

Part 1

Assume that you are about to open a 24-hour coffee shop on the Chulalongkorn University campus called "Too Late To Sleep". The coffee shop must provide services to all members of Chulalongkorn University (no entrance fee) and to outsiders (charge for entrance).

1.1

Ans

For the 'Too late To Sleep', I will implement 2 methods in order to create a combination of authentication protocols, and both are 'what do you know' and 'what do you trust'. There are several different roles which are member (Chulalongkorn University's student and Chulalongkorn University's officer), non-member (Outsider), Barista (Staff), Manager (Admin), receptionist (Staff)

Name	Role
Chula's student	Member
Chula's officer	Member
Barista	Staff
Manager	Admin
Receptionist	Staff
Outsider	Non-Member

1.2

Ans

My coffee shop will definitely have 1 entrance door, 1 bathroom, 1 coffee service area, and a place to sit. For users who have already registered as a member (Chulalongkorn University student card), They can enter by using a scan gate at the main entrance after entering the entrance door. The outsider or whoever wants to enter the coffee shop without a membership will need to go to the reception on the right side of the entrance to pay a fee. There are also sleeping boxes where we can sleep when we feel tired. There is also a manager's room too so that he/she can manage my coffee shop easily. Below is the list all resources that my coffee shop will have.

- entrance door
- bathroom
- coffee service area
- place to sit
- reception

- sleeping boxes
- Manager's room

1.3

Ans

Below table is about the access and resources.

Resource	Access Control
Bathroom	Everyone can use bahtroom
Reception	Only Receptionist and Manager
Sleeping Boxes	Only members
Manager's room	Only Manager
Coffee Service Area	Only Barista and Manager
Place to sit	Everyone can use

1.4

Ans

From my opinion, my coffee shop needs to be RBAC (Role based access control) so that we can apply roles for different users. Below is a Access Control Matrix

	Bathroom	Reception	Sleeping Boxes	Manager's room	Coffee Service Are	Place to Sit
Barista	✓				✓	✓
Chula's student	✓		✓			✓
Chula's officer	✓		✓			✓
Outsider (Non-member)	✓					✓ (Need to pay fee)
Manager	✓	✓		✓	✓	✓
Receptionist	✓	✓				✓

Part 2

Assuming that you are now in charge of a new Registration Systems of Chulalongkorn University, please finish the following exercise.

2.1

The registration systems of chulalongkorn university need to have several roles

Name	Role
Administrator	Admin
Officer	Staff
Teacher	Teacher
Student	Member
Advisor	Advisor

2.2

For resources that you can find in the registration system, you can find in the below table.

- Student - Profile Section
- Course Database
- CUD Course Section
- Courses List
- Support
- Student - Grade Section
- Student - Course Management Section
- Teacher - Profile
- Teacher -Course Section
- Student - Course Schedule
- Student - My Advisor
- Teacher - Who is my apprentice section
- Officer - Add advisor for teacher section

2.3

Function	Resource
Edit Student's profile	Student - Profile Section
Search and view list of courses	Courses
Create, Update, or Delete Course detail	CUD section
View your grade	Student - Grade Section
Ask for help	Support

Function	Resource
Edit Course curriculum	Student - Course Management Section
Edit teacher profile	Teacher - Profile Section
View your course	Teacher - Course Section
View your course schedule	Student - Course Schedule
View my apprentice	Teacher- Who is my apprentice section
View my advisor	Student - My advisor
Assign advisor for student	Officer - Add advisor for teacher section

2.4

Below is a Access Control Matrix that derive from all of resources and roles in my registration system:

Role / Resource	Student-Profile Section	Course Database	CUD Course Section	Courses List	Support	Student-Grade Section	Student-Course Management Section	Teacher-Profile	Teacher-Course Section	Student-Course Schedule	Student-My Advisor	Teacher-Who is my apprentice Section	Officer-Add Advisor for teacher section
Administrator		Read / Write	Write	Read	Write		Read		Read	Read	Read	Read	Write
Officer			Write	Read	Write		Read		Read	Read	Read	Read	Write
Teacher				Read	Read/Write			Read/Write	Read			Read	
Student	Read/Write			Read	Read/Write	Read	Write			Read	Read		