

UECS1104/1144 Object-Oriented Application Development Group Assignment

Name & Course: 1. **Yin Kar Kin (SE) Leader**
 2. Lim Yen Khai (SE)
 3. Hannah Tan E-Ling (AM)
 4. Ho Jie Kai (AM)

	Component	Missing	Poor	Average	Good	Excellent	Max Marks	Marks Obtained
Part 2	System Requirements Specification						10	
Part 3	Class Diagram (Notation used, relationship, multiplicities)						20	
Part 4	Implementation/Functionalities						40	
	File Handling						5	
	Exception Handling						5	
	Sample of Input data						5	
	Sample Output (Screenshot)						5	
	Presentation / General Effort						10	
Total							100	
Remarks (for Examiner only):								

SYSTEM REQUIREMENT SPECIFICATIONS

The system is a private dental clinic appointment system. The system is to be intuitive and allow doctors and patients to carry out basic functionalities related to dental appointments. Two system Admins will have access to Doctor management functionalities and be able to view details about all system users.

1. FUNCTIONALITIES OVERVIEW

- Consist of 3 User types: Patient, Doctor and Admin
- Each user has their own User menu with general functions shared by all users as well as their own unique functions

2. REGISTER

- New Patient will be able to register themselves with the system
- New Doctor will only be added into the system by Admin

3. VIEW ACCOUNT DETAILS

- Patient & Doctor will be able to view their own account details

4. VIEW DOCTOR/PATIENT LIST

- Patient will be able to view a list of all Doctor's details registered in the system
- Doctor will be able to view a list of all Patient's details registered in the system
- Admin will be able to view both list of all Doctor and Patient's details registered in the system

5. NEW APPOINTMENT

- Both Patient and Admin will be able to book a new dental appointment
- Patient will be able to select desired doctor, date and available timeslot
- Admin will be able to do the same with added step of entering Patient name

6. CANCEL APPOINTMENT

- Patient will be able to cancel their own upcoming appointments
- Admin will be able to cancel any upcoming appointments

7. VIEW APPOINTMENTS (UPCOMING/PAST)

- Patient will be able to view their own upcoming and past appointments
- Doctor will be able to view their own upcoming and their own Patient's past appointments
- Admin will be able to view a grouped list of all upcoming and past appointments made in the system

SAMPLE OUTPUT (OVERALL FLOW)

1. User Login Menu

```
-----  
LYTH Private Dental Clinic Appointment System  
-----  
  
--LOGIN MENU--  
ENTER (1) to register a new Patient account  
Already have an account?  
Enter (2) to login  
Enter (3) to exit  
Please enter your choice: |
```

1.1. Patient registration

```
-----  
LYTH Private Dental Clinic Appointment System  
-----  
  
--LOGIN MENU--  
ENTER (1) to register a new Patient account  
Already have an account?  
Enter (2) to login  
Enter (3) to exit  
Please enter your choice: 1  
  
--REGISTER NEW PATIENT ACCOUNT--  
Please enter full name as in IC: patient 5  
Please enter username: patient5login  
Please enter password: patient5pass  
Please enter phone number: 0125555555  
Please enter IC number: 555555555555  
Registration done!
```

If username is already existed

```
--LOGIN MENU--
ENTER (1) to register a new Patient account
Already have an account?
Enter (2) to login
Enter (3) to exit
Please enter your choice: 1

--REGISTER NEW PATIENT ACCOUNT--
Please enter full name as in IC: patient 5
Please enter username: patient1login
Username used. Please enter another username!
Please enter username: patient2login
Username used. Please enter another username!
Please enter username:
```

1.2. Patient Login

```
--LOGIN MENU--
ENTER (1) to register a new Patient account
Already have an account?
Enter (2) to login
Enter (3) to exit
Please enter your choice: 2

--USER TYPE--
(1) Patient
(2) Doctor
(3) Admin
Please enter user type(1 to 3): 1

--PATIENT LOGIN PAGE--
Enter username: patient1login
Enter password: patient1pass

Welcome patient 1
```

1.3. Doctor Login

```
--LOGIN MENU--  
ENTER (1) to register a new Patient account  
Already have an account?  
Enter (2) to login  
Enter (3) to exit  
Please enter your choice: 2  
  
--USER TYPE--  
(1) Patient  
(2) Doctor  
(3) Admin  
Please enter user type(1 to 3): 2  
  
--DOCTOR LOGIN PAGE--  
Enter username: doctor2login  
Enter password: doctor2pass  
  
Welcome doctor 2
```

1.4. Admin Login

```
--LOGIN MENU--  
ENTER (1) to register a new Patient account  
Already have an account?  
Enter (2) to login  
Enter (3) to exit  
Please enter your choice: 2  
  
--USER TYPE--  
(1) Patient  
(2) Doctor  
(3) Admin  
Please enter user type(1 to 3): 3  
  
--ADMIN LOGIN PAGE--  
Enter username: admin1login  
Enter password: admin1pass  
  
Welcome admin 1
```

If user account not existed / wrong username or password

```
--LOGIN MENU--
ENTER (1) to register a new Patient account
Already have an account?
Enter (2) to login
Enter (3) to exit
Please enter your choice: 2

--USER TYPE--
(1) Patient
(2) Doctor
(3) Admin
Please enter user type(1 to 3): 2

--DOCTOR LOGIN PAGE--
Enter username: doctor4login
Enter password: doctor2pass

NO MATCH FOUND, PLEASE ENSURE USERNAME AND PASSWORD ARE CORRECT

--LOGIN MENU--
ENTER (1) to register a new Patient account
Already have an account?
Enter (2) to login
Enter (3) to exit
Please enter your choice: 2
```

If input data type is wrong

```
--LOGIN MENU--
ENTER (1) to register a new Patient account
Already have an account?
Enter (2) to login
Enter (3) to exit
Please enter your choice: 2

--USER TYPE--
(1) Patient
(2) Doctor
(3) Admin
Please enter user type(1 to 3): Doctor
Invalid input. Please enter numbers only. Try again!
```

If input integer is out of range

```
--LOGIN MENU--  
ENTER (1) to register a new Patient account  
Already have an account?  
Enter (2) to login  
Enter (3) to exit  
Please enter your choice: 4  
Invalid number. 1-3 only. Try again!  
Please enter your choice: 2
```

2. Patient User Flow

2.1. Patient User Menu

```
Welcome patient 1

--PATIENT MENU--
(1) New appointment
(2) View account details
(3) View pending appointments|
(4) View appointment history
(5) View Doctor list
(6) Cancel appointment
(7) Exit
Choose between 1 to 7:
```

If the input data is invalid

```
Welcome patient 1

--PATIENT MENU--
(1) New appointment
(2) View account details
(3) View pending appointments
(4) View appointment history
(5) View Doctor list
(6) Cancel appointment
(7) Exit
Choose between 1 to 7: 8
Invalid number. 1-7 only. Try again!
Choose between 1 to 7: Cancel appointment
Invalid input. Please enter numbers only. Try again!
Choose between 1 to 7:
```


2.2. New appointment

```
--PATIENT MENU--
(1) New appointment
(2) View account details
(3) View pending appointments
(4) View appointment history
(5) View Doctor list
(6) Cancel appointment
(7) Exit
Choose between 1 to 7: 1

--NEW APPOINTMENT--
Please enter doctor name: doctor 1
Please enter year(20XX): 2021
Please enter month: 9
Please enter day (we only work until the 28th of every month): 17
Available slots are:
(1) 10:00AM - 11:00AM
(2) 11:00AM - 12:00PM
(3) 1:00PM - 2:00PM
(4) 2:00PM - 3:00PM
(5) 3:00PM - 4:00PM
Select a time slot(available slot numbers only): 2

Successfully booked Appointment!
```

If a slot is already taken

```
--PATIENT MENU--
(1) New appointment
(2) View account details
(3) View pending appointments
(4) View appointment history
(5) View Doctor list
(6) Cancel appointment
(7) Exit
Choose between 1 to 7: 1

--NEW APPOINTMENT--
Please enter doctor name: doctor 1
Please enter year(20XX): 2021
Please enter month: 9
Please enter day (we only work until the 28th of every month): 17
Available slots are:
(1) 10:00AM - 11:00AM
(3) 1:00PM - 2:00PM
(4) 2:00PM - 3:00PM
(5) 3:00PM - 4:00PM
Select a time slot(available slot numbers only): 4

Successfully booked Appointment!
```

If input data is invalid

```
--NEW APPOINTMENT--
Please enter doctor name: doctor 4
This doctor name not found.
Please enter doctor name: doctor 1
Please enter year(20XX): 2000
Invalid year. Only input 2021 or later. Try again.
Please enter year(20XX): 2021
Please enter month(mm): 13
Invalid month. Please book for future dates only. Try again.
Please enter month(mm): 9
Please enter day(dd) (we only work until the 28th of every month): 29
Invalid day. Please book for future dates only. Try again.
Please enter day(dd) (we only work until the 28th of every month): 17
Available slots are:
(1) 10:00AM - 11:00AM
(3) 1:00PM - 2:00PM
(4) 2:00PM - 3:00PM
(5) 3:00PM - 4:00PM
Select a time slot(available slot numbers only): 6
Slot unavailable. Select available slot numbers only. Try again!
Select a time slot(available slot numbers only): 4
|
Successfully booked Appointment!
```

2.3. View account details

```
--PATIENT MENU--
(1) New appointment
(2) View account details
(3) View pending appointments
(4) View appointment history
(5) View Doctor list
(6) Cancel appointment
(7) Exit
Choose between 1 to 7: 2
|
--ACCOUNT DETAILS--
Name: patient 1
User Type: PATIENT
Username: patient1login
Phone Number: 0121111111
```

2.4. View pending appointments

```
--PATIENT MENU--
(1) New appointment
(2) View account details
(3) View pending appointments
(4) View appointment history
(5) View Doctor list
(6) Cancel appointment
(7) Exit
Choose between 1 to 7: 3

-----APPOINTMENT LIST-----
BIL  PATIENT NAME      DOCTOR NAME      APPOINTMENT ID    DATE      TIME SLOT
-----
1    patient 1         doctor 1          DAID2021910       2021/9/10   (1) 10:00AM - 11:00AM
2    patient 1         doctor 1          DAID2021917       2021/9/17   (2) 11:00AM - 12:00PM
3    patient 1         doctor 1          DAID2021917       2021/9/17   (4) 2:00PM - 3:00PM
```

2.5. View appointment history

FOUND

```
--PATIENT MENU--
(1) New appointment
(2) View account details
(3) View pending appointments
(4) View appointment history
(5) View Doctor list
(6) Cancel appointment
(7) Exit
Choose between 1 to 7: 4

-----APPOINTMENT LIST-----
BIL  PATIENT NAME      DOCTOR NAME      APPOINTMENT ID    DATE      TIME SLOT
-----
1    patient 1         doctor 2          DAID2021816       2021/8/16   (5) 3:00PM - 4:00PM
```

NOT FOUND

```
--PATIENT MENU--
(1) New appointment
(2) View account details
(3) View pending appointments
(4) View appointment history
(5) View Doctor list
(6) Cancel appointment
(7) Exit
Choose between 1 to 7: 4

NO APPOINTMENT HISTORY FOUND.
```

2.6. View Doctor list

```
--PATIENT MENU--
(1) New appointment
(2) View account details
(3) View pending appointments
(4) View appointment history
(5) View Doctor list
(6) Cancel appointment
(7) Exit
Choose between 1 to 7: 5

-----DOCTOR LIST-----
BIL  NAME                USERNAME             SPECIALTY            CREDENTIALS          PHONE NUMBER
-----
1    doctor 1             doctor1login         specialty1           credentials1          0161111111
2    doctor 2             doctor2login         specialty2           credentials2          0162222222
3    doctor 3             doctor3login         specialty3           credentials3          0163333333
```

2.7. Cancel appointment

```
--PATIENT MENU--
(1) New appointment
(2) View account details
(3) View pending appointments
(4) View appointment history
(5) View Doctor list
(6) Cancel appointment
(7) Exit
Choose between 1 to 7: 6

--Cancel Appointment--
Please enter appointment ID: DAID2021910
Sucessfully cancelled Appointment!
```

Perform 2.4 View pending appointments

```
--PATIENT MENU--
(1) New appointment
(2) View account details
(3) View pending appointments
(4) View appointment history
(5) View Doctor list
(6) Cancel appointment
(7) Exit
Choose between 1 to 7: 3

-----APPOINTMENT LIST-----
BIL  PATIENT NAME          DOCTOR NAME          APPOINTMENT ID       DATE                TIME SLOT
-----
1    patient 1             doctor 1              DAID2021917          2021/9/17          (3) 1:00PM - 2:00PM
```

If appointment not found

```
--Cancel Appointment--  
Please enter appointment ID: daid202222  
This appointment ID not found
```

2.8. Exit / Logout Patient Menu

```
--PATIENT MENU--  
(1) New appointment  
(2) View account details  
(3) View pending appointments  
(4) View appointment history  
(5) View Doctor list  
(6) Cancel appointment  
(7) Exit  
Choose between 1 to 7: 7  
  
--LOGIN MENU--  
ENTER (1) to register a new Patient account  
Already have an account?  
Enter (2) to login  
Enter (3) to exit  
Please enter your choice:
```

3. Doctor User Flow

3.1. Doctor Menu

```
Welcome doctor 2

--DOCTOR MENU--
(1) View account details
(2) View pending appointments
(3) View appointment history of own Patient
(4) View Patient list
(5) Exit
Choose between 1 to 5:
```

3.2. View account details

```
--DOCTOR MENU--
(1) View account details
(2) View pending appointments
(3) View appointment history of own Patient
(4) View Patient list
(5) Exit
Choose between 1 to 5: 1

--ACCOUNT DETAILS--
Name: doctor 2
User Type: DOCTOR
Username: doctor2login
Specialty: specialty2
Credentials: credentials2
Phone Number: 0162222222
```

3.3. View pending appointments

```
--DOCTOR MENU--
(1) View account details
(2) View pending appointments
(3) View appointment history of own Patient
(4) View Patient list
(5) Exit
Choose between 1 to 5: 2
|
-----APPOINTMENT LIST-----
BIL  PATIENT NAME      DOCTOR NAME      APPOINTMENT ID    DATE      TIME SLOT
-----
1    patient 3         doctor 2         DAID20211011      2021/10/11    (4) 2:00PM - 3:00PM
```

3.4. View appointment history of own Patient

FOUND

```
--DOCTOR MENU--
(1) View account details
(2) View pending appointments
(3) View appointment history of own Patient
(4) View Patient list
(5) Exit
Choose between 1 to 5: 3
PATIENT NAME: patient 3
-----APPOINTMENT LIST-----
BIL  PATIENT NAME      DOCTOR NAME      APPOINTMENT ID    DATE      TIME SLOT
-----
1    patient 3         doctor 2         DAID2021720       2021/7/20     (2) 11:00AM - 12:00PM
```

NOT FOUND

```
--DOCTOR MENU--
(1) View account details
(2) View pending appointments
(3) View appointment history of own Patient
(4) View Patient list
(5) Exit
Choose between 1 to 5: 3
PATIENT NAME: patient 3

NO APPOINTMENT HISTORY FOUND.
```

3.5. View Patient list

```
--DOCTOR MENU--
(1) View account details
(2) View pending appointments
(3) View appointment history of own Patient
(4) View Patient list
(5) Exit
Choose between 1 to 5: 4
```

```
-----PATIENT LIST-----
BIL  NAME                USERNAME                IC NUMBER              PHONE NUMBER
-----
1    patient 1           patient1login           111111111111          0121111111
2    patient 2           patient2login           222222222222          0122222222
3    patient 3           patient3login           333333333333          0123333333
4    patient 4           patient4login           444444444444          0124444444
```

3.6. Exit / Logout Doctor Menu

```
--DOCTOR MENU--
(1) View account details
(2) View pending appointments
(3) View appointment history of own Patient
(4) View Patient list
(5) Exit
Choose between 1 to 5: 5
|
--LOGIN MENU--
ENTER (1) to register a new Patient account
Already have an account?
Enter (2) to login
Enter (3) to exit
Please enter your choice:
```


4. Admin User Flow

4.1. Admin Menu

```
Welcome admin 1

--ADMIN MENU--
(1) Add doctor
(2) New appointment
(3) View Patient List
(4) View doctor list
(5) View appointment list
(6) Cancel appointment
(7) Exit
Choose between 1 to 7:
```

4.2. Add doctor

```
--ADMIN MENU--
(1) Add doctor
(2) New appointment
(3) View Patient List
(4) View doctor list
(5) View appointment list
(6) Cancel appointment
(7) Exit
Choose between 1 to 7: 1

--REGISTER NEW DOCTOR ACCOUNT--
Please enter doctor's name : doctor 4
Please enter username : doctor4login
Please enter password : doctor4pass
Please enter phone number : 0164444444
Please enter doctor's specialty : specialty4
Please enter doctor's credentials : credentials4
Registration done!
```

If username is used

```
--ADMIN MENU--
(1) Add doctor
(2) New appointment
(3) View Patient list
(4) View doctor list
(5) View appointment list
(6) Cancel appointment
(7) Exit
Choose between 1 to 7: 1

--REGISTER NEW DOCTOR ACCOUNT--
Please enter doctor's name : doctor 4
Please enter username : doctor2login
Username used. Please enter another username!
Please enter username : doctor4login
Please enter password : doctor4pass
Please enter phone number : 0164444444
Please enter doctor's specialty : specialty4
Please enter doctor's credentials : credentials4
Registration done!
```

4.3.New appointment

```
--ADMIN MENU--
(1) Add doctor
(2) New appointment
(3) View Patient list
(4) View doctor list
(5) View appointment list
(6) Cancel appointment
(7) Exit
Choose between 1 to 7: 2

--NEW APPOINTMENT--
Please enter patient name: patient 2
Please enter doctor name: doctor 2
Please enter year(20XX): 2021
Please enter month: 7
Invalid month. Try again.
Please enter month: 9
Please enter day (we only work until the 28th of every month): 15
Available slots are:
(1) 10:00AM - 11:00AM
(2) 11:00AM - 12:00PM
(3) 1:00PM - 2:00PM
(4) 2:00PM - 3:00PM
(5) 3:00PM - 4:00PM
Select a time slot(available slot numbers only): 2
|
Successfully booked Appointment!
```

If slot is already taken

```
--ADMIN MENU--
(1) Add doctor
(2) New appointment
(3) View Patient list
(4) View doctor list
(5) View appointment list
(6) Cancel appointment
(7) Exit
Choose between 1 to 7: 2

--NEW APPOINTMENT--
Please enter patient name: doctor 1
This patient name not found
Please enter patient name: patient 1
Please enter doctor name: doctor 1
Please enter year(20XX): 2021
Please enter month: 9
Please enter day (we only work until the 28th of every month): 17
Available slots are:
(1) 10:00AM - 11:00AM
(3) 1:00PM - 2:00PM
(5) 3:00PM - 4:00PM
Select a time slot(available slot numbers only): 3

Successfully booked Appointment!
```

If input data is invalid

```
--NEW APPOINTMENT--
Please enter patient name: patient 7
This patient name not found
Please enter patient name: patient 3
Please enter doctor name: doctor 7
This doctor name not found
Please enter doctor name: doctor 2
Please enter year(20XX): 1999
Invalid year. Only input 2021 or later. Try again.
Please enter year(20XX): 2021
Please enter month(mm): 13
Invalid month. Please book for future dates only. Try again.
Please enter month(mm): 9
Please enter day(dd) (we only work until the 28th of every month): 99
Invalid day. Please book for future dates only. Try again.
Please enter day(dd) (we only work until the 28th of every month): 20
Available slots are:
(1) 10:00AM - 11:00AM
(2) 11:00AM - 12:00PM
(3) 1:00PM - 2:00PM
(4) 2:00PM - 3:00PM
(5) 3:00PM - 4:00PM
Select a time slot(available slot numbers only): 7
Slot unavailable. Select available slot numbers only. Try again:
Select a time slot(available slot numbers only): 4

Successfully booked Appointment!
```

4.4.View Patient list

```
--ADMIN MENU--
(1) Add doctor
(2) New appointment
(3) View Patient list
(4) View doctor list
(5) View appointment list
(6) Cancel appointment
(7) Exit
Choose between 1 to 7: 3

-----PATIENT LIST-----
BIL  NAME                USERNAME                IC NUMBER              PHONE NUMBER
-----
1    patient 1            patient1login           111111111111          0121111111
2    patient 2            patient2login           222222222222          0122222222
3    patient 3            patient3login           333333333333          0123333333
4    patient 4            patient4login           444444444444          0124444444
```

4.5.View Doctor list

```
--ADMIN MENU--
(1) Add doctor
(2) New appointment
(3) View Patient list
(4) View doctor list
(5) View appointment list
(6) Cancel appointment
(7) Exit
Choose between 1 to 7: 4

-----DOCTOR LIST-----
BIL  NAME                USERNAME                SPECIALTY              CREDENTIALS            PHONE NUMBER
-----
1    doctor 1            doctor1login            specialty1              credentials1            0161111111
2    doctor 2            doctor2login            specialty2              credentials2            0162222222
3    doctor 3            doctor3login            specialty3              credentials3            0163333333
4    doctor 4            doctor4login            specialty4              credentials4            0164444444
```

4.6.View appointment list

```
--ADMIN MENU--
(1) Add doctor
(2) New appointment
(3) View Patient list
(4) View doctor list
(5) View appointment list
(6) Cancel appointment
(7) Exit
Choose between 1 to 7: 5

-----APPOINTMENT LIST-----
BIL  PATIENT NAME      DOCTOR NAME      APPOINTMENT ID    DATE      TIME SLOT
-----
1    patient 2        doctor 1         DAID2021513       2021/5/13   (3) 1:00PM - 2:00PM
2    patient 1        doctor 2         DAID2021816       2021/8/16   (5) 3:00PM - 4:00PM
3    patient 3        doctor 2         DAID2021720       2021/7/20   (2) 11:00AM - 12:00PM
4    patient 1        doctor 1         DAID2021910       2021/9/10   (2) 11:00AM - 12:00PM
5    patient 1        doctor 1         DAID2021917       2021/9/17   (3) 1:00PM - 2:00PM
6    patient 3        doctor 2         DAID20211011      2021/10/11   (4) 2:00PM - 3:00PM
7    patient 2        doctor 1         DAID20211012      2021/10/12   (4) 2:00PM - 3:00PM
8    patient 2        doctor 2         DAID2021915       2021/9/15   (3) 1:00PM - 2:00PM
```

4.7.Cancel appointment

```
--ADMIN MENU--
(1) Add doctor
(2) New appointment
(3) View Patient list
(4) View doctor list
(5) View appointment list
(6) Cancel appointment
(7) Exit
Choose between 1 to 7: 6

--Cancel Appointment--
Please enter appointment ID: DAID2021915
Sucessfully cancelled Appointment!
```

Perform 4.6 View appointment list

```
-----APPOINTMENT LIST-----
BIL  PATIENT NAME      DOCTOR NAME      APPOINTMENT ID    DATE      TIME SLOT
-----
1    patient 2        doctor 1         DAID2021513       2021/5/13   (3) 1:00PM - 2:00PM
2    patient 1        doctor 2         DAID2021816       2021/8/16   (5) 3:00PM - 4:00PM
3    patient 3        doctor 2         DAID2021720       2021/7/20   (2) 11:00AM - 12:00PM
4    patient 1        doctor 1         DAID2021910       2021/9/10   (2) 11:00AM - 12:00PM
5    patient 1        doctor 1         DAID2021917       2021/9/17   (3) 1:00PM - 2:00PM
6    patient 3        doctor 2         DAID20211011      2021/10/11   (4) 2:00PM - 3:00PM
7    patient 2        doctor 1         DAID20211012      2021/10/12   (4) 2:00PM - 3:00PM
```

4.8. Exit / Logout Admin Menu

```
--ADMIN MENU--
(1) Add doctor
(2) New appointment
(3) View Patient list
(4) View doctor list
(5) View appointment list
(6) Cancel appointment
(7) Exit
Choose between 1 to 7: 7

--LOGIN MENU--
ENTER (1) to register a new Patient account
Already have an account?
Enter (2) to login
Enter (3) to exit
Please enter your choice: |
```

5. Exit system

```
--LOGIN MENU--
ENTER (1) to register a new Patient account
Already have an account?
Enter (2) to login
Enter (3) to exit
Please enter your choice: 3
Thank you for using this system!
```