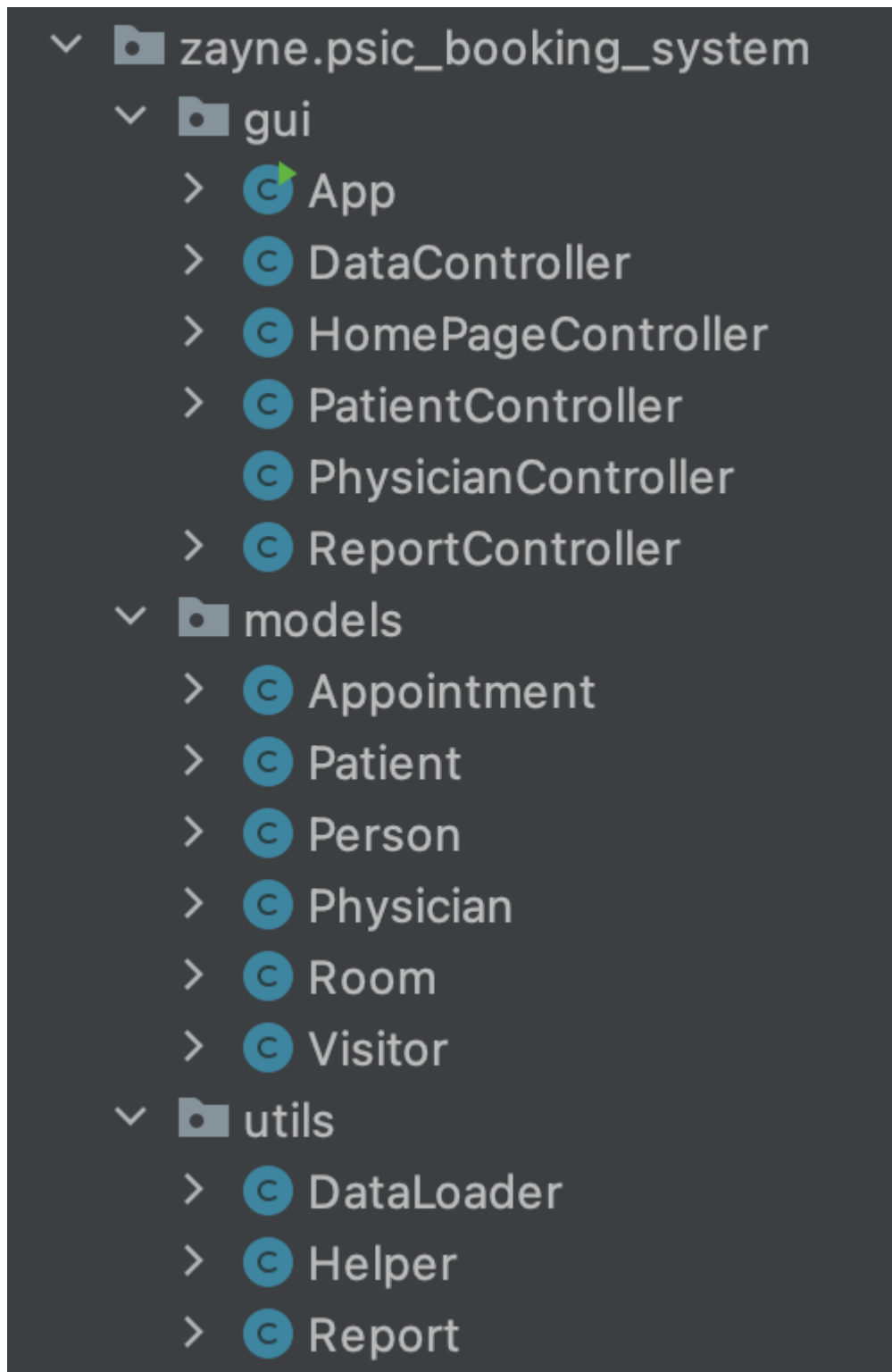


Report

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Structure

This application consist of three packages, being `gui`, `models`, `utils` (as shown in the figure below).



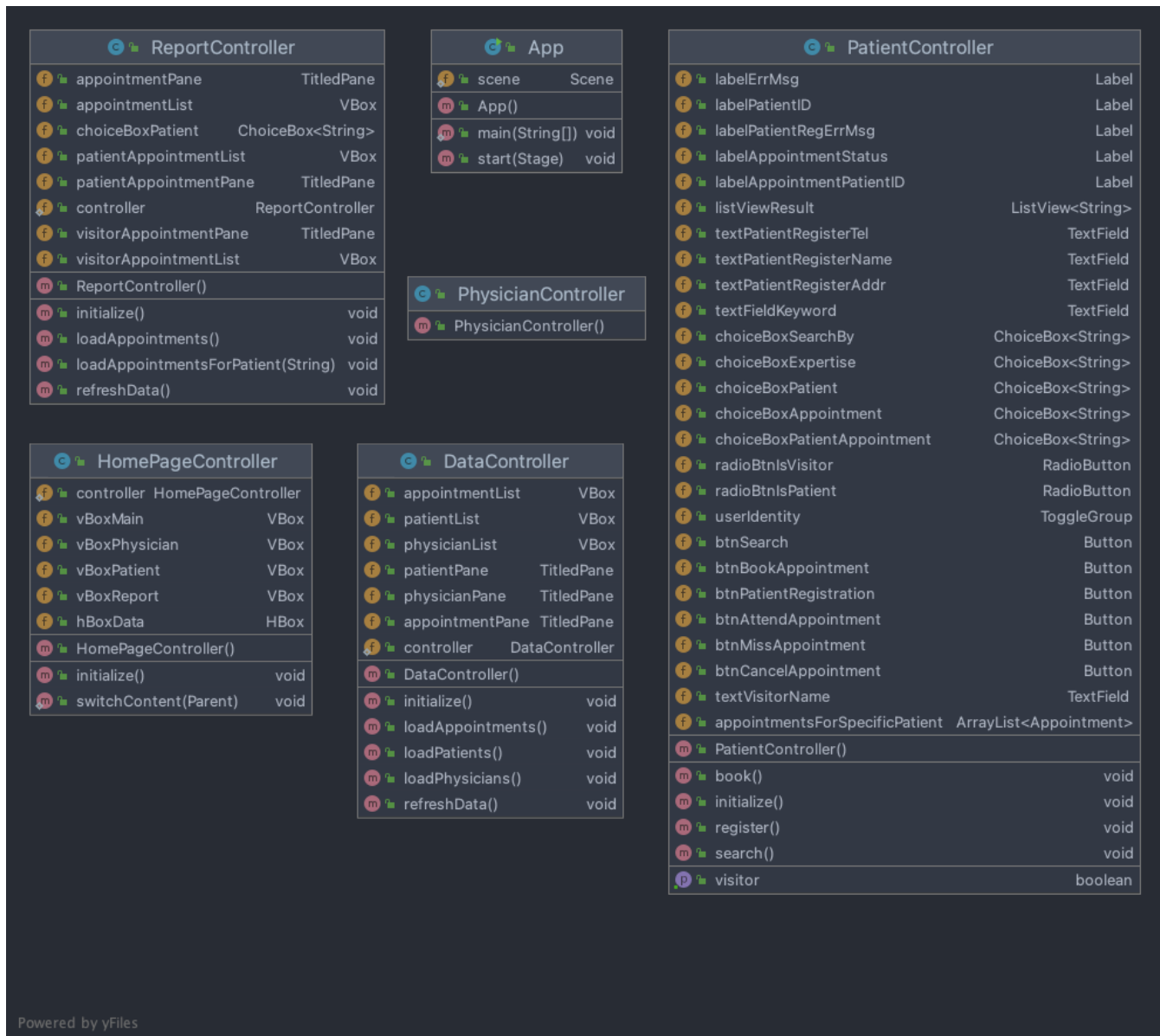
where: `gui` is in charge of the GUI part of the application.

`models` has the classes with specific implementations.

`utils` is used for refactoring purposes.

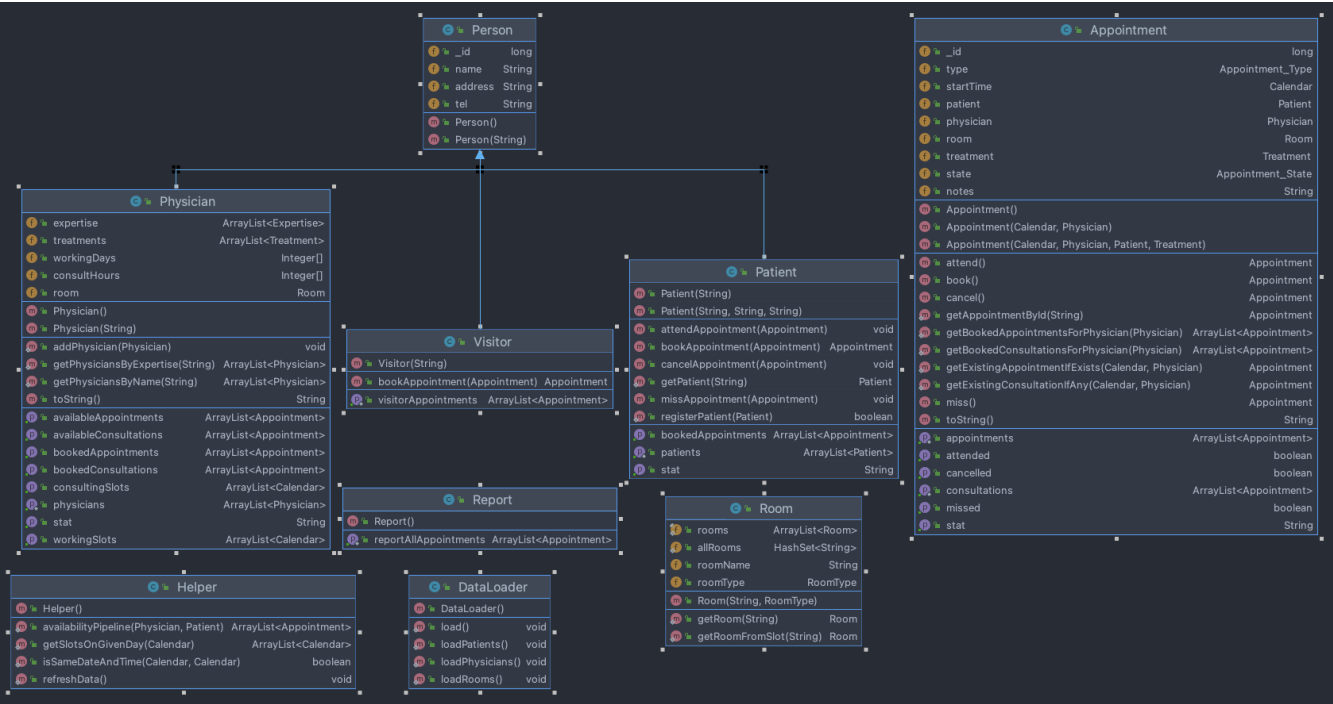
UML

GUI UML



Powered by yFiles

System UML



Design assumptions

based on the given requirement document, the following assumptions are made.

- Physician
 - Each physician work 2 days per week.
 - The working hours are 10:00 - 18:00.
 - Working days are Monday to Friday each week.
 - Each physician only have one are of expertise.
 - Each physician only have 1 area of expertise.
- Rooms
 - Each physician has a fixed room for their treatments.
- Appointments
 - Each appointment has a fixed duration of 2hrs.
 - Each consultation has a fixed duration of 30min.
 - Consultation and general appointment are differentiated by the `patient` field in `Appointments`, if `appointment.patient == null`, then this appointment is a consultation appointment.
- Patients
 - Patients are identified with their `_id` s rather than names (i.e. patients with the same name are allowed to register)
- Visitors (see `Patient` part)

Refactoring

Most of the logics and functions are refactored after the initial implementation, or during coding. Method extraction, abstraction are used to refactor the code.

However, due to the time constraint, there are still some part of the application are yet refactored. Refactoring process will continue to be prioritised in the future of this project.

`Observer Design Pattern` was planned but yet implemented due to the time constraint. which will also be implemented in the future update of this application.

Tools

This project is developed using JDK 15, there might be issues where the application won't run due to incompatible JDK version.

- Java 15+
- JavaFX
- Maven
- GitHub (git)
- IntelliJ IDEA
- macOS

(!!!This project is developed and tested on macOS machines where it runs without any issue. As I don't have a Windows machine at my disposal, multiple platform support was NOT tested!!!)

!!Note!!

To run or build this project.

```
# clone the repo from GitHub.
# https://github.com/ZayneLiu/PSIC-BookingSystem.git
git clone https://github.com/ZayneLiu/PSIC-BookingSystem.git

cd PSIC-BookingSystem

# Install dependencies
mvn clean install

# To run the JavaFX application.
mvn clean javafx:run

# To build executable jar file.
mvn clean package onejar:one-jar

# then the jar file should be generated under ./target
# the one ends with `one-jar.jar` is the executable jar file.
```

Git Log

```
* 7d089ad - (HEAD -> main, origin/main) Added tests (Wed May 12 20:03:17 2021) <Zayne>
* d27542e - New features added (#2) (Wed May 12 19:31:07 2021) <Zayne>
* 73af6d2 - Create Report.md (Wed May 12 16:16:47 2021) <Zayne>
* 41ef5be - Visitor done (Wed May 12 16:14:24 2021) <Zayne>
* a1cdac5 - Wrapped for testing (Wed May 12 13:27:55 2021) <Zayne>
* 72515ee - Update Helper.java (Wed May 12 13:12:39 2021) <Zayne>
* 87184d3 - update tests (Wed May 12 13:12:23 2021) <Zayne>
* ae70ff7 - Revert "Update Helper.java" (Wed May 12 12:34:07 2021) <Zayne>
* 33d5c84 - Revert "Update Helper.java" (Wed May 12 12:33:55 2021) <Zayne>
* 40e5dd5 - Update Helper.java (Wed May 12 12:33:47 2021) <Zayne>
* f993a19 - Calendar bug fix (Wed May 12 12:33:07 2021) <Zayne>
* 71f5eec - remove json stuff (Wed May 12 12:30:30 2021) <Zayne>
```

```

* ad78dd7 - Update PatientController.java (Tue May 11 08:39:14 2021) <Zayne Liu>
* 955de3e - Added function support for Appointment state switching (Tue May 11 01:11:09 2021) <Zayne Liu>
* db78f55 - Added functions to avoid parallel appointments when booking. (Tue May 11 00:02:56 2021) <Zayne Liu>
* 9255da9 - Added expertise and treatments display `DataController` for physicians. (Mon May 10 22:01:14 2021) <Zayne Liu>
* cefb590 - Added search by expertise function. (Mon May 10 21:26:53 2021) <Zayne Liu>
* eb967bb - (origin/refactoring, refactoring) Merge branch 'refactoring' into main (Mon May 10 21:09:42 2021) <Zayne Liu>
\N
| * 9dc4046 - Appointment `search()` refactoring. (Mon May 10 21:07:39 2021) <Zayne Liu>
| ad5f3d9 - Patient registration (Mon May 10 01:00:39 2021) <Zayne Liu>
| 242ce7e - Add handler for null `listResultView` selection. (Mon May 10 00:38:25 2021) <Zayne Liu>
| a92d53b - Added `search` again after appointment booked, fixed display. (Mon May 10 00:29:40 2021) <Zayne Liu>
| d78dea8 - Merge branch 'main' into new_features (Sun May 9 22:37:31 2021) <Zayne Liu>
\N
| * ddbc04e - Extract init data to `DataLoader.java` (Sun May 9 22:36:49 2021) <Zayne Liu>
| * 7036a04 - Appointments booking implemented. several issues fixed. (#1) (Sun May 9 22:22:34 2021) <Zayne>
| 11cfb3b - Fixed display issues. (Sun May 9 22:19:29 2021) <Zayne Liu>
| ed585cb - Fixed a display issue in `DataController.java` (Sun May 9 22:08:46 2021) <Zayne Liu>
| 2350d42 - Update Appointment.java (Sun May 9 22:06:12 2021) <Zayne Liu>
| ccdf29d - Ignore duplicated appointments. (Sun May 9 22:00:02 2021) <Zayne Liu>
| 24d8d6d - Appointment booking and data refresh (Sun May 9 21:13:58 2021) <Zayne Liu>
| a825a2a - Update PatientController.java (Sun May 9 20:25:14 2021) <Zayne Liu>
/
* e794c25 - wrap up (Sun May 9 19:52:50 2021) <Zayne Liu>
* 78634f5 - Ignore implemented advanced feature for now (Sun May 9 18:58:13 2021) <Zayne Liu>
* 7f75727 - Update patient-subsystem.fxml (Sun May 9 18:57:45 2021) <Zayne Liu>
* 1fc30f5 - Update DataLoader.java (Sun May 9 18:57:39 2021) <Zayne Liu>
* ede7313 - Update Appointment.java (Sun May 9 18:56:39 2021) <Zayne Liu>
* 028d438 - Added new expertise and treatments (Sun May 9 18:38:02 2021) <Zayne Liu>
* 17ede7f - Update PatientController.java (Sun May 9 18:36:11 2021) <Zayne Liu>
* 35d3f2f - Update PatientController.java (Sun May 9 17:24:20 2021) <Zayne Liu>
* fb3d8e4 - Update PatientController.java (Sun May 9 17:24:00 2021) <Zayne Liu>
* 70fec0f - Update DataController.java (Sun May 9 17:22:21 2021) <Zayne Liu>
* 55e8594 - reformat (Sun May 9 13:45:31 2021) <Zayne Liu>
* 97bd46c - reformat (Sun May 9 13:45:13 2021) <Zayne Liu>
* 3107f64 - Edited: return type of `book()` in `Appointment` and `Patient` (Thu May 6 17:52:19 2021) <Zayne Liu>
* d333ca2 - Edited: `getAvailablePhysicians()` pipeline (Thu May 6 17:47:45 2021) <Zayne Liu>
* 4b549ba - WIP Init data consolidation (Thu May 6 17:45:18 2021) <Zayne Liu>
* 6a7378f - Update Room.java (Sun May 2 16:29:51 2021) <Zayne Liu>
* d7499da - Added Data visualisation (Sun May 2 16:29:32 2021) <Zayne Liu>
* c541418 - Update Patient.java (Sun May 2 00:45:57 2021) <Zayne Liu>
* 4f98c1f - added UI for Data (Sat May 1 23:00:37 2021) <Zayne Liu>
* f5c6a6b - case changes (Sat May 1 22:59:18 2021) <Zayne Liu>
* 9c7419e - Update Room.java (Thu Apr 29 01:44:13 2021) <Zayne Liu>
* 14763ba - stage (Tue Apr 27 06:56:15 2021) <Zayne Liu>
* d82d072 - Delete .classpath (Mon Apr 26 22:23:55 2021) <Zayne>
* 0f7e072 - Delete .project (Mon Apr 26 22:23:47 2021) <Zayne>
* f8fa1e8 - Patient UI & controller (Mon Apr 26 22:10:31 2021) <Zayne Liu>
* d96f73c - Update .gitignore (Mon Apr 26 22:09:42 2021) <Zayne Liu>
* fa194c8 - relocate tests & remove json (Mon Apr 26 22:07:30 2021) <Zayne Liu>
* d61c3a3 - Update Room.java (Tue Apr 13 22:45:32 2021) <Zayne Liu>
* cd43581 - Back to use JavaFX again (Tue Apr 13 00:36:42 2021) <Zayne Liu>
* 7517a81 - Restructure (Sat Mar 27 02:48:46 2021) <Zayne Liu>
* 1dfda8b - remove `javafx` dependency (Sat Mar 27 02:48:05 2021) <Zayne Liu>
* bbe7a92 - Done: CLI homepage (Wed Mar 24 23:20:40 2021) <Zayne Liu>
* e96724f - Added Appointment (Sun Mar 14 15:34:36 2021) <Zayne Liu>
* d62ffea - Added `searchByExpertise` functionality. (Mon Mar 8 14:59:26 2021) <Zayne Liu>
* 1ef45db - Added searching functionality. (Sun Mar 7 18:59:07 2021) <Zayne Liu>
* 3f11853 - Update Physician.java (Sun Mar 7 18:57:08 2021) <Zayne Liu>
* 1e61c3e - Added `JSONHelper` utility class. (Fri Feb 26 14:04:25 2021) <Zayne Liu>
* b8ee366 - Added `Physician.java` class. (Fri Feb 26 13:59:53 2021) <Zayne Liu>
* 8b9e42a - updated project compiler target to `Java 15`. added `org.json` dependency. (Fri Feb 26 13:48:42 2021) <Zayne Liu>
* 573426e - repo init (Tue Feb 23 16:52:36 2021) <Zayne Liu>
(END)

```

Screenshot

In the event where the `.jar` file I provided won't run properly on the marking machine, the following screenshot will provide some insight to the application itself.

Patient Subsystem

Report

Data

Search By:

Name ▼

 Expertise:

▼

 Name:

☐ Visitor

☒ Patient

▼

Search

Book

▼ Registration

Name: | Tel: | Addr.:

Button

▼ Appointment

Select patient:

▼

 | Select appointment:

▼

Patient ID: | Status:

Attend

Miss

Cancel

Patient Subsystem

Report

Data

Search By:

Name ▾

 Expertise:

▾

 Name:

b

☐ Visitor

☒ Patient

Beasley ▾

Search

3 physicians 118 slots.

05-05 Wed 10:00	Betsy_Hopper	Room-A	Spine_Joints_Mobilisation
05-05 Wed 10:00	Betsy_Hopper	Room-A	Neural_Mobilisation
05-05 Wed 12:00	Betsy_Hopper	Room-A	Spine_Joints_Mobilisation
05-05 Wed 12:00	Betsy_Hopper	Room-A	Neural_Mobilisation
05-05 Wed 14:00	Betsy_Hopper	Room-A	Spine_Joints_Mobilisation
05-05 Wed 14:00	Betsy_Hopper	Room-A	Neural_Mobilisation
05-05 Wed 16:00	Betsy_Hopper	Room-A	Spine_Joints_Mobilisation
05-05 Wed 16:00	Betsy_Hopper	Room-A	Neural_Mobilisation
05-07 Fri 10:00	Betsy_Hopper	Room-A	Spine_Joints_Mobilisation
05-07 Fri 10:00	Betsy_Hopper	Room-A	Neural_Mobilisation
05-07 Fri 12:00	Betsy_Hopper	Room-A	Spine_Joints_Mobilisation
05-07 Fri 12:00	Betsy_Hopper	Room-A	Neural_Mobilisation

Patient ID: 1617745403725

Book

▼ Registration

Name:

Tel:

Addr.:

Button

▼ Appointment

Select patient:

▾

Select appointment:

▾

Patient ID:

Status:

Attend

Miss

Cancel

Patient Subsystem

Report

Data

Search By:

Name ▾

 Expertise:

▾

 Name:

b

☒ Visitor

zayne

☐ Patient

Beasley ▾

Search

3 physicians 48 slots.

05-07	Fri 14:00	Betsy_Hopper	Room-A	Consultation - Osteopathy
05-07	Fri 14:30	Betsy_Hopper	Room-A	Consultation - Osteopathy
05-07	Fri 15:00	Betsy_Hopper	Room-A	Consultation - Osteopathy
05-07	Fri 15:30	Betsy_Hopper	Room-A	Consultation - Osteopathy
05-14	Fri 14:30	Betsy_Hopper	Room-A	Consultation - Osteopathy
05-14	Fri 15:00	Betsy_Hopper	Room-A	Consultation - Osteopathy
05-14	Fri 15:30	Betsy_Hopper	Room-A	Consultation - Osteopathy
05-14	Fri 16:00	Betsy_Hopper	Room-A	Consultation - Osteopathy
05-21	Fri 14:00	Betsy_Hopper	Room-A	Consultation - Osteopathy
05-21	Fri 14:30	Betsy_Hopper	Room-A	Consultation - Osteopathy
05-21	Fri 15:00	Betsy_Hopper	Room-A	Consultation - Osteopathy
05-21	Fri 15:30	Betsy_Hopper	Room-A	Consultation - Osteopathy

Patient ID: 1617745403725

Book

▼ Registration

Name: Tel: Addr.:

Button

▼ Appointment

Select patient:

▾

 Select appointment:

▾

Patient ID: Status:

Attend

Miss

Cancel

Patient Subsystem

ReportData

Search By: Name Expertise: Name: b

☒ Visitor zayne ☐ Patient Beasley Search

3 physicians 44 slots.

05-21 Fri 15:30	Betsy_Hopper	Room-A	Consultation - Osteopathy
05-28 Fri 14:30	Betsy_Hopper	Room-A	Consultation - Osteopathy
05-28 Fri 15:30	Betsy_Hopper	Room-A	Consultation - Osteopathy
05-06 Thu 14:30	Keller_Burks	Pool	Consultation - Rehabilitation
05-06 Thu 15:30	Keller_Burks	Pool	Consultation - Rehabilitation
05-13 Thu 14:30	Keller_Burks	Pool	Consultation - Rehabilitation
05-13 Thu 15:00	Keller_Burks	Pool	Consultation - Rehabilitation
05-13 Thu 15:30	Keller_Burks	Pool	Consultation - Rehabilitation
05-13 Thu 16:00	Keller_Burks	Pool	Consultation - Rehabilitation
05-20 Thu 14:00	Keller_Burks	Pool	Consultation - Rehabilitation
05-20 Thu 14:30	Keller_Burks	Pool	Consultation - Rehabilitation

Patient ID: 1617745403725

Book

Registration

Name: Tel: Addr.:

Button

Appointment

Select patient: Beasley Select appointment:

Patient ID: 1617745403725

Attend Miss

05-05 14:00 Betsy_Hopper NEURAL_MOBILISATION #1620850141362

05-07 10:00 Betsy_Hopper NEURAL_MOBILISATION #1620850144496

05-05 16:00 Betsy_Hopper SPINE_JOINTS_MOBILISATION #1620850145673

05-05 10:00 Betsy_Hopper NEURAL_MOBILISATION #1620850146995

05-07 12:00 Betsy_Hopper NEURAL_MOBILISATION #1620850149040

Patient Subsystem

Report

Data

Select a patient: Beasley_1...

▼ Appointments for Beasley (5 appointments)

ID: 1620850141362
Patient: Beasley
Physician: Betsy Hopper
Treatment: Neural_Mobilisation
State: Booked
Time: 05-05 14:00
Duration: 2hrs
Room: A
Notes:

ID: 1620850144496
Patient: Beasley
Physician: Betsy Hopper
Treatment: Neural_Mobilisation
State: Booked
Time: 05-07 10:00
Duration: 2hrs
Room: A
Notes:

ID: 1620850145673
Patient: Beasley
Physician: Betsy Hopper
Treatment: Spine_Joints_Mobilisation
State: Booked
Time: 05-05 16:00
Duration: 2hrs
Room: A
Notes:

ID: 1620850146995
Patient: Beasley
Notes:

▼ All Appointments (10 appointments)

ID: 1620850141362
Patient: Beasley
Physician: Betsy Hopper
Treatment: Neural_Mobilisation
State: Booked
Time: 05-05 14:00
Duration: 2hrs
Room: A
Notes:

ID: 1620850144496
Patient: Beasley
Physician: Betsy Hopper
Treatment: Neural_Mobilisation
State: Booked
Time: 05-07 10:00
Duration: 2hrs
Room: A
Notes:

ID: 1620850145673
Patient: Beasley
Physician: Betsy Hopper
Treatment: Spine_Joints_Mobilisation
State: Booked
Time: 05-05 16:00
Duration: 2hrs
Room: A
Notes:

ID: 1620850146995
Patient: Beasley
Notes:

► Visitor Appointments (5 appointments)

Patient Subsystem

Report

Data

Select a patient: Beasley_1...

▼ Appointments for Beasley (5 appointments)

ID: 1620850141362

Patient: Beasley

Physician: Betsy Hopper

Treatment: Neural_Mobilisation

State: Booked

Time: 05-05 14:00

Duration: 2hrs

Room: A

Notes:

ID: 1620850144496

Patient: Beasley

Physician: Betsy Hopper

Treatment: Neural_Mobilisation

State: Booked

Time: 05-07 10:00

Duration: 2hrs

Room: A

Notes:

ID: 1620850145673

Patient: Beasley

Physician: Betsy Hopper

Treatment: Spine_Joints_Mobilisation

State: Booked

Time: 05-05 16:00

Duration: 2hrs

Room: A

Notes:

ID: 1620850146995

Patient: Beasley

Physician: Betsy Hopper

Treatment: Spine_Joints_Mobilisation

State: Booked

Time: 05-05 16:00

Duration: 2hrs

Room: A

Notes:

► All Appointments (10 appointments)

▼ Visitor Appointments (5 appointments)

ID: 1620850173769

Patient: _Visitor_

Physician: Betsy Hopper

Treatment: Consultation

State: Booked

Time: 05-28 16:00

Duration: 30min

Room: A

Notes: Visitor: zayne

ID: 1620850175879

Patient: _Visitor_

Physician: Keller Burks

Treatment: Consultation

State: Booked

Time: 05-06 15:00

Duration: 30min

Room: Pool

Notes: Visitor: zayne

ID: 1620850177480

Patient: _Visitor_

Physician: Betsy Hopper

Treatment: Consultation

State: Booked

Time: 05-28 15:00

Duration: 30min

Room: A

Notes: Visitor: zayne

ID: 1620850178680

Patient: _Visitor_

Physician: Betsy Hopper

Treatment: Consultation

State: Booked

Time: 05-28 15:00

Duration: 30min

Room: A

Notes: Visitor: zayne

Patient Subsystem Report Data		
▼ Physicians (5 physicians)	▼ Patients (15 patients)	▼ Appointments (10 appointments)
<p>Name: Betsy Hopper ID: 1615503120508 Work: Fri, Wed Consult: Fri - 14:00 Tel: +4407866442335 Expertise: Osteopathy Treatments: Spine_Joints_Mobilisation Neural_Mobilisation</p> <hr/> <p>Name: Santiago Romero ID: 1614348032344 Work: Tue, Thu Consult: Tue - 10:00 Tel: +4407845585328 Expertise: Physiotherapy Treatments: Acupuncture Massage</p> <hr/> <p>Name: Miranda Espinoza ID: 1614448459669 Work: Wed, Mon Consult: Mon - 16:00 Tel: +4407882552388 Expertise: Physiotherapy Treatments: Massage Acupuncture</p> <hr/> <p>Name: Keller Burks ID: 1614665107626</p>	<p>Name: Wyatt ID: 1616279483532 Tel: +4407994510230 Addr: 367 Rose Street, Ocoola, Palau, 6</p> <hr/> <p>Name: Mccall ID: 1618882363126 Tel: +4407805598265 Addr: 374 Emmons Avenue, Lookingglass</p> <hr/> <p>Name: Moran ID: 1618992428864 Tel: +4407806536269 Addr: 151 Raleigh Place, Terlingua, New</p> <hr/> <p>Name: Oberlin ID: 1616926842032 Tel: +4407860563218 Addr: 158 Boerum Place, Boomer, Wes</p> <hr/> <p>Name: Whitley ID: 1618858295823 Tel: +4407815492228 Addr: 406 Mermaid Avenue, Advance, F</p> <hr/> <p>Name: Walsh ID: 1618902206548 Tel: +4407926533355 Addr: 388 Grove Place, Haring, Mississ</p> <hr/> <p>Name: Beasley ID: 1617745403725 Tel: +4407831592222</p>	<p>ID: 1620850141362 Patient: Beasley Physician: Betsy Hopper Treatment: Neural_Mobilisation State: Booked Time: 05-05 14:00 Duration: 2hrs Room: A Notes:</p> <hr/> <p>ID: 1620850144496 Patient: Beasley Physician: Betsy Hopper Treatment: Neural_Mobilisation State: Booked Time: 05-07 10:00 Duration: 2hrs Room: A Notes:</p> <hr/> <p>ID: 1620850145673 Patient: Beasley Physician: Betsy Hopper Treatment: Spine_Joints_Mobilisation State: Booked Time: 05-05 16:00 Duration: 2hrs Room: A Notes:</p> <hr/> <p>ID: 1620850146995 Patient: Beasley Physician: Betsy Hopper Treatment: Neural_Mobilisation State: Booked</p>