Potential ways to store all users' general information

UserName	Email	User Type	Password	Status	Name	Age	Emergency Contact	Assigned Doctor	Condition
admin1	admin@ucl	ADM	*****	active					
doctor1	john@ucl	DOC	***	acitve	John	40			
doctor2	jack@ucl	DOC	***	active	Jack	34			
patient1	mary@somewhere	PAT	***	active	Mary	25	m@some	doctor1	anxiety
patient2	bob@somewhere	PAT	**	active	Bob	55	b@some	doctor1	happy
patient3	steve@somewhere	PAT	*****	disabled	Steve	43	s@some	doctor2	anxiety
patient4	daniel@somewhere	PAT	*	active	Daniel	27	d@some	doctor2	anxiety

Class: User

SubClass: Admin

SubClass: Doctor

SubClass: Patient

Potential ways to store doctors' data

One way to save timetable is have a long list of data

TimeTable	Jan-1 9am	Jan-1 10am	Jan-1 11am	Jan-1 12am	Jan-1 1pm	Jan-1 2pm	Jan-1 3pm	Jan-1 4pm	Jan-1 5pm	Jan-2 9am	Jan-2 10am	Jan-2 11am	..
doctor1	1	0	0	1	0	1	0	1	0	1	1	..	
doctor2	0	0	0	0	0	1	1	1	1	1	0	..	
doctor3	1	1	1	1	1	1	0	0	0	0	1	..	

Or, maybe we can have some more advanced data structures such as dictionary

TimeTable	
doctor1	{"Jan-1": [1,0,0,1,0,0,1,1,0], "Jan-2": [1,0,0,1,0,0,1,1,0], "Jan-3": [1,0,0,1,0,0,1,1,0], "Jan-4":[1,0,0,1,0,0,1,1,0]}
doctor2	{"Jan-1": [1,0,0,1,0,0,1,1,0], "Jan-2": [1,0,0,1,0,0,1,1,0], "Jan-3": [1,0,0,1,0,0,1,1,0], "Jan-4":[1,0,0,1,0,0,1,1,0]}
doctor3	{"Jan-1": [1,0,0,1,0,0,1,1,0], "Jan-2": [1,0,0,1,0,0,1,1,0], "Jan-3": [1,0,0,1,0,0,1,1,0], "Jan-4":[1,0,0,1,0,0,1,1,0]}

Potential ways of saving booking information (to retrieve booking data, may need some search/index function)

Doctor	Patient	Book Time
doctor1	patient3	Jan-1-10am
doctor2	patient1	Jan-2-2pm
doctor2	patient2	Jan-1-5pm
…	…	…

Potential ways to store patients' data

MoodRecord	Jan-1	Jan-2	Jan-3	Jan-4	Jan-5	..
patient1	-	-	-	[3, comment]	[4, comment]	..
patient2	[5, comment]	[5, comment]	[1, comment]	[1, comment]	[5, comment]	..
patient3	[1, comment]	[2, comment]	[3, comment]	[4, comment]	[5, comment]	..

Patient	Journal text	JuornalTime
patient3	"feel good"	Jan-1-8am
patient1	"weather is bad"	Jan-2-3pm
patient2	"need to study now"	Jan-5-4pm
...		...

Excercise	category
exercise1	soothing
exercise2	inspiring
exercise3	soothing
...	

Maybe we also need a table for patients' exercise record?

Additional things need to consider regrading data

1. What data structure should we use for each table :
(different tables could have different data structures)

- Pandas
- Dictionary/List/Tuple

2. How to save and retrieve data in python:

- we can treat data as independent class (i.e., we save all the data in several tables, and retrieve data in the way similar to SQL)
- or potentially, save the data within each class objects (e.g., for “patient1” within user class, it can store attribute values such as name, password, email and age. When these data are needed, we can use syntax such as “patient1.name” to retrieve these data)

3. How to save and load data to/from local space:

- Potentially using JSON, CSV or TXT
- When opening the program, shall we load all the data into the memory all in once for faster retrieval?