



OOP PROJECT 2024

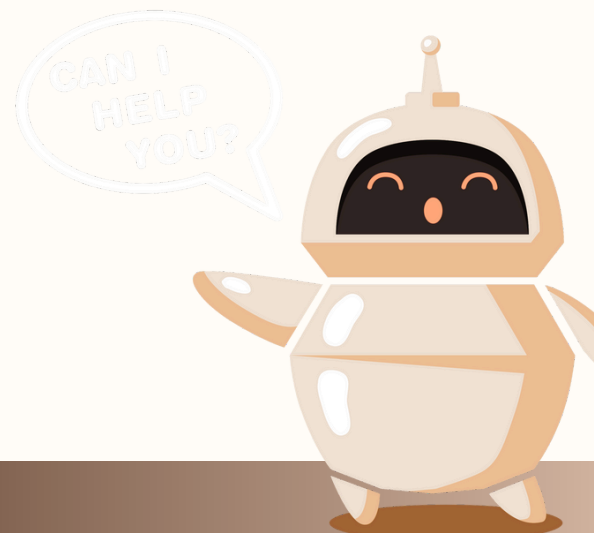
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INTRODUCTION

Project idea :

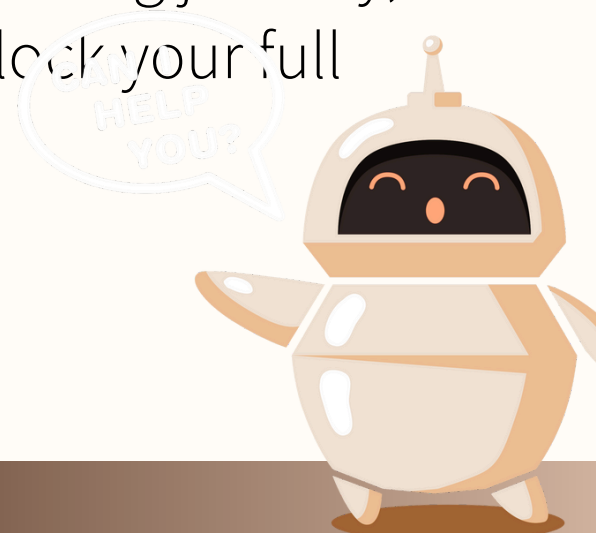
Apex Educational Platform is a platform that offers courses to help you achieve the highest possible score on the SAAT and Qudrat tests.

Target group:

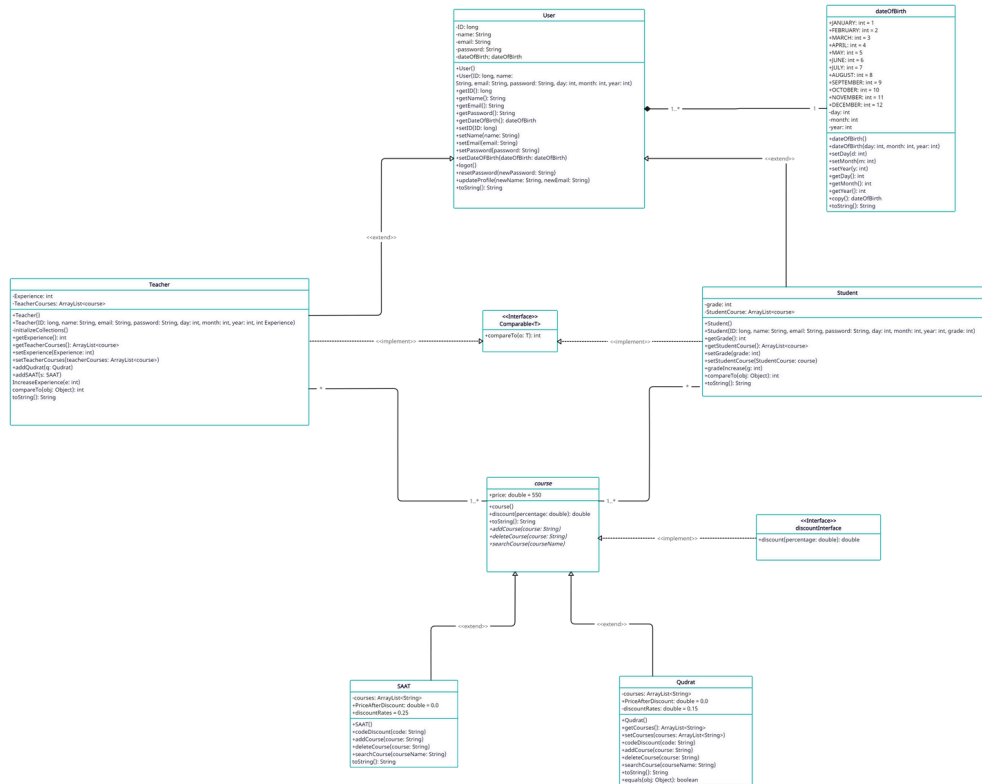
high school students.

Why did we choose the name Apex?

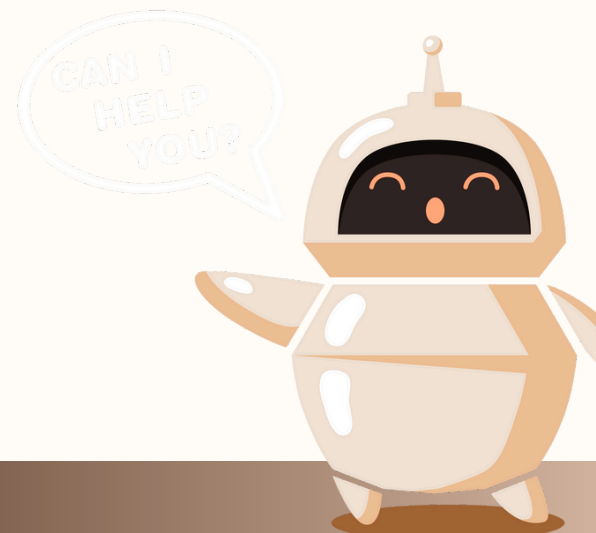
Apex means the highest point or peak, representing the top of achievement. At Apex Academy, we aim to help you reach this peak in your learning journey, supporting you to succeed and unlock your full potential.



UML



[Click here to access the image more clearly.](#)



TASK DETAILS

Timeline :

week1	Brainstorming, choosing the best ideas
week2	drawing classes, divided the tasks and between distribution of work team members
week3	Everyone worked on their class.
week4	We work together in main

Tasks of each team member :

**Mashael Shaker: discountInterface
,dateOfBirth ,course**

Esraa AbdElraheem: Qudrat

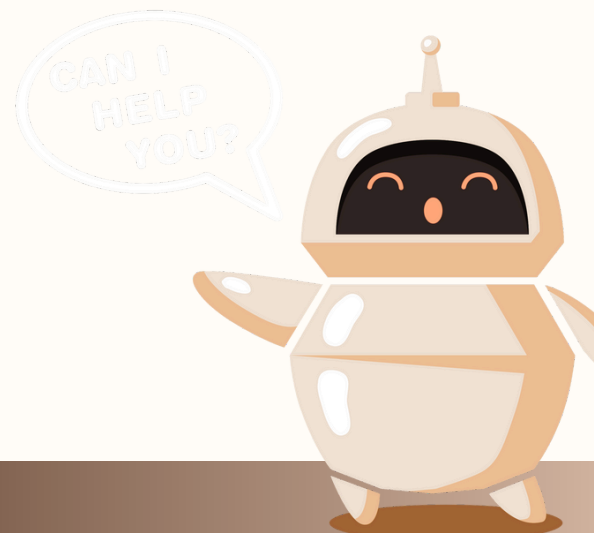
Amal al-shrieef : SAAT

Basmah Yaqoob: Student

Wed Badahdah: Teacher

Shaima Fuad: User

We all do main together



COURSE

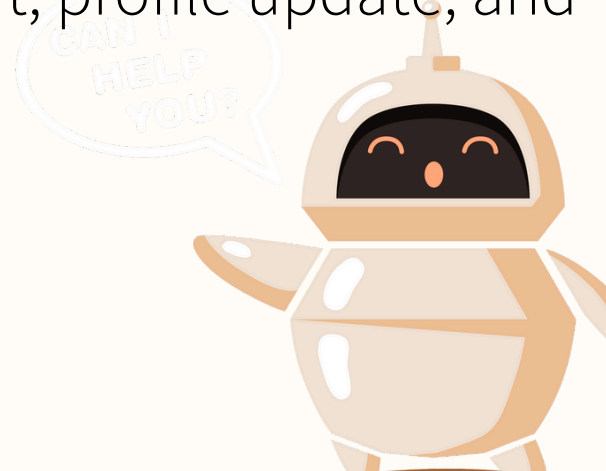
A brief about the class:

Class Course is an abstract class whose role is to implement the discount method. It has two methods: removeCourse and addCourse.

USER

A brief about the class:

Represents a class user in the Apex platform, with attributes for ID, name, email, password, and date of birth. Provides methods for logout, profile update, and password reset.



STUDENT

A brief about the class:

Represents a student in the Apex educational platform. Manages courses (Qudrat and SAAT), student information, and course enrollment. Supports adding, deleting, and searching for courses and students. Implements Comparable to allow sorting by student ID.

TEACHER

A brief about the class:

Represents a class teacher in the Apex educational platform. Manages courses, certificates, and experience, and supports adding, deleting, and searching.



SAAT

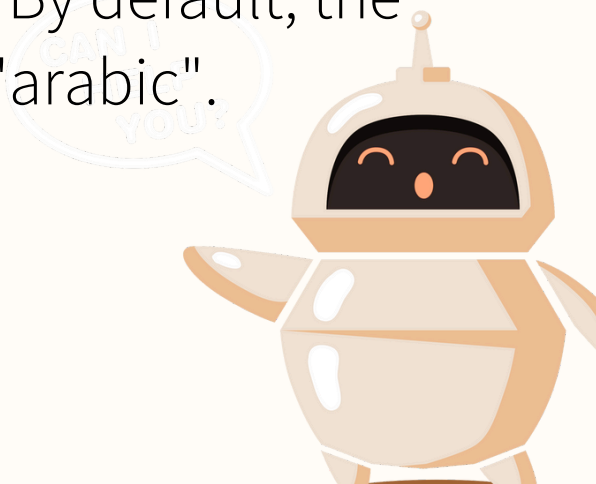
A brief about the class:

Represents the SAAT course, extending the abstract course class. Manages operations for adding, deleting, and searching courses. Also handles discount functionality for SAAT courses. By default, the SAAT course includes Biology, Chemistry, Physics, and Mathematic.

QUDRAT

A brief about the class:

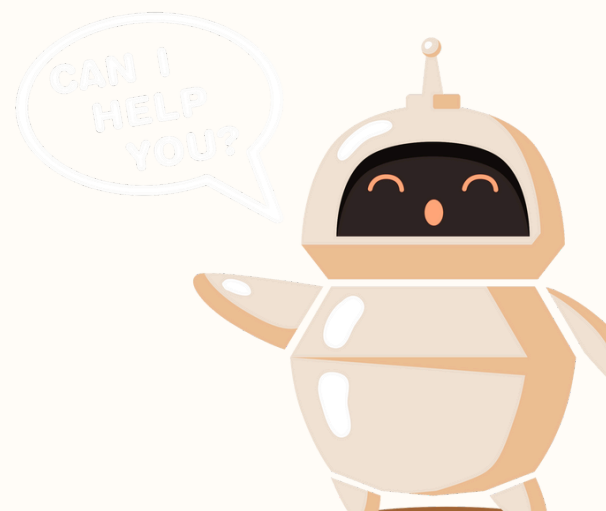
Represents a Class Qudrat course, extending the abstract course class. Manages course operations like adding, deleting, searching for courses, and applying discounts based on provided codes. By default, the Qudrat course includes "math" and "arabic".



DATEOFBIRTH

A brief about the class:

The DateOfBirth class has final variables for the months of the year. It also has a copy method that implements the concept of deep copy, as well as methods for sorting the day, month, and year. Additionally, it includes getter and setter methods, and an toString method for printing.



OUTPUT

1. When you choose number teacher

You will be presented with a list of six options.

```
2) Student
3) Exit
Please enter your choice (1-3): 1

--- Teacher Menu ---
1) View all available courses (Qudrat and SAAT)
2) View Qudrat courses only
3) View SAAT courses only
4) View all student information
5) Search for a student by ID
6) Log out
Select an option (1-6): |
```

If you choose number one, the available courses will appear.

```
5) Search for a student by ID
6) Log out
Select an option (1-6): 1

--- All Available Courses ---
Qudrat :
the price of course = 550.0
The subjects are: math arabic

SAAT :
the price of course = 550.0
the subjects are : Biology Chemistry Physics Mathematic
```

When you choose number 2, only the qudrat cours will appear

```
1) View all available courses (Qudrat and SAAT)
2) View Qudrat courses only
3) View SAAT courses only
4) View all student information
5) Search for a student by ID
6) Log out
Select an option (1-6): 2

--- Qudrat Courses ---
Qudrat :
the price of course = 550.0
The subjects are: math arabic
```

OUTPUT

1. When you choose number teacher

and if you choose number 3, only the saat cours will appear

```
1) View all available courses (Qudrat and SAAT)
2) View Qudrat courses only
3) View SAAT courses only
4) View all student information
5) Search for a student by ID
6) Log out
Select an option (1-6): 3

--- SAAT Courses ---
SAAT :
the price of course = 550.0
the subjects are : Biology Chemistry Physics Mathematic
```

Now I will choose number 4 and it will show me all the students' information.

```
--- Student Information ---
ID: 201
Name: Shaima
Email: Shaima@gmail.com
DateOfBirth: (1, 1, 2004)
Student's grade: 100
-----
ID: 202
Name: Esraa
Email: Esraa@gmail.com
DateOfBirth: (1, 1, 2005)
Student's grade: 100
```

```
ID: 203
Name: Mashael
Email: Mashael@gmail.com
DateOfBirth: (1, 1, 2005)
Student's grade: 100
-----
ID: 204
Name: Amal
Email: Amal@gmail.com
DateOfBirth: (1, 1, 2005)
Student's grade: 100
```

```
ID: 205
Name: Wed
Email: Wed@gmail.com
DateOfBirth: (1, 1, 2005)
Student's grade: 100
-----
ID: 206
Name: Basmah
Email: Basmah@gmail.com
DateOfBirth: (1, 1, 2004)
Student's grade: 100
-----
```

as you see we have 6 student's

OUTPUT

1. When you choose number teacher

We are nearing the end of the teacher list. Now I will choose number 6 and you can search for a specific student by ID

```
--- Teacher Menu ---
1) View all available courses (Qudrat and SAAT)
2) View Qudrat courses only
3) View SAAT courses only
4) View all student information
5) Search for a student by ID
6) Log out
Select an option (1-6): 5
Enter the Student ID you want to search:

4) View all student information
5) Search for a student by ID
6) Log out
Select an option (1-6): 5
Enter the Student ID you want to search: 206

Student found:
ID: 206
Name: Basmah
Email: Basmah@gmail.com
DateOfBirth: (1, 1, 2004)
Student's grade: 100
```

Finally, I chose number six and logged out...

```
3) View SAAT courses only
4) View all student information
5) Search for a student by ID
6) Log out
Select an option (1-6): 6

Logging out...

1) Teacher
2) Student
3) Exit
Please enter your choice (1-3):
```

OUTPUT

2 .When you choose number 2 student

A small list will appear.

You can choose 1 if you want to create a new account or 2 if you want to log in. Let's choose 1: I want to create a new account.

```
1) Teacher
2) Student
3) Exit
Please enter your choice (1-3): 2

Please choose:
1) Create a New Account
2) Log In with an existing account
Enter your choice:
```

```
Please choose:
1) Create a New Account
2) Log In with an existing account
Enter your choice: 1
Enter your name: wed
Enter your email: Wed@gmail.com
Enter your password: wed1234
Enter your birth day (1-31): 41
Invalid day. Please enter a day between 1 and 31.
Enter your birth day (1-31):
```

After you choose the option to create an account, a list will appear containing some required information about you.

Enter your name

enter your email

enter your password

your date of birth, and your grade.


Thus, you have created an account and they will give you an ID.

```
1) Create a New Account
2) Log In with an existing account
Enter your choice: 1
Enter your name: wed
Enter your email: Wed@gmail.com
Enter your password: wed1234
Enter your birth day (1-31): 1
Enter your birth month (1-12): 1
Enter your birth year: 2005
Enter your current grade: 100
Your new account ID is 207
```


OUTPUT

2 .When you choose number 2 student


Before I move on to something else I want to show you some mistakes if you do them what will happen.

```
Please choose:
1) Create a New Account
2) Log In with an existing account
Enter your choice: 1
Enter your name: wed
Enter your email: Wed@gmail.com
Enter your password: wed1234
Enter your birth day (1-31): 41
Invalid day. Please enter a day between 1 and 31. 
```

Like here, if you choose the wrong date, a message will appear until you enter the correct day.

```
Enter your choice: 1
Enter your name: wed
Enter your email: Wed@gmail.com
Enter your password: wed1234
Enter your birth day (1-31): 1
Enter your birth month (1-12): 13
Invalid month. Please enter a month between 1 and 12. 
Enter your birth month (1-12):
```

Here is the same way if you enter a month or year that does not exist

```
Enter your birth year: 40
Invalid year. Please enter a year between 1900 and 2024 
Enter your birth year:
```

OUTPUT

2 .When you choose number 2 student

Now you have chosen option number

```
1) Teacher
2) Student
3) Exit
Please enter your choice (1-3): 2

Please choose:
1) Create a New Account
2) Log In with an existing account
Enter your choice: 2|
```

It asks you for some information to log in

ID number

Password number

```
Please choose:
1) Create a New Account
2) Log In with an existing account
Enter your choice: 2
Enter your Student ID: 205
Enter your Password: Wed12345
You have successfully logged in.
```

OUTPUT

2. When you choose number 2 student

Before I move on to something else I want to show you some mistakes if you do them what will happen.

```
Please enter your choice (1-3): 2
```

```
Please choose:
```

- 1) Create a New Account
- 2) Log In with an existing account

```
Enter your choice: 2
```

```
Enter your Student ID: 200
```

```
Enter your Password: Wed12345
```

```
The ID not found
```



- 1) Teacher
- 2) Student
- 3) Exit

```
Please enter your choice (1-3):
```

If you enter the wrong ID, you will receive this message

```
Please enter your choice (1-3): 2
```

```
Please choose:
```

- 1) Create a New Account
- 2) Log In with an existing account

```
Enter your choice: 2
```

```
Enter your Student ID: 205
```

```
Enter your Password: Wed12
```

```
Password is wrong
```



Here, if you enter the wrong password, you will receive this message.

Don't forget your important information like this!!

OUTPUT

2 .When you choose number 2 student

When you put a number other than 1 and 2, the program stops.

```
Please choose:
1) Create a New Account
2) Log In with an existing account
Enter your choice: 4
Exception in thread "main" java.lang.ArithmeticException: Invalid choice, please try again.
    at apex.Apex.main(Apex.java:153)
C:\Users\shake\AppData\Local\NetBeans\Cache\20\executor-snippets\run.xml:111: The following error occurred while executing this line:
C:\Users\shake\AppData\Local\NetBeans\Cache\20\executor-snippets\run.xml:68: Java returned: 1
BUILD FAILED (total time: \ seconds)
```

OUTPUT

2 .When you choose number 2 student

We continue our journey after that a list of 14 options appears to us.
I will show you each option so we can start together.

```
--- Student Menu ---
1) View all available courses
2) Subscribe to Qudrat courses
3) Subscribe to SAAT courses
4) View all teacher information
5) Search for a specific course
6) Get a hint for the discount code ;)
7) Add a Qudrat course to the platform
8) Add a SAAT course to the platform
9) Remove a Qudrat course from your subscriptions
10) Remove a SAAT course from your subscriptions
11) View all courses you are subscribed to
12) Reset your password
13) Update your profile
14) Log out
Select an option (1-14):
```

I started with option 1 and all the available courses appeared to me.

```
--- Available Courses ---
Qudrat :
the price of course = 550.0
The subjects are: math arabic

SAAT :
the price of course = 550.0
the subjects are : Biology Chemistry Physics Mathematic
```

OUTPUT

2 .When you choose number 2 student

Before I chose number 2, I noticed that there was a discount code.
Who doesn't like discount codes?
So I chose number 6 to find out what the code was.

```
14/ log out
Select an option (1-14): 6
Hint: I am a land of deserts and dreams, where the sun shines bright and the sea gleams.
Home to a holy place, so revered. In the heart of the Middle East, I'm cheered.
What am I?
Hint: Use capital letters and country abbreviation.
```

i think i konw it

Now I chose option number two to subscribe to the Qudrat course and fortunately there is a discount code and I put it

```
11/ log out
Select an option (1-14): 2
Enter discount code (if any): KSA|

You have successfully subscribed to Qudrat courses!
Qudrat :
the price of course = 550.0
The subjects are: math arabic
The price of the course after discount: 467.5
```

If you do not enter a valid discount code, you will subscribe at the original price.

```
Select an option (1-14): 2
Enter discount code (if any):
ksa

The code is invalid or expired.
You have successfully subscribed to Qudrat courses!
Qudrat :
the price of course = 550.0
The subjects are: math arabic
```

OUTPUT

2 .When you choose number 2 student

Let's try some cases.

Here, after I joined the qudrat course, I searched for my courses in number 5.

```
Select an option (1-14): 5
Enter the type of course (Qudrat or SAAT): Qudrat
Enter the subject you want to search for: math
Course "math" found.
```

Then I tried to delete the item, add it back and search for it.
It worked wow!!

```
Select an option (1-14): 9
Enter the name of the Qudrat course to delete: math
The course "math" has been removed.
```

choice 9

```
-----
Qudrat :
the price of course = 550.0
The subjects are: arabic
The price of the course after discount: 467.5
-----
```

choice 11

```
14) Log out
Select an option (1-14): 5
Enter the type of course (Qudrat or SAAT): Qudrat
Enter the subject you want to search for: math
Course "math" not found.
```

choice 5

```
Select an option (1-14): 7
Note: You can only add Math or Arabic courses.
Enter the name of the Qudrat course to add: math
The course "math" has been added.
```

choice 7

```
Qudrat :
the price of course = 550.0
The subjects are: arabic math
The price of the course after discount: 467.5
-----
```

choice 11

OUTPUT

2 .When you choose number 2 student

I want to choose option number 3 to subscribe to the SAAT course and fortunately there is a discount code and I put it

```
Select an option (1-14): 3
Enter discount code (if any): KSA
You have successfully subscribed to SAAT courses!
SAAT :
the price of course = 550.0
the subjects are : Biology Chemistry Physics Mathematic
the price of course after discount 412.5
```

If you do not enter a valid discount code, you will subscribe at the original price.

```
17, buy out
Select an option (1-14): 3
Enter discount code (if any): ksa
The code is invalid or expired.
You have successfully subscribed to SAAT courses!
SAAT :
the price of course = 550.0
the subjects are : Biology Chemistry Physics Mathematic
```

OUTPUT

2. When you choose number 2 student

In the same way, search for a specific course, delete it, and add it back.

```
Select an option (1-14): 5
Enter the type of course (Qudrat or SAAT): SAAT
Enter the subject you want to search for: Biology
Course "Biology" found.
```

choice 5

```
Select an option (1-14): 10
Enter the name of the SAAT course to delete: Biology
The course "Biology" has been removed.
```

choice 10

```
-----
SAAT :
the price of course = 550.0
the subjects are : Chemistry Physics Mathematic
the price of course after discount 412.5
-----
```

choice 11

```
Select an option (1-14): 5
Enter the type of course (Qudrat or SAAT): SAAT
Enter the subject you want to search for: Biology
Course "Biology" not found.
```

choice 5

```
Select an option (1-14): 8
Note: You can only add Biology, Chemistry, or Physics courses.
Enter the name of the SAAT course to add: Biology
The course "Biology" has been added.
```

choice 8

```
-----
SAAT :
the price of course = 550.0
the subjects are : Chemistry Physics Mathematic Biology
the price of course after discount 412.5
-----
```

choice 11

OUTPUT

2 .When you choose number 2 student

Here I chose number 4 to see all the information of the available teachers.

```
--- Teachers Information ---
```

```
ID: 101  
Name: Retaj  
Email: Retaj@gmail.com  
DateOfBirth: (1, 1, 1990)  
Experience: 4  
-----
```

```
ID: 102  
Name: Nasser  
Email: Nasser@gmail.com  
DateOfBirth: (1, 1, 1990)  
Experience: 2  
-----
```

```
ID: 103  
Name: Nora  
Email: Nora@gmail.com  
DateOfBirth: (1, 1, 1990)  
Experience: 5  
-----
```

```
ID: 104  
Name: Ahmad  
Email: Ahmad@gmail.com  
DateOfBirth: (1, 1, 1990)  
Experience: 7  
-----
```

```
ID: 105  
Name: Emad  
Email: Emad@gmail.com  
DateOfBirth: (1, 1, 1990)  
Experience: 12  
-----
```

OUTPUT

2 .When you choose number 2 student

Here, the penultimate one, I chose option number 12 to change the password.

```
Select an option (1-14): 12
Enter your current password:
Wed12345
Enter your new password:
wed123
Reset password successfully!
```


OUTPUT

2 .When you choose number 2 student

Let's try to update the profile.

It asked me to enter my current email and name.

After changing it, how do I want them?

```
Enter your current Name:
Wed
Enter your current Email:
Wed@gmail.com
Enter a new Name:
aaaa
Enter a new Email
aaaa@gmail.com
Profile updated.
```

But if you enter your name and email incorrectly, we will show you a message.

Who forgets their name?

```
Select an option (1-14): 13
Enter your current Name:
wed
Enter your current Email:
Wed@gmail.com
Your current Name/Email is wrong!
```

OUTPUT

2 .When you choose number 2 student

Finally, log out.

```
Select an option (1-14): 14  
Wed log out...
```

OUTPUT

3. When you choose number 3 exit the program

In the end, we reached the last chose, which was to exit the program.

I enjoyed explaining and showing you everything I did

I hope you enjoyed it with me.

```
1) Teacher
2) Student
3) Exit
Please enter your choice (1-3): 3
Thank you for using Apex. Goodbye!
BUILD SUCCESSFUL (total time: 1 minutes 07 seconds)
```

OUTPUT

4. When you add an incorrect number

I came back again to show you the last thing. If you enter the wrong number, what will appear to you?

```
1) Teacher
2) Student
3) Exit
Please enter your choice (1-3): 4      don't do that !!
Invalid choice, please enter 1, 2, or 3.
```