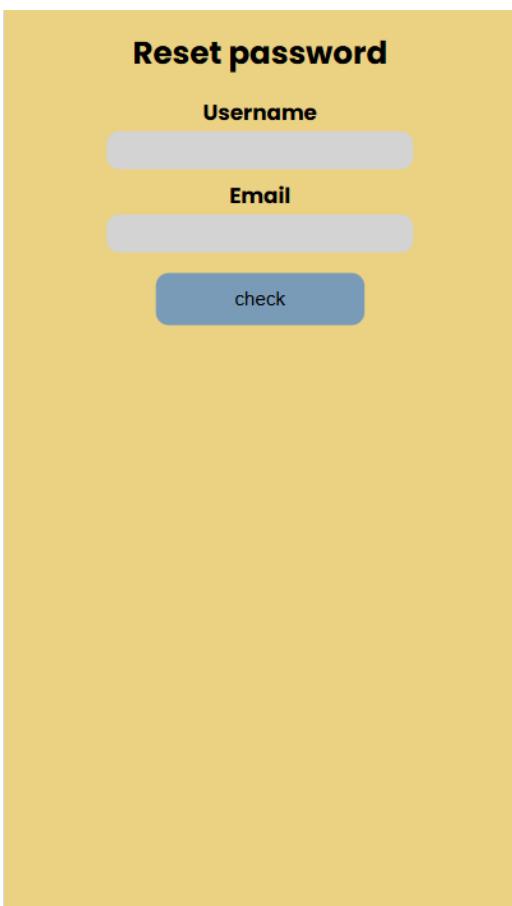
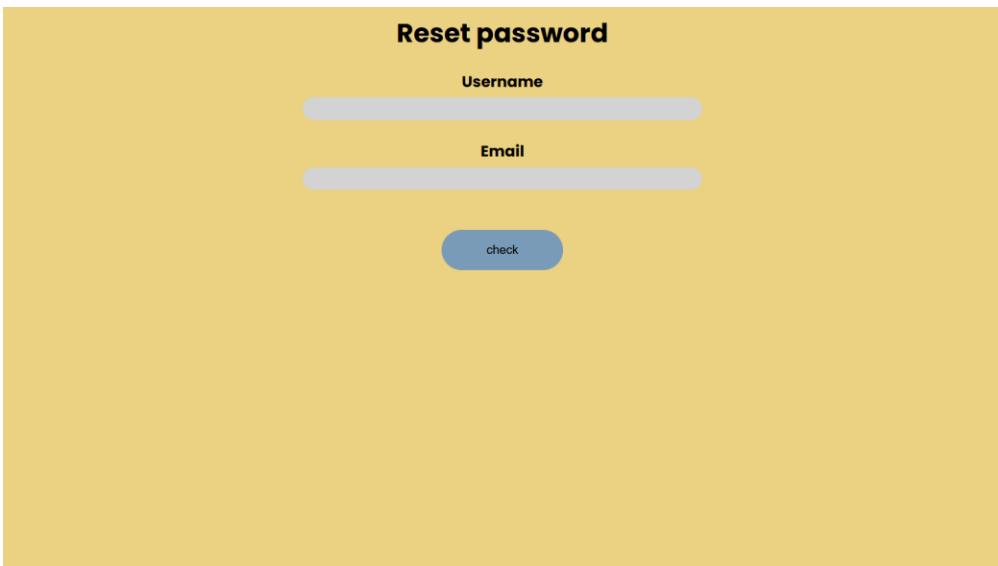
What functions you can use +

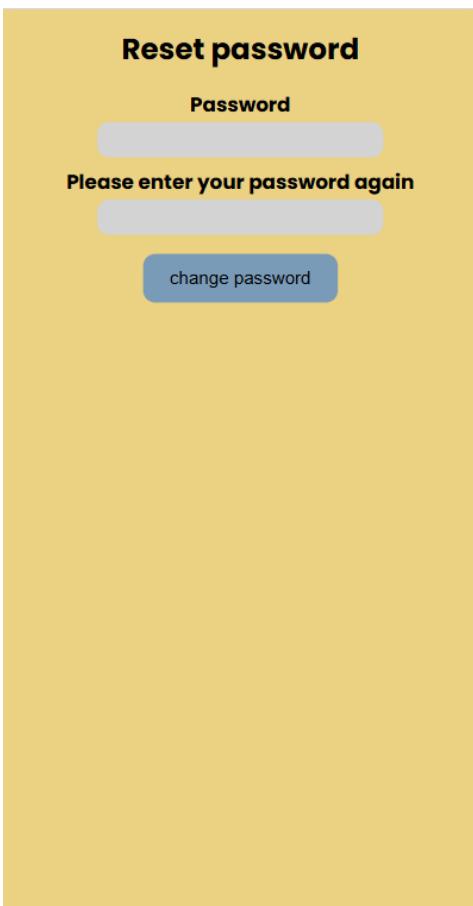
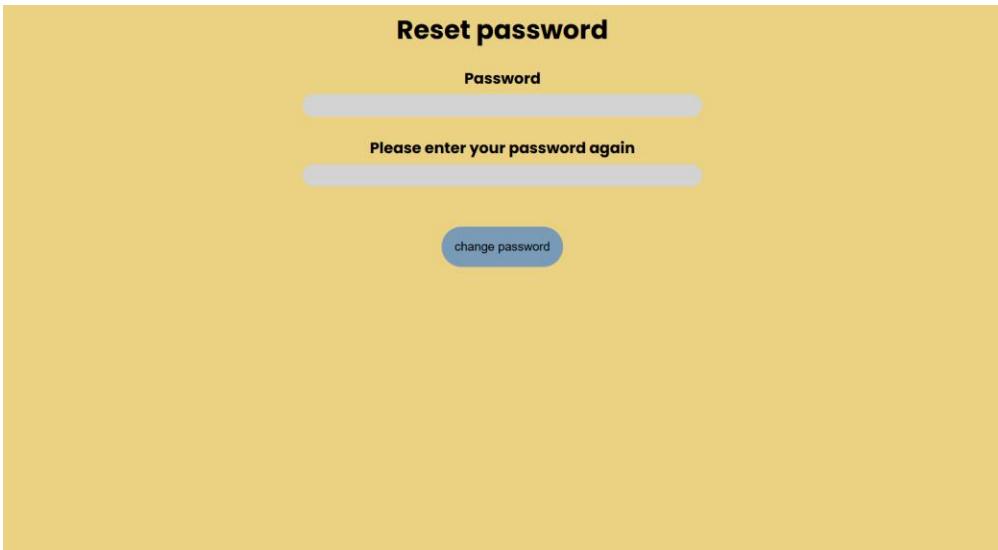
What if you find some more other questions +

What if you want to know more about us +

What if you give some comments to us +

19. Forgot password



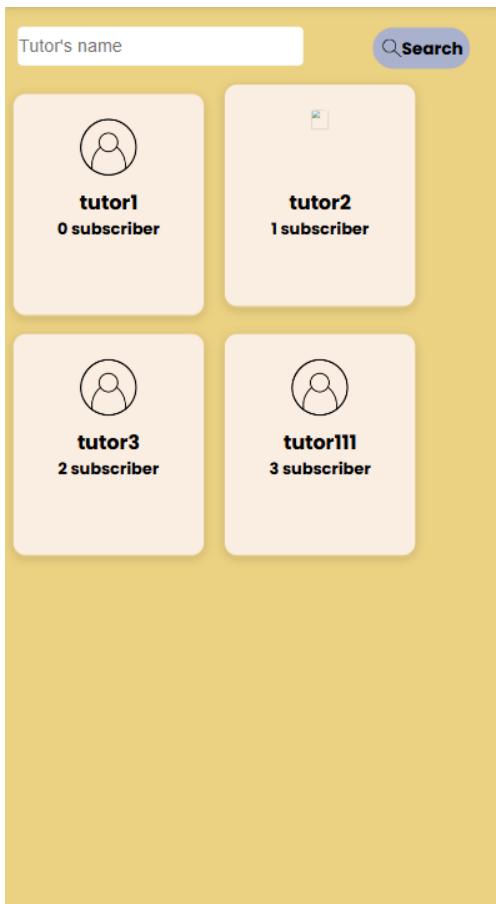


20. Courses Page

A screenshot of a web-based course search interface. At the top, there are four dropdown menus: 'grade' (set to 'Day'), 'subject' (set to 'Course ID'), 'Tutor' (empty), and a date input field ('mm/dd/yyyy'). To the right of these is a blue 'Search' button with a magnifying glass icon. Below the search bar is a grid of course cards. The first row contains four cards: 'S5 M1', 'S3 Eng', 'P1 Maths', and 'P5 Chin'. Each card displays course details: S5 M1 (Date: 2024-09-06, Time: 08:00 - 09:30, Price: HKD \$150, Tutor: tutor1), S3 Eng (Date: 2024-12-25, Time: 08:00 - 10:00, Price: HKD \$400, Tutor: tutor1), P1 Maths (Date: 2024-11-01, Time: 09:00 - 10:00, Price: HKD \$180, Tutor: tutor2), and P5 Chin (Date: 2024-08-09, Time: 10:00 - 11:00, Price: HKD \$100, Tutor: tutor1). Each card has a blue 'Buy' button at the bottom. The second row contains two cards: 'S6 ICT' and 'P3 Eng', both of which are currently unavailable (indicated by a light orange background).

A screenshot of a web-based course search interface, similar to the one above but with different search parameters. The search bar includes dropdowns for 'grade' (set to 'Day'), 'subject' (empty), 'Tutor' (empty), and a date input field ('mm/dd/yyyy'). Below the search bar is a grid of course cards. The first row contains two cards: 'S5 M1' and 'S3 Eng'. The second row contains two cards: 'P1 Maths' and 'P5 Chin'. Each card displays course details: S5 M1 (Date: 2024-09-06, Time: 08:00 - 09:30, Price: HKD \$150, Tutor: tutor1), S3 Eng (Date: 2024-12-25, Time: 08:00 - 10:00, Price: HKD \$400, Tutor: tutor1), P1 Maths (Date: 2024-11-01, Time: 09:00 - 10:00, Price: HKD \$180, Tutor: tutor2), and P5 Chin (Date: 2024-08-09, Time: 10:00 - 11:00, Price: HKD \$100, Tutor: tutor1). Each card has a blue 'Buy' button at the bottom.

21. Tutors Page



Testing

Testing

1. General

Testing items	Expected result	Testing result	
		Computer	Phone
Showing navigation bar	Navigation bar showing on the top of every single page	✓	✓
	Fixed position of the navigation bar	✓	✓
Showing footer	Footer showing after the content of every page	✓	✓
“To top” button	Displaying the button	✓	✓
	Smoothly scroll to top after clicking	✓	
Changing of language	Underlining selected language	✓	
	Changing language in all pages	✓	
Changing of theme	Changing colour of background in all pages	✓	
	Changing colour of words in all pages	✓	
	Changing colour of icons in all pages	✓	
Normal design	Most words in black for both light and dark mode	✓	
	Background colour in “#ebd182” for light mode, background colour in black in dark mode	✓	✓
	Footer background colour in “#7a9bb8” for both light and dark mode	✓	✓
	Background colour of cards in “#faede1” for both light and dark mode	✓	✓
	Box shadow colour in “rgba(0, 0, 0)” for light mode, in “rgba(235, 209, 130)” for dark mode	✓	✓
	“To top” button showing in the bottom right corner of the entire page	✓	✓

2. Navigation Bar and Footer

Testing items	Expected result	Testing result	
		Computer	Phone
Navigation Bar			
Pages linking	Pages redirect	✓	
Changing between Login and Logout	“Login” shown when not login	✓	
	Page direct to login page when “Login” is shown	✓	
	“Logout” shown when login	✓	

	Page direct to Home Page when “Logout” is shown	✓	
Changing settings	Changing theme	---	✓
	Turning on / off notification	---	✓
	Changing language	✓	✓
Normal design	Change of background colour after hovering	✓	---
	Even gap between each part	✓	---
	Burger menu icon and shop name with icon shown initially	---	✓
	Cross icon and burger menu shown after clicking on burger icon	---	✓
	Icons shown only originally, when navigation bar is hovered, the words are shown	✓	---
Footer			
Pages linking	Pages redirect	✓	
Showing contact information	Different contact information shown	✓	
Normal design	Shop logo, contact method and website links showing in a line	✓	---
	Website links and contact method is in a line while shop logo is in a different line with them	---	✓

3. Login and Register Page

Testing items	Expected result	Testing result	
		Computer	Phone
Login + Register			
Changing pages	Login Tab shown when the “Login” button is clicked	✓	
	Register Tab shown when the “Register” button is clicked	✓	
Normal design	Both login tab and register tab showing in the middle of the entire page	✓	✓
	Input fields for username and password for login tab	✓	
	Input fields for username, email, passwords, expected subject, grade for register tab	✓	
	Button for switching between login tab and register tab	✓	
Login			
Messages alert	Message shown when successfully login	✓	

	Message shown when the password is wrong	✓
	Message shown when the username input doesn't exist	✓
Login	Session starts for user id	✓
	Direct back to Home Page when success	✓
	Sound effect	✓
“Forgot password” button	Directing to “Reset password” page	✓
Register		
Messages alert	Message shown when successfully register	✓
	Message shown when the re-enter password is not as same as the previous password enter	✓
	Message shown when the email being used	✓
	Message shown when the username being used	✓
	Message shown when the length of password is not enough	✓
	Message shown when the password is not in format	✓
	Message shown when the email is not in format	✓
Register	Direct back to the login tab when success	✓
	Adding information in database table “user_info”	✓
	Sound effect	✓
“Already member” button	Direct back to the login tab	✓

4. Reset password Page

Testing items	Expected result	Testing result	
		Computer	Phone
“check” button	Direct to next page when success	✓	
	Message shown when the email and username doesn't match or don't exist		✓
“update password” button	Direct to login page when success	✓	
	Updating information in database table “user_info”		✓

Normal design	The form for inputting username and email with the title of “Reset Password” is shown originally with the “check” button	✓	✓
	After the “check” button is successfully activated, the input field will turn to inputting the new passwords. Furthermore, the “check” button will turn into “change password” button	✓	✓

5. Home Page

Testing items	Expected result	Testing result	
		Computer	Phone
Customer			
Filtering function	Filter with grade	✓	
	Filter with subject	✓	
Sorting function	Sort with tutor	✓	
	Sort with popularity	✓	
	Sort with suitability	✓	
	Sort ascending and descending	✓	
“Add to cart” button	Adding information in database table “cart_info”	✓	
	Direct to cart page	✓	
	Sound effect	✓	
Onclick function	Direct to product detail page for every page	✓	
Displaying products	Displaying a card for every product	✓	✓
Normal design	Banners on the top, arrows to control	✓	✓
	Select boxes for filtering and sorting (popularity, suitability, tutor)	✓	✓
	Cards for each course, showing the course name, date, time and tutor. Also, the “Add to cart” button	✓	✓
Guest			
Filtering function	Filter with grade	✓	
	Filter with subject	✓	
Sorting function	Sort with tutor	✓	
	Sort with popularity	✓	
	Sort ascending and descending	✓	
“Buy” button	Direct to login page	✓	
Onclick function	Direct to product detail page for every page	✓	

Displaying courses	Displaying a card for every product	✓	✓
Normal design	Banners on the top, arrows to control	✓	✓
	Select boxes for filtering and sorting (popularity)	✓	✓
	Cards for each course, showing the course name, date, time and tutor. Also, the ‘Buy’ button	✓	✓
Staff			
Filtering function	Filter with grade	✓	
	Filter with subject	✓	
Sorting function	Sort with tutor	✓	
	Sort with popularity	✓	
	Sort ascending and descending	✓	
‘Buy’ button	Direct to login page	✓	
Onclick function	Direct to product detail page for every page	✓	
Displaying courses	Displaying a card for every product	✓	
Button for adding course	Direct to add product page	✓	
Normal design	Banners on the top, arrows to control	✓	✓
	Select boxes for filtering and sorting (popularity)	✓	✓
	Cards for each course, showing the course name, date, time and tutor. Also, the ‘Buy’ button	✓	✓

6. Product Detail Page

Testing items	Expected result	Testing result	
		Computer	Phone
Guest			
Product detail display	Displaying product details (course image, name, date, time, rating, tutor, category)	✓	✓
‘Buy’ button	Direct to login page	✓	✓
Button to view tutor’s profile	A magnifying icon is shown to direct to tutor profile	✓	✓
Displaying reviews	Display all reviews for the specific course	✓	✓
	Each review contains the date that the comment was given, the name of the user, the comment and rating given by the user	✓	

Normal design	Course image displays on the left-hand side. Course information displays on the right-hand side.	✓	✓
	Larger font and different font colour for the course title	✓	✓
	“Buy” button with different background colour	✓	✓
	Reviews displaying for each course with username, user's profile picture, the date given the comment, the rating and the comment its own	✓	✓
	Underlined tutor name and a magnifier shown on the right-hand side of the name to show that it is able to click on	✓	✓
Customer			
Product detail display	Displaying product details	✓	✓
“Add to cart” button	Direct to cart page	✓	✓
	Adding information in database table “course_info”	✓	✓
	Sound effect	✓	✓
“Buy” button	Direct to purchase page	✓	✓
	Sound effect	✓	
Button to view tutor's profile	A magnifying icon is shown to direct to tutor profile	✓	✓
Displaying reviews	Display all reviews for the specific course	✓	✓
	Each review contains the date that the comment was given, the name of the user, the comment and rating given by the user	✓	
Normal design	The designs same with guest	✓	✓
	“Add to cart” button with border and same background colour	✓	✓
Staff			
Product detail display	Displaying product details	✓	✓
“Buy” button	Direct to login page	✓	
“Edit” button	Direct to edit product page	✓	
Button to view tutor's profile	A magnifying icon is shown to direct to tutor profile	✓	
Displaying reviews	Display all reviews for the specific course	✓	✓

	Each review contains the date that the comment was given, the name of the user, the comment and rating given by the user	✓	
Normal design	Same as the design with guest	✓	✓
	“Edit” button show on the left-hand side of the name of the course	✓	✓

7. Add Product and Edit Product Page

Testing items	Expected result	Testing result	
		Computer	Phone
Add product			
Photo upload	Photo upload to file	✓	✓
Photo preview	Photo preview immediately	✓	✓
“Add” button	Adding information in database table “course_info”	✓	✓
Validation of input	The date should be later than the date when the tutor set	✓	✓
	The ending time should be later than the starting time	✓	✓
Normal design	The entire form displaying in the middle	✓	✓
	Input fields for course date, name, time, price, grade and subject	✓	✓
	“Add” button with different background colour	✓	✓
	A space is added for staff to preview and upload the course image. The word “Click to upload the image for the course” is shown inside the box to let tutor know	✓	✓
Edit product			
Photo upload	Photo upload to file	✓	✓
Photo preview	Photo preview immediately	✓	✓
“update” button	Updating information in database “course_info”	✓	✓
“Delete course” button	Updating information in database “course_info”	✓	✓
Displaying information input	Input information from database table “course_info” will be displayed	✓	✓
Validation of input	The date should be later than the date when the tutor set	✓	✓
	The ending time should be later than the starting time	✓	✓
Normal design	Similar to Add product page	✓	✓

	“Add” button replaces by “update” button and “Delete course” button	✓	✓
--	---	---	---

8. Profile Page

Testing items	Expected result	Testing result	
		Computer	Phone
Guest			
Changing settings	Changing language function	✓	✓
	Changing theme function	✓	✓
Showing guest information	A guest photo in circle and guest ID will be display	✓	✓
Normal design	A guest image is shown on the top, coming up with the guest id displaying	✓	✓
	Part on settings on website with the word “Settings” on the right, then a vertical divider and the control part	✓	---
	Setting on the top of the control part and no vertical divider	---	✓
	Login link in blue and underlined to show that it is a link	✓	✓
	A horizontal divider shown between the personal information part and the settings part	✓	✓
Customer			
Changing settings	Changing language function	✓	
	Changing theme function	✓	
Showing customer information	A customer photo and username are shown	✓	
“Edit” button	Page direct to “edit profile” page	✓	
Showing subscriptions	Displaying the subscribed tutors	✓	
	Three of the tutors will be display if the amount is larger than that	✓	
Showing payment methods	Displaying the added payment methods	✓	
	Three of them will be displayed if the amount is larger than that	✓	
	Direct to subscribed tutor profile page	✓	
Button to “Payment method” Page	Direct to “Payment method” Page when arrow pressed	✓	

Button to “Subscriptions” Page	Direct to “Subscriptions” Page when arrow pressed	✓	
Button for logout	Delete all sessions	✓	
	Direct to Home Page	✓	
Button for delete account	Updating database table “customer_info”, “cart_info”, “payment_method_record”	✓	
Normal design	A profile picture in circle is shown on the top. Following the username. And also, an “edit” button. All are display in the middle of the page	✓	✓
	Subscription part on the left-hand side at the bottom of the personal information part	✓	---
	Payment record part on the right-hand side of the subscription part	✓	---
	Arrow shown after the records of subscription and payment record, stating that users can direct to the corresponding page through it	✓	✓
	A title is given for the subscription part and the payment record part above the cards	✓	✓
	A horizontal divider between the personal information part and settings part	✓	✓
	Settings part similar with guest	✓	✓
	Logout replace Login	✓	✓
	An additional of forgot password and delete account link, which is in blue and in red respectively	✓	✓
Staff			
Changing settings	Changing language function	✓	
	Changing theme function	✓	
Showing tutor information	A tutor photo, tutor name and tutor ID displaying	✓	
“Edit” button	Direct to “edit profile” page	✓	
Normal design	A profile picture in circle is shown on the top, following with the tutor’s name. Also, an “Edit” button. All are aligned in the center	✓	✓
	A description box is given	✓	✓
	Setting part similar to guest	✓	✓
	Logout replace Login	✓	✓

9. Edit Profile Page

Testing items	Expected result	Testing result	
		Computer	Phone
Customer			
Displaying information input	Information inputs are shown in the input fields of the table	✓	
“Change” button	Direct back to profile page	✓	
	Update information in database table “user_info”	✓	
Photo upload	Photo upload to file	✓	
Photo preview	Photo preview immediately	✓	
Normal design	A profile photo in circle on the top, using to upload and preview photo	✓	✓
	Input fields for username, email, current password, the new passwords.	✓	✓
	“Edit” button displaying after the form	✓	✓
	All of the above are aligned in the middle	✓	✓
Staff			
Displaying information input	Information inputs are shown in the input fields of the table	✓	
“Change” button	Direct back to profile page	✓	
	Update information in database table “tutor_info”	✓	
Photo upload	Photo upload to file	✓	
Photo preview	Photo preview immediately	✓	
Normal design	Things similar with customer page	✓	✓
	An additional textbox for inputting descriptions for tutor	✓	✓

10. Subscriptions Page

Testing items	Expected result	Testing result	
		Computer	Phone
Customer			
Displaying subscribed tutors' information	Displaying the subscribed tutor's info	✓	
Onclick function	Direct to tutor's profile page	✓	
Normal design	Displaying cards containing one subscriptions each	✓	✓

	In each card, displaying number of subscribers, tutor name and tutor's profile picture	✓	✓
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11. Payment Method Page

Testing items	Expected result	Testing result	
		Computer	Phone
Customer			
Displaying payment methods	Displaying the payment methods add before	✓	
Button for adding payment method	Direct to “Add payment record” page	✓	
Normal design	Displaying cards containing one payment record for each	✓	✓
	In each card, the name and photo of the payment method will be displayed. Also, the card number (if have)	✓	✓

12. Add Payment Method Page

Testing items	Expected result	Testing result	
		Computer	Phone
Customer			
“Submit” button	Update information in database table “payment_method_record”	✓	
Form for submission	A form for selecting new payment method, and a box to input additional information	✓	
Validation for input item	The “additional information” must be integer	✓	
Normal design	A box containing MC questions for choosing payment method wanted to add	✓	✓
	An input box for inputting the card number	✓	✓

13. Shopping Cart Page

Testing items	Expected result	Testing result	
		Computer	Phone
Customer			
	Display course detail that added to cart	✓	

Displaying courses add to cart	Direct to the corresponding product detail page after onclick	✓	
“Buy” button	Updating the database table “cart_info” and “payment_record”	✓	
Select buttons	“Select All”	✗ (the logic of select all sometimes are wrong)	
	Select one by one	✓	
Onclick function	Redirect to the corresponding product detail page after deleting the record from the database by clicking the delete icon.	✓	
Change of total price	The total price display will change while the selected product change	✓	
Normal design	Select button	✓	✓
	Displaying card for each record	✓	✓
	A select box and the course detail are shown inside the cart on the left-hand side of the box	✓	✓
	The price of the course and a delete icon on the left	✓	✓
	A total price of selected products and a “Buy” button displaying on the left-hand side after the cards	✓	✓

14. Purchase Page

Testing result	Expected result	Testing result	
		Computer	Phone
Customer			
Displaying course detail	Displaying course details selected for courses decided to pay	✓	
Displaying payment methods	Display all payment methods the customer added		✓
Hover design	When the payment method is hovered or selected, the background color will change	✓	✓
Pricing information	A table about the price of each product will be display		✓
“Pay” button	Message alert	✓	
	Direct to “Payment record” page		✓
Normal design	Course information displaying on the left-hand side with a card each	✓	✓

	The right-hand side contains a box with all the necessary items, including payment methods, a final payment summary, and the "Pay" button.	✓	✓
--	--	---	---

15. Payment Record Page

Testing items	Expected result	Testing result	
		Computer	Phone
Customer			
Displaying past purchasing record	Records displayed in card	✓	
Able to input rating and comments	Form for each record (an input box for comment, stars displaying for rating)	✓	
"Submit" button	Update information in database table "comment_info"	✓	
Sorting function	Sorting by purchase date	✓	
	Sorting by tutor	✓	
	Sorting by price	✓	
Normal design	Sorting form for records on the top right-hand corner	✓	✓
	Cards containing information	✓	✓
	On the left-hand side part of every card, it contains the course information and rating part	✓	✓
	A vertical divider is shown between the course information part and rating part	✓	✓
	The right-hand side will display the order information, containing the order id, date, time.	✓	✓
	The information part will display the course photo, name, date and time for the course	✓	✓
	The rating part contains the stars for users to input their rating for the course. Also, a comment box is displayed under the rating area.	✓	✓

16. Order Record Page

Testing result	Expected result	Testing result	
		Computer	Phone
Staff			
Filtering function	Filter by user ID	✓	
	Filter by course ID	✓	
	Filter by purchase date	✓	
Grouping function	Group by user ID	✓	
	Group by course ID	✓	
	Group by purchase date	✓	
Displaying order record	Display all purchase record	✓	
Normal design	A filtering and grouping form are displayed on the top-right hand corner of the page.	✓	✓
	An input field will be shown after the user chooses the filtering option. The placeholder will show different content according to the choice chosen.	✓	✓
	A selection box for filtering and grouping respectively is shown.	✓	✓
	Following with the record part, cards are displayed for every single product brought by all users	✓	✓
	In every card, it is divided into three parts with a horizontal divider. The three parts are the order information part, course information part and the users' information part from left to right respectively	✓	✓
	After grouping, a header showing the grouping details will be shown before the boxes with the same grouping criteria	✓	✓
	The three parts are divided by a vertical divider.	✓	✓

17. Help Center Page

Testing items	Expected result	Testing result	
		Computer	Phone
Guest + Customer + Staff			
Hover design	Hover or selected category's background color change	✓	
Displaying questions	Changing of different questions when different category chosen	✓	

Displaying answers	Changing of “+” to “-” when answer display	✓	
	Display and hide of answer when button clicked	✓	
Page linking	Users can go to the corresponding page with the links provided	✓	✓
Normal design	A header of “Help Center” is shown on the top left-hand corner of the page.	✓	✓
	On the left-hand side, different categories of questions are shown. A divider is shown above this part to separate the word ‘Help Center’ and the categories. Moreover, the hover design as also as the style after clicking will happen	✓	✓
	On the right-hand side, there are the questions inside the corresponding category. Each question is divided by a horizontal divider.	✓	✓
	A “+” symbol is displayed while not clicked, the answer and the “-” symbol is displayed after clicked	✓	✓

18. Comment Page

Testing items	Expected result	Testing result	
		Computer	Phone
Customer			
“Submit” button	Updating information in database table “comment_info”	✓	
Input field	A text area for users to input comments	✓	
Normal design	The title of “Give a comment to us” is displayed. An input field shown for users to input their comments.	✓	✓
Staff			
Displaying comment given	Display the content of comments from customers in cards	✓	✓

19. Courses page

Testing items	Expected result	Testing result
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		Computer	Phone
Guest + Customer + Staff			
Filtering function	Filter with all criteria	✓	
	Filter with one criterion only	✓	
Normal design	A filtering form is displayed at the top of the page.	✓	✓
	The filtering criteria are displayed on the left part, and the search button shown on the right-hand side.	✓	✓
	Below the filtering form are the course part	✓	✓
	In every card storing each course, the course name, date, time, price and the tutor's name are displayed. With a "Buy" or "Add to cart" button.	✓	✓

20. Tutors page

Testing items	Expected result	Testing result	
		Computer	Phone
Guest + Customer + Staff			
Searching function	After clicking the search button, the users are available to find the tutor's profile.	✓	
On click function	Users can directly go to the corresponding tutor profile page after clicking on the cards.	✓	
Normal design	An input field is given for users to input the tutor's name they want to search.	✓	✓
	Below the filtering form is the tutor information part.	✓	✓
	In every card storing each tutor, the tutor's name and the number of subscriptions are displayed.	✓	✓

Major Change

1. Fixed height for cart page

- Originally, the content of cart is overlapped with the footer. Shown as below.

The image displays two screenshots of a mobile application interface, likely a tutor or course booking platform. Both screenshots show a course cart page with a yellow header bar at the bottom containing the text "Total: \$ 0" and a blue circular arrow icon.

Screenshot 1 (Top): This screenshot shows a course titled "Chinese History" with a price of \$50. The course details include:

- Date: 2024-09-21
- Time: 18:00 ~ 22:00
- Tutor: tutor1

A "Buy" button is located in the top right corner of the card.

Screenshot 2 (Bottom): This screenshot shows another course titled "Chinese History" with a price of \$50. The course details include:

- Date: 2024-09-01
- Time: 08:00 ~ 08:30
- Tutor: tutor1

A "Buy" button is located in the bottom right corner of the card.

In both screenshots, the "Contact methods" section is visible on the right side of the card, listing email, phone number, and social media handles. The "Website links" section is also visible on the left side of the card.

- I discovered that the height of the element with the class "cart" was set to 100%, meaning it only covered the screen size. To fix this, I changed the height to "fit-content."
- However, the "Buy" button and the total amount still overlapped with the footer due to the "float" property I applied. I removed "float: right" from the "total" element and added "left: 80%" to keep it on the right side of the page.
- The final output is below.

The screenshot displays a mobile application interface. At the top, there is a course card for "S5 Chinese History". The card includes the course name, date (2024-09-21), time (18:00 ~ 22:00), tutor (tutor1), and a price of \$500. A "Buy" button is located at the bottom right of the card. Below the card, a yellow bar shows "Total: \$ 0" and a "Buy" button. The main content area has a blue header with "Website links" and three navigation items: "Home Page", "Profile", and "Courses". At the bottom, there is another course card for "S5 Chinese History" with the same details as the first one. The footer features a cartoon character and the text "一心只为".

Evaluation

Questionnaire result

I used Microsoft Forms to conduct a survey in order to know where I can improve and whether my website has any problems. It is crucial to have a survey form after building the website to know more about how others and the users think.

The reason why I chose to use Microsoft forms is because it can show analysis well. Part of the questions are displayed below.

Q: Which aspects of the layout, if any, do you find confusing? Please explain the reasons for your confusion.

Responses	
The toggle for dark mode, doesn't show that dark mode is activated. In the login and register page, the button makes it hard to distinguish the login and register page.	I would think that the color pattern of the home page might be a bit complicated. Having maybe 3 or more colour packed together. I would prefer to simply the colour code. Maybe just simply use 2 or max 3 colour to reduce the eye strain and the structure then will be more clean and neat.
Footer: button that can press don't has underline, not button has underline, add cursor to the button of footer Dark mode: when in dark mode, when you want to change language, you can't see the button. the contrast colour make my eye uncomfortable. When switch to dark mode, no animation of smooth change, eye uncomfortable.	Layout can be a bit crowded
seems crowded	register password, It has requirement for the password but it didn't show next to the text box
So far I think everything works very smoothly. Except the fact that a bar/ notification pops out even when the data input is correct, which makes it a little confusing.	N/A
I would think that the color pattern of the home page might be a bit complicated. Having maybe 3 or more colour packed together. I would prefer to simply the colour code. Maybe just simply use 2 or max 3 colour to reduce the eye strain and the structure then will be more clean and neat.	Course picture do not need in order record page.
	N/A
	None
	NA

Two of the users think that the layout is too crowded. Another two of the users think that there are some problems with the colour patterns. One thinks that message alert after successful process is confusing. Some think that the changes after some actions are strange, which the toggle to dark mode didn't show and the links aren't underlined after hovering. The remaining users (4 out of 13 of them) think that it is all fine with the layout.

Q: How useful do you consider the following functionalities?



For the function of filtering courses in the courses page, 62.5% of users think that it is very useful. Another 37.5% think that the function is somehow useful.

Moreover, 31.3% think that the function of sorting courses is very useful, 37.5% think that it is somehow useful, and 31.3% think that it is acceptable.

Furthermore, the function of subscribing to tutors gained 25% of the votes of very useful, 25% of votes of somehow useful, 37.5% of votes of acceptable, and 12.5% of votes of not very useful.

In addition, there are 12.5% of users voted very useful for the function “changing theme”. 62.5% of users voted somehow useful, 18.8% voted for acceptable and 6.3% voted for not very useful.

Additionally. 68.8% of voters chose very useful for the “changing language”. 18.8% of voters chose somehow useful. 6.3% of users voted for acceptable and not very useful respectively.

Apart from the above result, the function of filtering courses in the order record page has 43.8% of votes for very useful, 50% of votes for somehow useful and 6.3% of votes for acceptable.

Beside those, the page scrolling function gained 50% of votes for very useful, 31.3% of votes for somehow useful, 12.5% of votes for acceptable and 6.3% of votes for not very useful.

Q: Are there any additional functionalities, beyond those mentioned, that you consider excellent?

Responses	
Many payment methods available	
The payment record is good for tracking what I bought.	
The subscribe function.	
Hover on the navigation bar shows a more detailed one	
Can rate the courses by stars <3	The comment session is great. The purchase record is great. sorting function corresponding to their popularity is also great.
help center, so detail and list out all the possible question with different area	The Notification Button and The Dark Mode
change password	comment

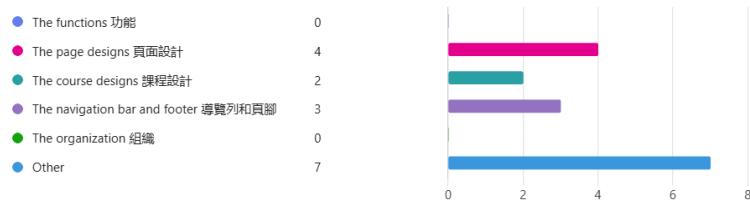
Three mentioned that they like the comment function. One mentioned they like the payment method page, and the help center page respectively. Two mentioned they like the function of viewing purchase records the payment record page. One like the reset password function. The last one mentioned he likes the notification function and the changing theme function.

Q: How would you rate the ease of access to the website? (highest grade means that it's easier to access)



Over half of all respondents gave a rating of four or above out of five for this question. However, there are 4 respondents who gave a rating lower than 4.

Q: Which aspect of the entire website do you consider the least favorable?



4 people think that page design is the worst. While 2 people think that the course design is the worst, and 3 don't really like the navigation bar and the footer. There are also 7 chose other for this question.

Q: How would you rate the overall website on a scale of 1 to 10?



Two people voted for 10 out of 10. Five people voted for 9 out of 10. Four people voted for 8 out of 10 and 7 out of 10 respectively. And one person voted for 5 out of 10.

Q: Are there any webpages you are unable to locate prior to reviewing the website sitemap?

Responses	
finding the course menu.	NA
No	nope
No	no
tutor profile page subscribed	NA
subscription page	No
The subscription of tutor	No
no	No
None	NA
	No

Most (12 out of 16) responded with a “No” to this question. For the remaining, mostly think that the subscribed tutor page or the tutor profile page is hard to access. One of the respondents thinks that finding the course menu is hard.

Q: How suitable do you consider the size of the graphics?



Six of respondents voted for 5 out of 5. Four of the respondents voted 4 out of 5 and 3 out of 5 respectively. One voted for level 2.

Pros of my website

1. The function of giving comments for paid courses
2. Clear navigation bar and footer
3. High accessibility as people don't understand English can also use the website
4. Having searching, filtering, sorting functions to help users to spot the information they need in a fast way

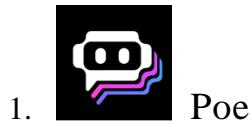
Cons of my website

1. The layout is too crowded
2. Too many colour patterns
3. Unclear icons in the navigation bar
4. Unclear instructions of the website

Further improvements

1. Better layout for order record and payment record page
 - Some users mentioned that it is messy to watch the order records and the payment records as it contains too much information
 - A table can be used in order to organise the same elements into a row and each record as a column. Sorting can also be added into table for different row by just simply clicking on the elements' name.
2. Improvements in photos
 - Some mentioned the icons in the navigation bar are too blur. Therefore, the photos can be saved in svg format, which allow the photos being zoomed without getting pixelized.
 - In addition, some say that the course images can be better as they look strange after putting together. Therefore, the course images can be adjusted by having similar backgrounds (colour, and content of them).
 - Moreover, the content of banners can be better. Some said that there are too many words inside the banner and the design of banner is not that attractive. The banner colours can be changed to more attractive, high-contrast options. Additionally, increasing the font size of key information will make it easier for users to access important details.
3. Requirements show before inputting in the forms
 - Some mentioned that it is annoying to be failed to register or edit personal information because they always can't be able to meet the hidden requirements.
 - Therefore, the requirements of every input field should be put inside the placeholder or areas around.
4. More clear instructions
 - Some said that they think that it's confusing when they saw "subscribed tutor page" in the form and don't know what it is and what is it for.
 - Therefore, more questions and answers can be added into the "Help Center" page to tell the users how to use the functions and what are they for.

Reference



1. Poe

<https://poe.com/>

I used poe to help me correct sentences, translate language and describe my webpages' layout. The prompts to do so are “Please help me correct the following sentences which will be included in a report to a formal tone. Please do it with point form.”, “Please translate the following texts to Traditional Chinese and Simplified Chinese respectively.” and “Please explain the webpage designs in the photo in serval points” respectively.



2. DeepAI

<https://deepai.org/machine-learning-model/text2img>

I use DeepAI to generate photos for courses with the prompt “Generate course image for XXXX(subject) for XX(grade) Hong Kong students with the clear word ‘XXXX’(subject) shown”.

Appendix

Login information

For customers:

Username 1: user123

Password 1: Password123

Username 2: sbaishard

Password 2: SBAishard555

For tutor:

Username 1: tutor1

Username 2: tutor2

Username 3: tutor3

Password: Password123

Evaluation form

Layout 佈局

1. How many marks you will give for the overall layout on a scale of 1 to 10? 從 1 到 10 分，您會給整體佈局多少分？*



2. Which aspects of the layout, if any, do you find confusing? Please explain the reasons for your confusion. 您覺得佈局的哪些方面（如果有）令人困惑？請解釋您困惑的原因。

Enter your answer

3. How would you rate the ease of access to the website? 您如何評估造訪該網站的難易度？*



4. Are there any webpages you are unable to locate prior to reviewing the website sitemap? 在查看網站網站地圖之前是否存在您無法找到的網頁？*

Enter your answer

5. Which webpage do you consider the most challenging to access? 您認為哪個網頁最難造訪？*

Enter your answer

6. Are there any areas of the layout that you believe could be improved? Please elaborate on your suggestions. 您認為佈局中有哪些可以改進的地方嗎？請詳細說明您的建議。

Enter your answer

Graphics 圖形

7. Rank the graphics elements from highest to lowest preference. 將圖形元素從最高優先到最低優先排列

Shop logo 店舖標誌

Icons in the navigation bar 導覽列中的圖示

Banners 橫幅

Course images 課程圖片

8. How suitable do you consider the size of the graphics? 您認為圖像的大小有多合適？



9. Do you have any suggestions for improving the graphics? 您對改進圖像有什麼建議嗎？

Enter your answer

Functions 功能

10. How useful do you consider the following functionalities? 您認為以下功能有多有用？*

	useful 非常有用	Somehow useful 有點用	Acceptable 可以接受	Not very useful 不是很有用	Unusable 沒有用途
Filtering courses by grades and/or subjects 按成績和/或科目過濾課程	<input type="radio"/>				
Sorting courses 排序課程	<input type="radio"/>				
Subscribing to tutors 訂閱導師	<input type="radio"/>				
Changing themes 改變主題	<input type="radio"/>				
Changing languages 改變語言	<input type="radio"/>				
Filtering courses based on enrollment and/or purchase date, or user ID 根據註冊順序、購買日期或使用者 ID 過濾課程	<input type="radio"/>				
Page Scrolling 頁面捲動	<input type="radio"/>				

11. Are there any additional functionalities, beyond those mentioned, that you consider excellent? 除了提到的功能之外，還有您認為優秀的其他功能嗎？

Enter your answer

12. Do you have any suggestions on how to improve the existing functionalities? 您對如何改進現有功能有什麼建議嗎？

Enter your answer

Overall 總體

13. Which aspect of the entire website do you most favor? 您最喜歡整個網站的哪個方面？ *

- The functionalities 功能
- The page designs 頁面設計
- The course designs 課程設計
- The navigation bar and footer 導覽列和頁腳
- The organization 組織
- Other

14. Which aspect of the entire website do you consider the least favorable? 您認為整個網站的哪個方面最不受喜歡？ *

- The functions 功能
- The page designs 頁面設計
- The course designs 課程設計
- The navigation bar and footer 導覽列和頁腳
- The organization 組織
- Other

15. Please explain in both you think the most and the least favorable thing. And give some evidence. 請解釋一下您認為最喜歡和最不喜歡的事情。並給出一些證據。 *

Enter your answer

16. How would you rate the overall website on a scale of 1 to 10? 您如何評價整個網站（從 1 到 10）？ *



17. Please provide the reasons behind your rating for the overall website. 請提供您對整個網站進行評級的原因。 *

Enter your answer

18. Are you able to identify any additional errors or issues with the website? 您能否發現網站有任何其他錯誤或問題？

Enter your answer