2024-2025 ICT SBA

Assessment Schedule System



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Introduction

'Assessment Schedule System' is designed for ABC Secondary School which can address the problem of schedule assessment prepared by teachers. This system allows teachers to have better schedule assessment with various functions to improve the convenience of schedule assessment. By using the functions, teachers can input, record the assessment data and search or review the records easily. Also, not only this assessment schedule system provides teachers' system, but also includes "Administrator" account with other special functions.

Design

User Interface (UI)

This program is displaying in command line interface (CLI) by using python programming language. Users are mainly using keyboard by pressing the button, such as number key, <ESC> key, <ENTER> key, arrow key to control the program in a user-friendly way. Besides, the program included centre alignment and different colour displaying which is clear for users to review. For example, a clear error message will be displayed in red colour to remind users.

Functions

In the program, there are totally 3 functions for teachers and 8 functions for administrator.

For both teachers and administrator have a common function "Reset Password".

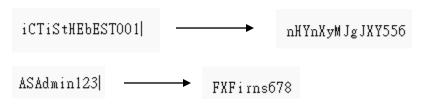
Special functions for administrator include "Teachers Class information" (Allow administrator to edit teachers' class which they are teaching), "Create Account", "Delete Account", "Reset Password Request" (Allow administrator to accept to request or not), "Specific Period Arrangement" (Allow administrator to arrange the specific period which teachers cannot assign any assessment on it), "Reset Assessments Log" and "Reset Specific Period".

Special functions for teachers only include "Schedule Assessments System" (Allow teachers to assign assessments to classes) and "Searching" (Allow teachers to search for the assessments scheduled before).

Special Features

Password Encryption

Every password stored in text files will be encrypted to **enhance the security** of program.



Animated Loading Page

When the user login successfully, an animated loading bar will be displayed, which the text is shown from the left to the right for about 1 second. Therefore, it can be more attractive.

```
LOGIN SUCCESSFUL

Press <ANY KEY> to continue.

Loading.....
```

Login with masked Password

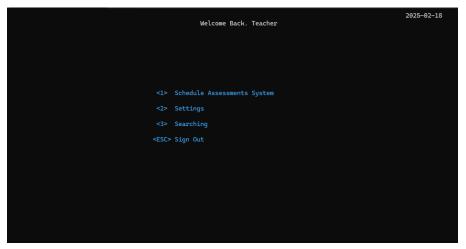
When the user is inputting the password, the password does not show on the screen. It **enhances the security** of the program.

[<Empty> To Return]
Username: Admin
Password: *********

Accounting Control

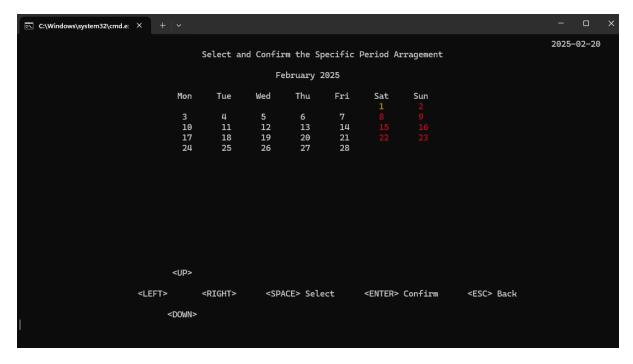
There are 2 types of users, teachers or administrator. After login, teachers and administrator are authorized with different functions in the program.





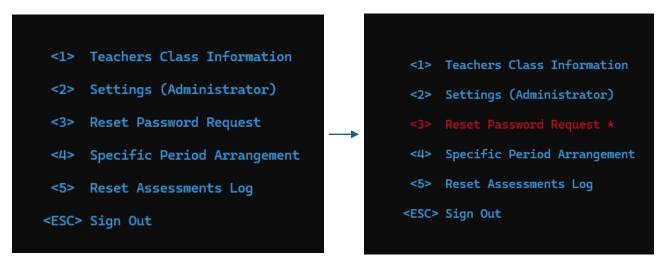
Easy data input method

Users are mainly using keyboard by pressing the keys that specified in the program, which is **easier for users to use** and **fix the value input to prevent error**.



Colour Displaying

Different colour displaying can be **more attractive**. Besides, users can review some message clearly.



Stack

Stack algorithm is using in the program to enhance the efficiency of the program.

```
def add_assms(): # Adding assessment
    selected = [] #stack
   while len(selected) <= 5:</pre>
        if len(selected) == 0:
            item = choose subject()
            if item == None:
                return schedule()
            else:
                selected.append(item)
        if len(selected) == 1:
            item = choose_assm_type()
            if item == None:
                selected.pop()
            else:
                selected.append(item)
        if len(selected) == 2:
            item = choose month()
            if item == None:
                selected.pop()
            else:
                selected.append(item)
        if len(selected) == 3:
            item = choose_deadline(selected[2])
            if item == None:
                selected.pop()
            else:
                selected.append(item)
        if len(selected) == 4:
            inp_time = assm_time()
            if inp time == None:
                selected.pop()
            else:
                selected.append(inp_time)
        if len(selected) == 5:
            assm_format1 = str(schedule_year) + "-" + "{
            assm_format2 = selected[0] + " " + selected[
            assm_deadline = assm_format1 + " " + assm_fo
            time = count_time(assm_format1)
            if time >= 5:
                for i in nango(2).
```

Login Information and Password

This program has login function to identify if the user is teacher or administrator. In the login function, user should input their username and password. Administrator has an administrator password which uses to access some functions that only administrator can use, including create teachers' account. Teacher account can be created by administrator while the quantity of administrator account can only be one. After administrator created a teacher account, login information of teachers is stored in text files, username.txt, encrypted_pw.txt and default_pw.txt.

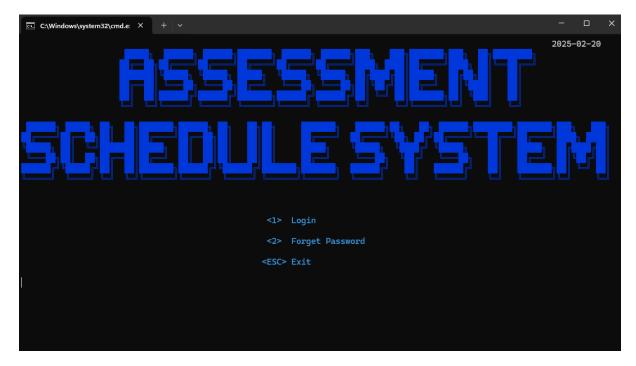
The username and passwords are as follows:

- 1. Administrator username: Admin Password: ASAdmin123
 Administrator Password: iCTiStHEbEST001
- 2. Teacher username: [Input name] Default Password: [Input name]12345 e.g. Username: Teacher Default Password: Teacher12345

User Manual (Administrator)

1.1 Menu Page

Press '1' button to enter to the login page.

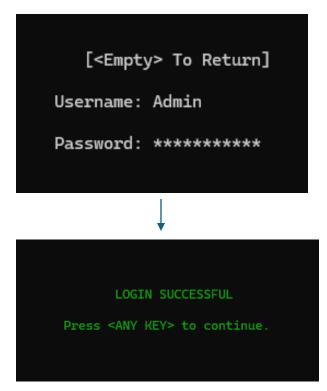


1.2 Login Page

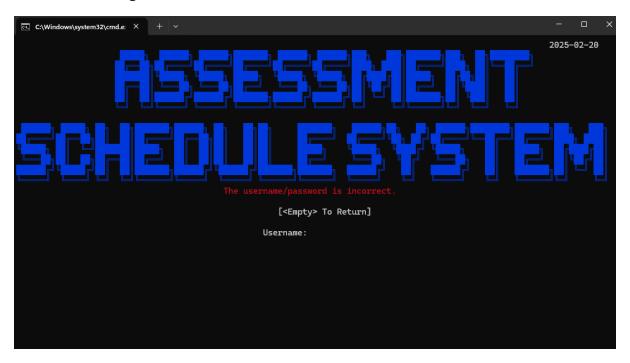
Users have to login before using the program. Enter the **username and the corresponding password**.



A Successful Login:

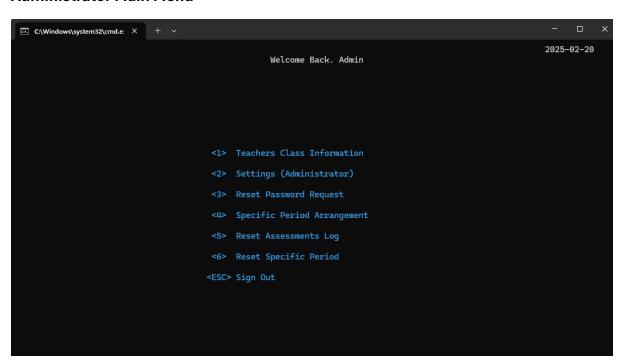


Unsuccessful Login:



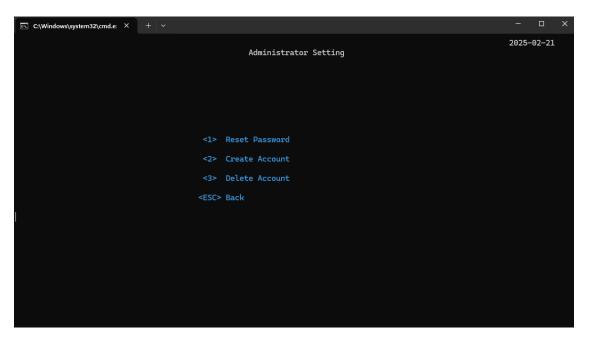
1.3 User Menu (Administrator)

Administrator Main Menu



1.4 Setting (Administrator)

Press '2' in main menu to enter **setting page**. There are 4 functions in the administrator setting page. Press '1' to enter the reset password function. Press '2' to enter the **create teachers' account** function. Press '3' to enter the **delete teachers' account** function.



1.5 Create Account (Administrator)

First, admin is required to input the Administrator Password when they use the function.

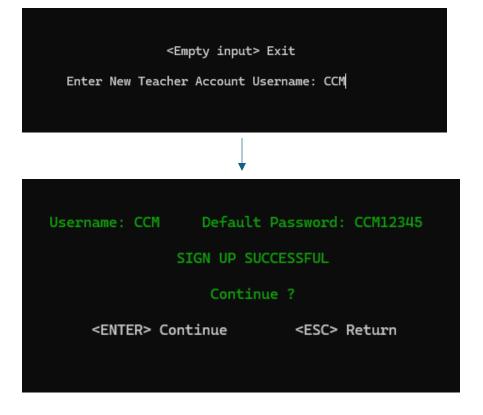


Incorrect Administrator Password Detected:

```
Administrator Password Incorrect.

2025-02-22
```

Then, admin can input the **username of the teachers' account** (e.g. username: CCM) and it will show the information of the **username and default password of the account** which should give them to the teacher. After that, admin can press 'Enter' to continue **create other teachers' accounts** or 'ESC' to leave function.



When the **same username** is detected:

```
Username Has Been Used. Please Try Again
2025-02-22

<Empty input> Exit
Enter New Teacher Account Username: |
```

1.6 Edit Teachers Class Information (Administrator)

Press '2' in the main menu to enter the function. In this function, admin is required to **input** the username of the teacher to edit their class information the teacher teaches.

```
Which Teachers' account information you want to change?

<Empty input> Exit : |
```

Username not found:

```
User Not Found / Wrong Input.

2025-02-22

Which Teachers' account information you want to change?

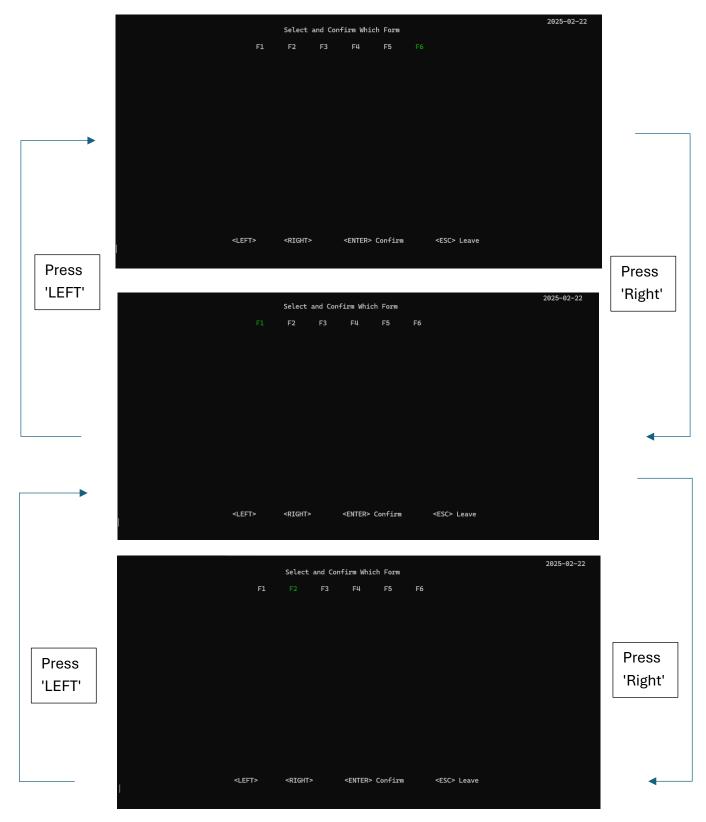
<Empty input> Exit : |
```

Username found (e.g. CCM) and there is no class assigned:



Then press '1' to **add class** or 'ESC' return to input username.

Admin can press 'left' or 'right' key to **select the first target** (e.g. F2) then press 'ENTER' to confirm the target. Pressing 'ESC' can return to previous page.



After that, admin can **select the second target** (e.g. C) by pressing 'left', 'right' key then press 'ENTER' to confirm. Pressing 'ESC' can return to previous page.



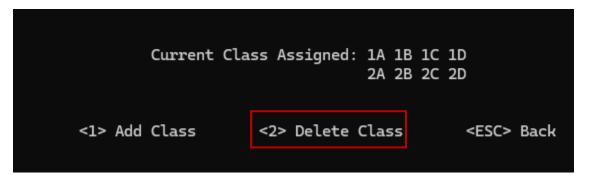
The class has been assigned (e.g. 1C) and **saved into the text file**. Admin can press 'ENTER' to **continue assign more classes** or 'ESC' to leave.

Error message:

```
This Class Has Already Been Assigned.

Press <ANY KEY> To Return
```

After admin assigned the class for the teacher, the class information function will have one more function which can **delete class** by pressing '2' to enter the **delete class function**.



Admin can **select the target** (e.g. 1A, 1B, 1C, 1D, 2A, 2B, 2D) by pressing 'UP', 'DOWN', 'LEFT', 'RIGHT' key. Then press 'ENTER' to confirm. Press 'ESC' can return to previous page.



```
Select the Class You Want to Delete

2C

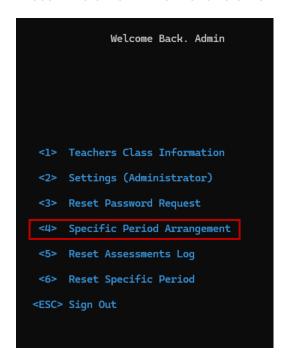
<UP>
<LEFT> <RIGHT> <ENTER> Confirm <ESC> Back
<DOWN>

Current Class Assigned: 2C

<1> Add Class <2> Delete Class <ESC> Back
```

1.7 Specific Period Arrangement (Administrator)

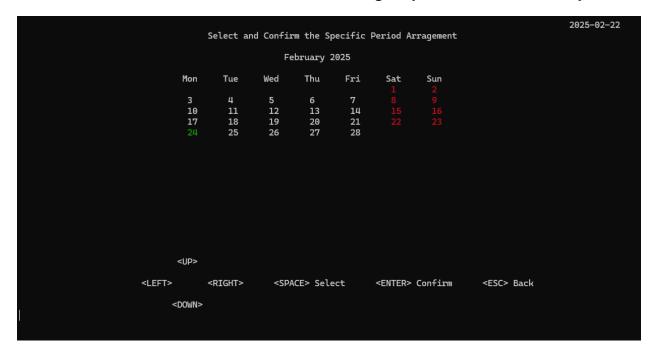
Press '4' to enter in the menu to enter the function.

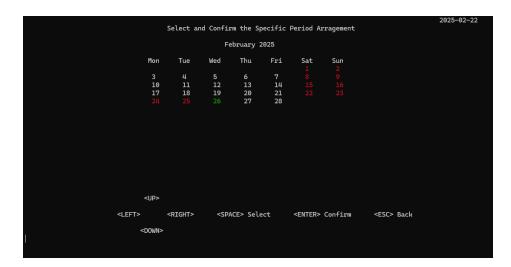


Admin can select the **target month** (e.g. February) by pressing 'UP', 'DOWN', 'LEFT' or 'RIGHT' key. Then press 'ENTER' to confirm. Pressing 'ESC' can return to the previous page.

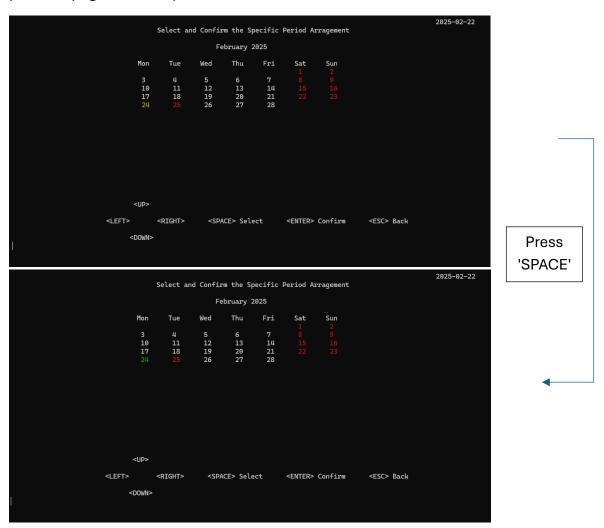
```
Select And Confirm The Month
                                                                              [6] June
               [2] February
                               [3] March
                                               [4] April
                                                              [5] May
[7] July
               [8] August
                               [9] September
                                              [10] October
                                                              [11] November
                                                                              [12] December
                   <LEFT>
                               <RIGHT>
                                           <ENTER> Confirm
                                                                <ESC> Back
                         <DOWN>
```

First, admin can select the target day, shown as green colour, (e.g. 24, 25) by pressing 'UP', 'DOWN', 'LEFT' or 'RIGHT' key. Second, admin can press 'SPACE' to highlight the target day from white to red which means teachers cannot assign any assessment on that day.





When admin is selecting the target day (e.g. 24) in red colour. The target shows in yellow colour. The admin can press 'SPACE' to change colour from red to white which means teachers can assign assessment on that day. Note that pressing 'ESC' can return to the previous page without update the text file.



At last, pressing 'ENTER' to confirm the arrangement and **saved in the text file**. Admin can press 'ENTER' again to **continue the arrangement** or 'ESC' to leave the function.



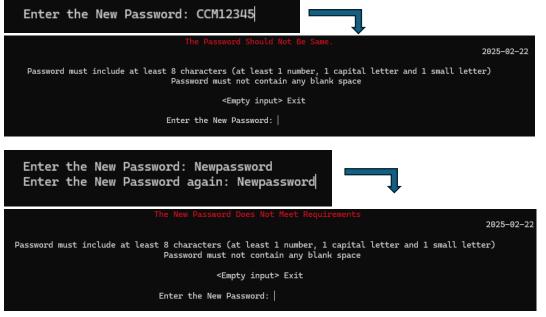
2.1 First Login (Teacher)

Now, back to teacher login (e.g. username: CCM Default password: CCM12345). After a **successful login** of teacher account, it will detect if the user is using the **default password**. If yes, user is required to **change the password**.



The new password must include at least 8 characters with at least 1 number, 1 capital letter and 1 small letter.

2025-02-22 Password must include at least 8 characters (at least 1 number, 1 capital letter and 1 small letter)
Password must not contain any blank space <Empty input> Exit Enter the New Password: 2025-02-22 Password must include at least 8 characters (at least 1 number, 1 capital letter and 1 small letter)
Password must not contain any blank space <Empty input> Exit Enter the New Password: Newpassword123 Enter the New Password again: Newpassword123 RESET PASSWORD SUCCESSFUL Press <ANY KEY> to continue. Error message: Enter the New Password: CCM12345



Enter the New Password: Newpassword123
Enter the New Password again: Newpassword000

Two New Password are not the same

2025-02-22

Password must include at least 8 characters (at least 1 number, 1 capital letter and 1 small letter)

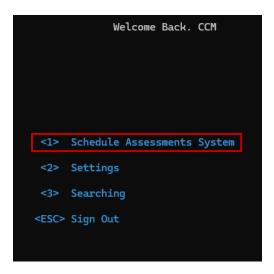
Password must not contain any blank space

<Empty input> Exit

Enter the New Password: |

2.2 Schedule Assessments System (Teacher)

Press '1' in the teacher menu to enter the function.



In the function, teacher can see the class(es) which the administrator assigned for them.



When the administrator has not assigned classes for them:

```
Class Not yet Assigned.

Press <ANY KEY> To Return
```

In the function, user can press '1' to **schedule assessments**. Pressing 'ESC' can return to the previous page.

```
Class: 2C

There is no asseessment assigned.

*I> Schedule Assessments

*ESC> Back
```

After pressing '1', user is going to **select four targets and input one target** about the assessment (subject, type, month, date, time spend) they want to schedule. First, user can **select the subject** (e.g. CHIN) by pressing 'UP', 'DOWN', 'LEFT' or 'RIGHT' key. Then press 'ENTER' to confirm. Pressing 'ESC' can return to the previous page.



Second, the user can select **the assessment type** (e.g. DICT) by pressing 'LEFT' or 'RIGHT' key. Then press 'ENTER' to confirm. Pressing 'ESC' can return to the previous page.

```
Select and Confirm the Assessment Type

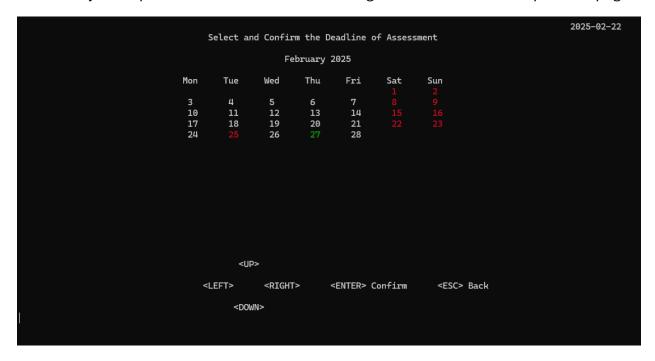
HW QUIZ UT TEST DICT

<pr
```

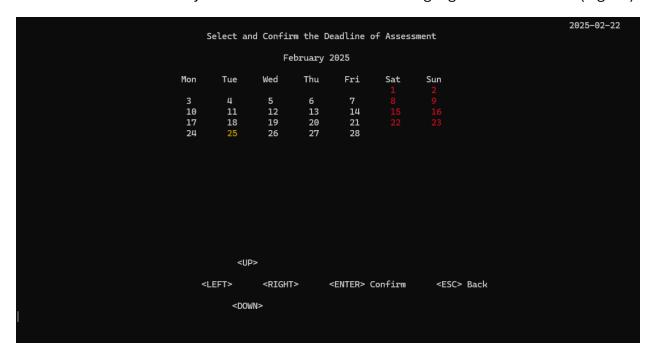
Third, the user can select **the month** (e.g. February) by pressing 'UP', 'DOWN', 'LEFT' or 'RIGHT' key. Then press 'ENTER' to confirm. Pressing 'ESC' can return to the previous page.



Fourth, the user can **select the date/deadline** (e.g. 27) by pressing 'UP', 'DOWN', 'LEFT' or 'RIGHT' key. Then press 'ENTER' to confirm. Pressing 'ESC' can return to the previous page.



User cannot schedule any assessment where the date is highlighted in red colour (e.g. 25).



Finally, the user can **input a number** between 0.1 to 5 hrs which they think the assessment will spend (e.g. 0.2). Then press 'ENTER' to confirm. Empty input can return to the previous page.

```
<Empty> To Return
How much time does your assessment spend (0.1 - 5hrs): 0.2
```

Error message:

```
<Empty> To Return
How much time does your assessment spend (0.1 - 5hrs): 0
```

```
<Empty> To Return
How much time does your assessment spend (0.1 - 5hrs): Hello
```

```
<Empty> To Return

How much time does your assessment spend (0.1 - 5hrs): 6
```

User can press 'ENTER' after checking the assessment is correct. Press 'ESC' can return to the previous page.

```
The Assessment will schedule on [2025-02-27 CHIN DICT]

Confirm ?

<ENTER> Confirm 

<ESC> Back
```

If the total time spend of assessments in a day **more than or equal to 5 hours**. The system will show **an alert** message to the user.

```
WARNING!! There are too many Assessments on a particular day !!!

The Assessment will schedule on [2025-02-27 MATH HW]

Confirm ?

<ENTER> Confirm <ESC> Back
```

After scheduling assessments, all the assessments will be **sorted in ascending order**. Also, there are two more functions (Delete Assessments, Show All Assessments') user can use. Press '3' to enter the **"Show All Assessments" function**

```
Class: 2C

The Most Recent Assessments Scheduled Shown Below

2025-02-27 CHIN DICT

2025-02-27 CSD HW

2025-02-27 MATH HW

2025-02-27 MATH HW

<-> Schedule Assessments
<2> Delete Assessments
<3> Show All Assessments
<ESC> Back
```

In this function, it shows all the assessments scheduled by the teacher.

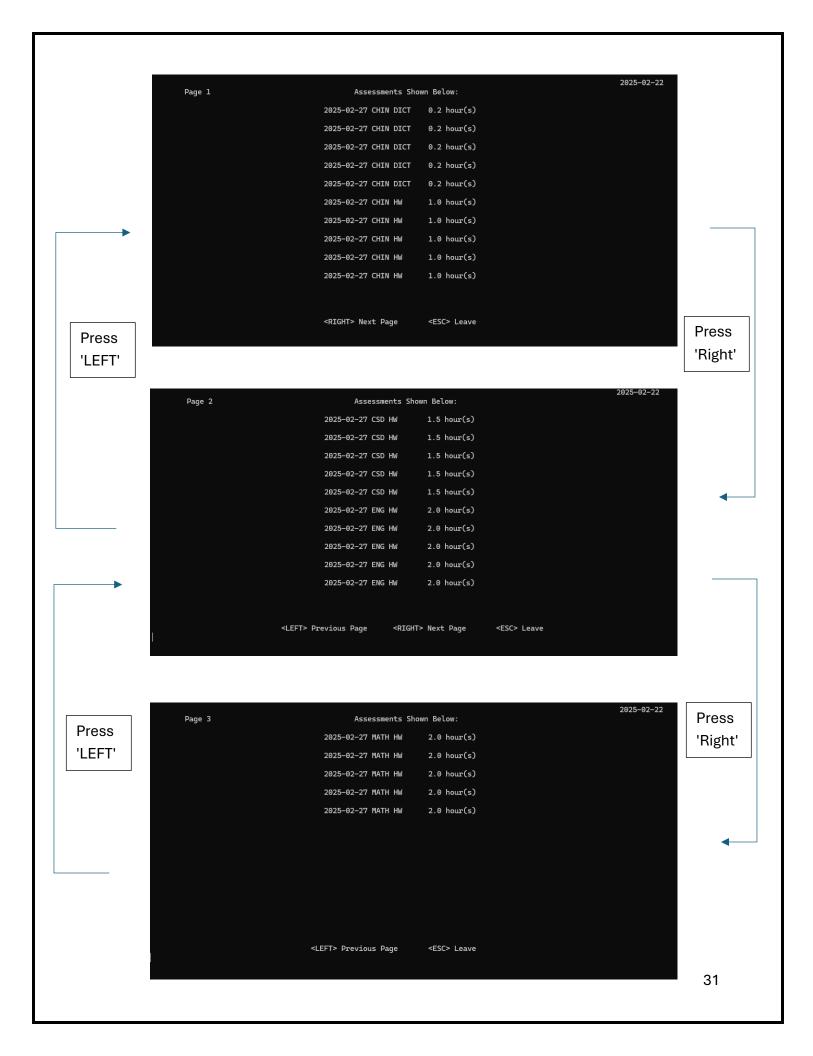
```
Page 1

Assessments Shown Below:

2025-02-27 CHIN DICT 0.2 hour(s)
2025-02-27 CHIN HW 1.0 hour(s)
2025-02-27 CSD HW 1.5 hour(s)
2025-02-27 ENG HW 2.0 hour(s)
2025-02-27 MATH HW 2.0 hour(s)
2025-02-27 MATH HW 2.0 hour(s)
```

When there are **too many assessments**, the page only shows the most recent 6 assessments. Also, in the "**Show All Assessments**" function, there will have more buttons so that the user can change the page to see all the assessments.

Class: 2C			2025-02-22
ctass. 20	The Most Recent Assessments Scheo	duled Shown Below	
2025-02-27	CHIN DICT	2025-02-27 CHIN DICT	
2025-02-25	CHIN DICT	2025-02-27 CHIN DICT	
2025-02-27	CHIN DICT	2025-02-27 CHIN HW	
And More			
<1> Sch	nedule Assessments	<2> Delete Assessments	
<3> Sho	ow All Assessments	<esc> Back</esc>	



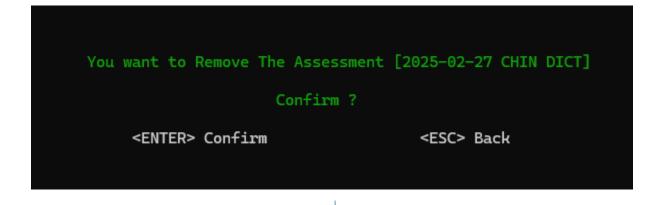
If teacher wants to remove the assessment scheduled in system. Press '2' in the function page shown below to enter the "Delete Assessments" function.

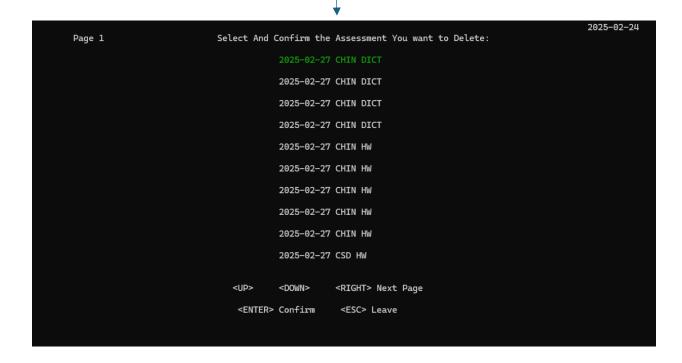


User can select **the target assessment** by pressing 'UP' or 'DOWN' key. Then press 'ENTER' to confirm. Pressing 'ESC' to leave this function and return to the previous page.



Press 'ENTER' key again to **confirm** the deletion. Press 'ESC' key can return to the previous page.



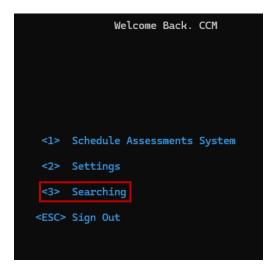


Similarly, it has multiple page detection.



2.3 Searching (Teacher)

Press '3' in the teacher menu to enter the function.



In the function, teacher can also see the class(es) which the administrator assigned for them.

```
Please Select the Class

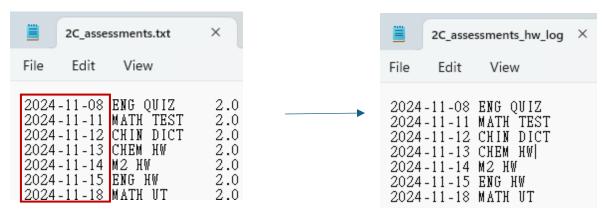
<1> 2C

<ESC> Leave
```

When the administrator has not assigned classes for them (same as Schedule Assessment System):

```
Class Not yet Assigned.
Press <ANY KEY> To Return
```

In this function, the system will **automatically detect if there are any assessment is outdated** (e.g. current date: 2025-02-22). If yes, those assessments will be sent to other text file and stored as the assessment record.



User can input **any word** (including space) to search for assessment records. Empty input to return to previous page.

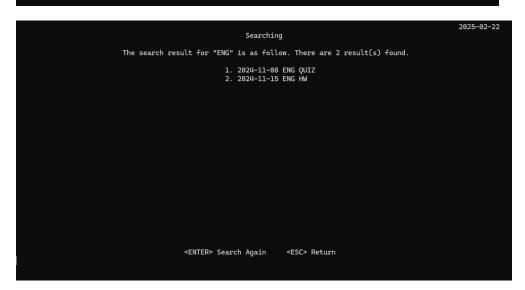


When there are no assessments record



After user inputted, it shows the **search result** on the screen. The user can press 'ENTER' to search again or press 'ESC' to leave the function.

Please enter any words to search for assessments : eng



Please enter any words to search for assessments : 11



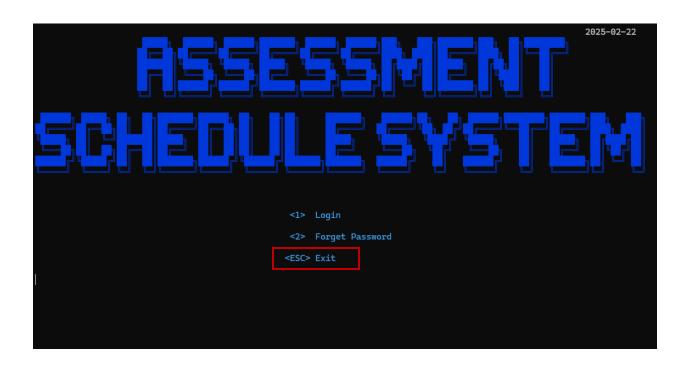
Please enter any words to search for assessments : 100



3. Exit Program (Both)

User can exit the program by pressing the 'ESC' key.

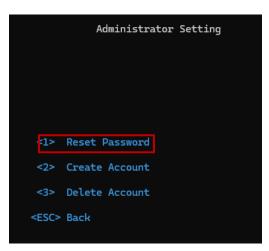
- <1> Teachers Class Information
 <2> Settings (Administrator)
 <3> Reset Password Request
 <4> Specific Period Arrangement
 <5> Reset Assessments Log
 <6> Reset Specific Period
 <ESC> Sign Out
- <1> Schedule Assessments System
 <2> Settings
 <3> Searching
 <ESC> Sign Out

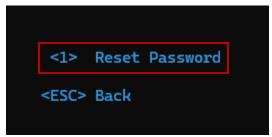


Additional Function

1. Reset Password (both)

Press '1' in the setting to enter the function.





In this function, user is required to enter the old password and twice of the new password. The new password must include at least 8 characters with at least 1 number, 1 capital letter and 1 small letter. (Administrator and teachers are using the same function. Use administrator account as an example.)

2025-02-24 Password must include at least 8 characters (at least 1 number, 1 capital letter and 1 small letter)
Password must not contain any blank space <Empty input> Exit Enter the Old Password: 2025-02-24 Password must include at least 8 characters (at least 1 number, 1 capital letter and 1 small letter)
Password must not contain any blank space <Empty input> Exit Enter the Old Password: ASAdmin123 Enter the New Password: ASAdmin234 Enter the New Password again: ASAdmin234 \downarrow RESET PASSWORD SUCCESSFUL Please Login Again Press <ANY KEY> to continue. 2025-02-24 <2> Forget Password <ESC> Exit

Error message:

Enter the Old Password: ASAdmin

The Old Password is incorrect

2025-02-24

Password must include at least 8 characters (at least 1 number, 1 capital letter and 1 small letter)
Password must not contain any blank space

<Empty input> Exit

Enter the Old Password:

Enter the Old Password: ASAdmin123

Enter the New Password: Abc

Enter the New Password again: Abc

The New Password Does Not Meet Requirements

2025-02-24

Password must include at least 8 characters (at least 1 number, 1 capital letter and 1 small letter)
Password must not contain any blank space

<Empty input> Exit

Enter the Old Password:

Enter the Old Password: ASAdmin123 Enter the New Password: ASAdmin234

Enter the New Password again: ASAdmin23

New Password are not the same

2025-02-24

Password must include at least 8 characters (at least 1 number, 1 capital letter and 1 small letter)
Password must not contain any blank space

<Empty input> Exit

Enter the Old Password:

Enter the Old Password: ASAdmin123 Enter the New Password: ASAdmin123

The Password Should Not Be Same

2025-02-24

Password must include at least 8 characters (at least 1 number, 1 capital letter and 1 small letter)
Password must not contain any blank space

<Empty input> Exit

(Teachers' account only)

Enter the Old Password: Ccm123456 Enter the New Password: CCM12345

```
The Password Should Not Be Same As Default Password.

2025-02-24

Password must include at least 8 characters (at least 1 number, 1 capital letter and 1 small letter)

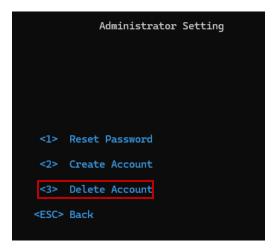
Password must not contain any blank space

<Empty input> Exit

Enter the Old Password:
```

2. Delete Account (Administrator)

Press '3' in the administrator setting page to enter the function.



Admin is required to input the Administrator Password when they use the function.



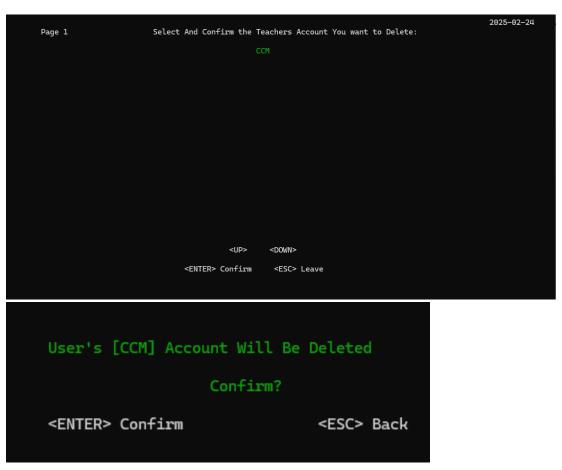
Incorrect Administrator Password Detected:

```
Administrator Password Incorrect.

2025-02-22

<pre
```

In this function, user can **select the target** (e.g. CCM) by pressing 'UP' or 'DOWN' key. Then press 'ENTER' to confirm. Pressing 'ESC' to leave the function.



Pressing 'ENTER' to **continue the deletion** of teachers' account. Pressing 'ESC' to leave the function.

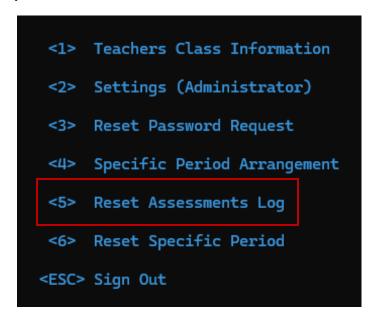
When there are no teachers' account:

```
There are no Teacher(s) Account

Press <ANY KEY> To Return
```

3. Reset Assessments Log (Administrator)

Press '5' in the administrator menu to enter the function. It also **required administrator password**.





Incorrect Administrator Password Detected:

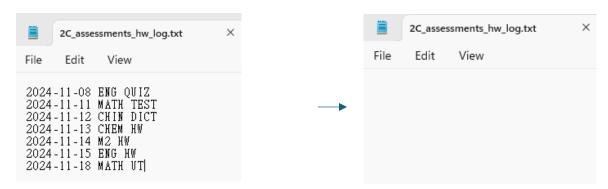


Pressing 'ENTER' key to confirm for clearing all assessment logs data. Pressing 'ESC' key to leave the function.

Clear All Assessment Logs Data ?
<ENTER> Confirm <ESC> Back

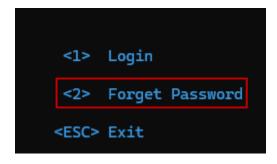


(e.g. 2C assessments log)



4. Forget Password (Teacher) + Reset Password Request (Administrator)

Press '2' in main menu to enter "Forget Password" function.



In this function, user is required to **enter their username**. (e.g. CCM). Then request will send to the administrator account.



```
Reset Password Request Sent

Administrator Will Reset Your Password To Default ASAP

Press <ANY KEY> To Return
```

Error Message:

Forget your password?

Please Enter your Username: CCM

Reset Request Pending

se Wait For Administrator to Reset

Press <ANY KEY> To Return

Request Decline

Default Password Detected

Press <ANY KEY> To Return

In the administrator account, we can see that the **Reset Password Request function** colour changed from white to red when request exists. Press '3' to enter the function.

<1> Teachers Class Information

<2> Settings (Administrator)

<3> Reset Password Request

<4> Specific Period Arrangement

<5> Reset Assessments Log

<6> Reset Specific Period

<ESC> Sign Out

<1> Teachers Class Information

<2> Settings (Administrator)

<3> Reset Password Request *

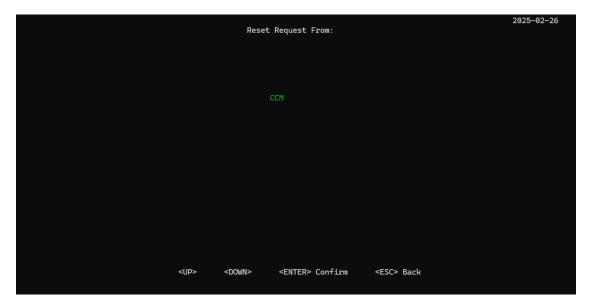
<4> Specific Period Arrangement

<5> Reset Assessments Log

<6> Reset Specific Period

<ESC> Sign Out

Administrator can see the **reset request from teachers**. Also, administrator can select the target (e.g. CCM) by pressing 'UP' or 'DOWN' key. Then, press 'ENTER' key to confirm. Pressing 'ESC' key to leave the function.



When there is no request:

```
There is no reset password request from teachers

Press <ANY KEY> To Return
```

A **confirm message** will be shown after pressing 'ENTER'. Administrator can press 'ENTER' key to **accept** or 'BACKSPACE' key to **decline the request**. Pressing 'ESC' return to the previous page.

Teachers' password will be reset to the default password. Administrator should inform the teacher after this action.



5. Reset Specific Period

Press '6' in the administrator menu to enter the function.

```
<1> Teachers Class Information
<2> Settings (Administrator)
<3> Reset Password Request
<4> Specific Period Arrangement
<5> Reset Assessments Log
<6> Reset Specific Period
<ESC> Sign Out
```

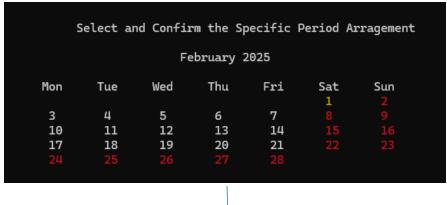
Admin can **select the target month** you want to delete (e.g. February) by pressing 'UP', 'DOWN', 'LEFT' or 'RIGHT' key. Then press 'ENTER' to confirm the selection. Pressing 'ESC' to leave the function.

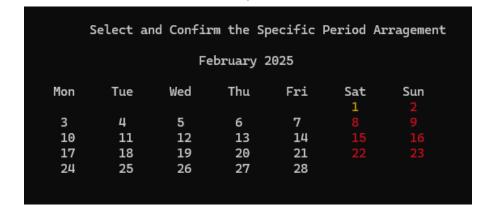


Press 'ENTER' again to confirm. Pressing 'ESC' return to previous selection page.

Press 'ENTER' to reset another month specific period. Press 'ESC' to leave the function.

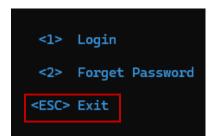






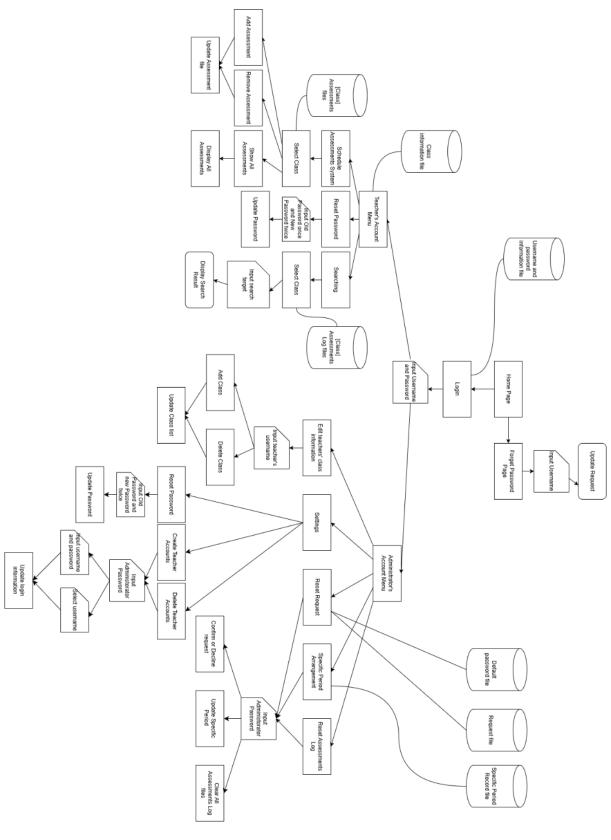
6. Goodbye Message

The system will show goodbye message when the user exit the program.





System Flowchart



Reference

Cover (image)

https://www.irasutoya.com/2016/03/blog-post_891.html

https://www.irasutoya.com/2020/01/blog-post_68.html

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Flowchart Drawing

https://www.draw.io/

Scan Code (readkey)

https://learn.microsoft.com/en-us/previousversions/visualstudio/visual-studio-6.0/aa299374(v=vs.60)?redirectedfrom=MSDN