Java

Project

Report

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Introduction

The University Sports Centre appointment booking application is designed to book weekend exercise lessons for university students. The application provides complete flexibility for students in booking appointments. Students can book an appointment, cancel appointment and also the application doesn't disappoint students who later wanted to alter booking in terms of changing exercise or changing date. In a day there are 3 sessions which are morning, noon and afternoon sessions. Students who wish to book lessons they can view the timetable and choose appropriate date and lesson. If a student doesn't want to appear for a lesson after booking, student can cancel their booking before the class time. Each exercise costs different prices which is made affordable for all. Application provides the opportunity to give the feedback of the lessons by writing reviews and by giving rating through the application which helps the University sports centre to analyse and understand their quality of lessons and service they provide.

Software Requirements

Operation System: Windows7,8,10,11, any OS supporting NetBeans or IntelliJ IDEA

IDE: IntelliJ IDEA

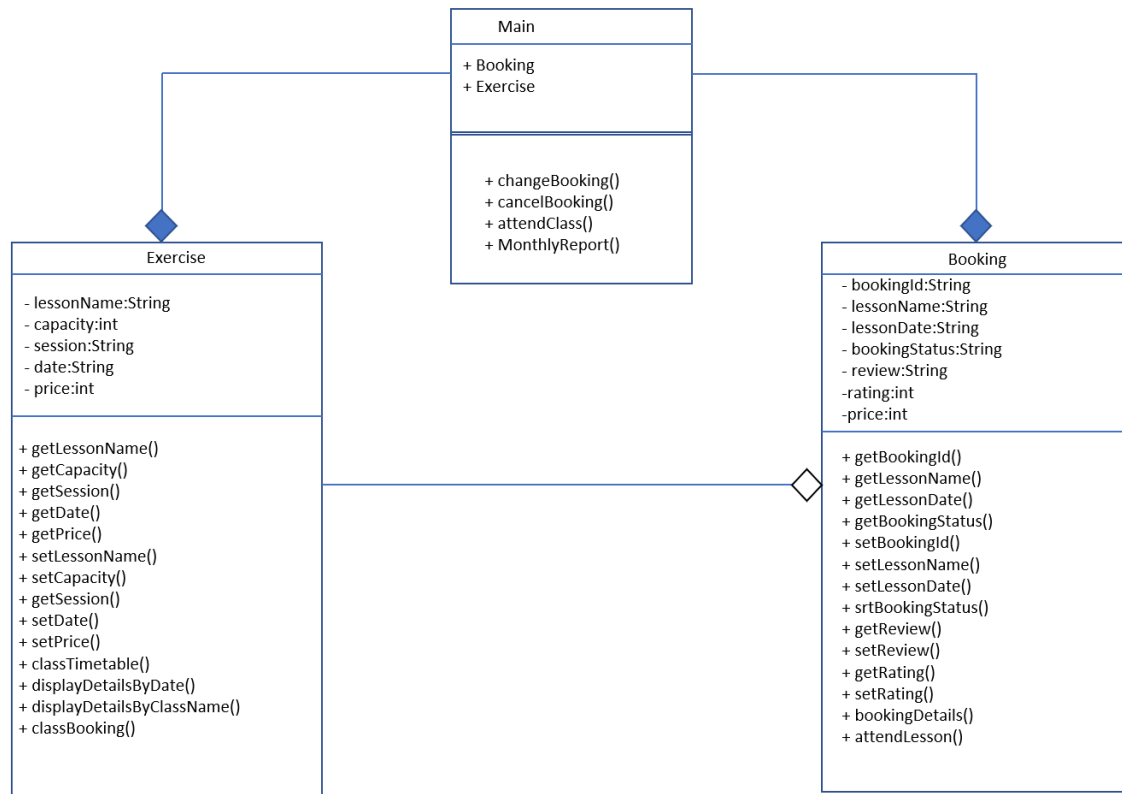JDK Version: Java SE Development Kit 17

Language: Java

UML Class Diagram

Main

+ Booking
+ Exercise

+ changeBooking()
+ cancelBooking()
+ attendClass()
+ MonthlyReport()

Exercise

- lessonName:String
- capacity:int
- session:String
- date:String
- price:int

+ getLessonName()
+ getCapacity()
+ getSession()
+ getDate()
+ getPrice()
+ setLessonName()
+ setCapacity()
+ getSession()
+ setDate()
+ setPrice()
+ classTimetable()
+ displayDetailsByDate()
+ displayDetailsByClassName()
+ classBooking()

Booking

- bookingId:String
- lessonName:String
- lessonDate:String
- bookingStatus:String
- review:String
-rating:int
-price:int

+ getBookingId()
+ getLessonName()
+ getLessonDate()
+ getBookingStatus()
+ setBookingId()
+ setLessonName()
+ setLessonDate()
+ srtBookingStatus()
+ getReview()
+ setReview()
+ getRating()
+ setRating()
+ bookingDetails()
+ attendLesson()

Figure 1

There are three classes, one main class which is the parent class and two child classes named Booking and Exercise.

Structure and Design

The project is written in Java language using IntelliJ IDEA along with Version control using Git and GitHub.

The project has three classes Main, Exercise and Booking along with two JUnit testing classes BookingTest and ExerciseText.
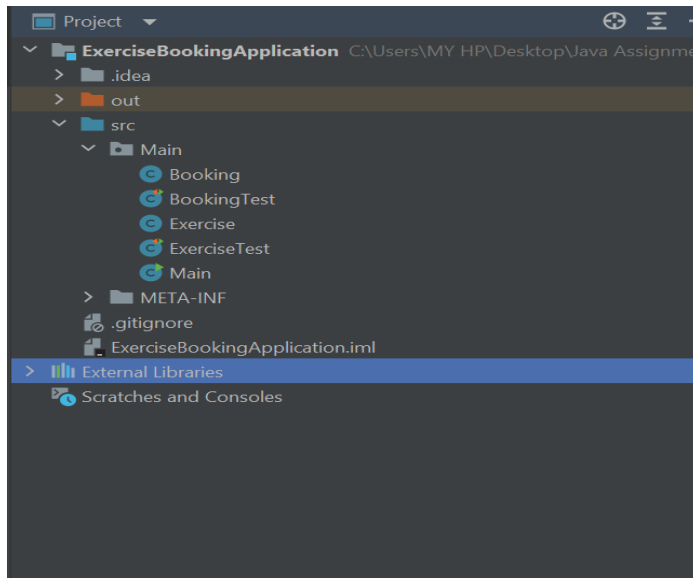
The project has implemented Object Oriented Programming concepts by the use of Encapsulation, Data abstractions and communications between Main class and child classes.The code has also included various Exception handling parts to handle unexpected errors.

Assumptions:

1. Students don't require to register in-order to book a class. Each booking is identified by a unique booking id which is automatically generated.

2. The system has pre-loaded Timetable for 8 Weeks for the Month January and February with a total of 6 different classes namely Yoga, Swimming, Football, Cricket, Zumba and Aquacise.

3.The system is also preloaded with 10 Booked classes details and 10 Attended class details along with their ratings and reviews.

4. Some pre-registered Booking Ids with

Booking status Booked : herts79104, herts79105, herts79112.

Booking status Attended: herts69104, herts69105, herts69112.
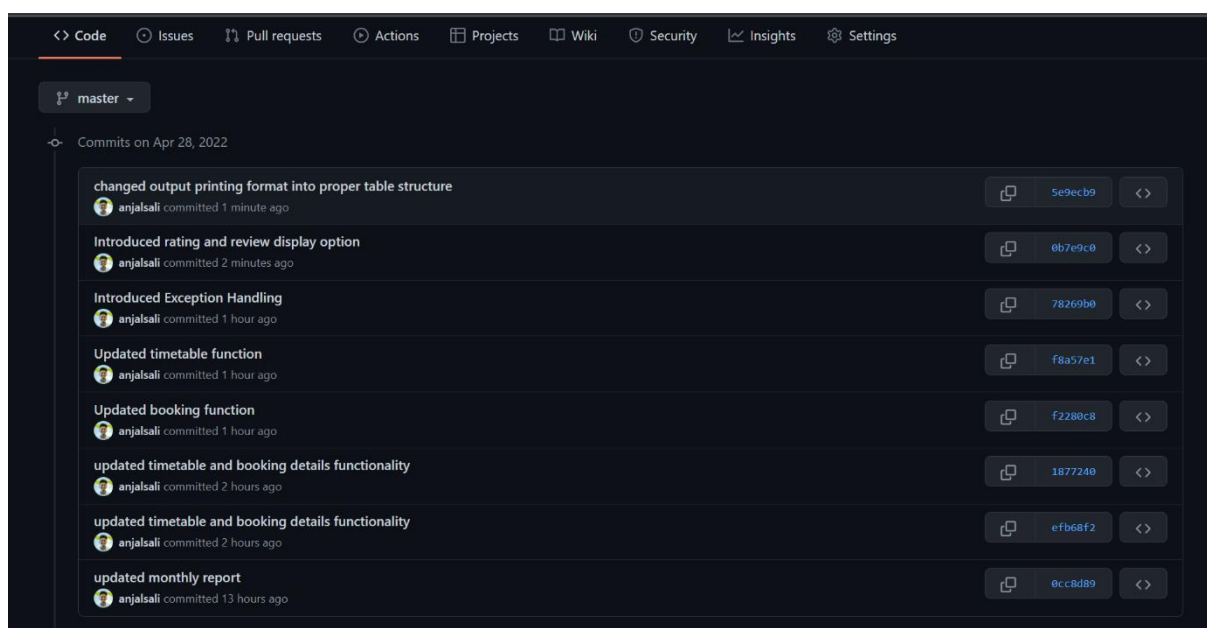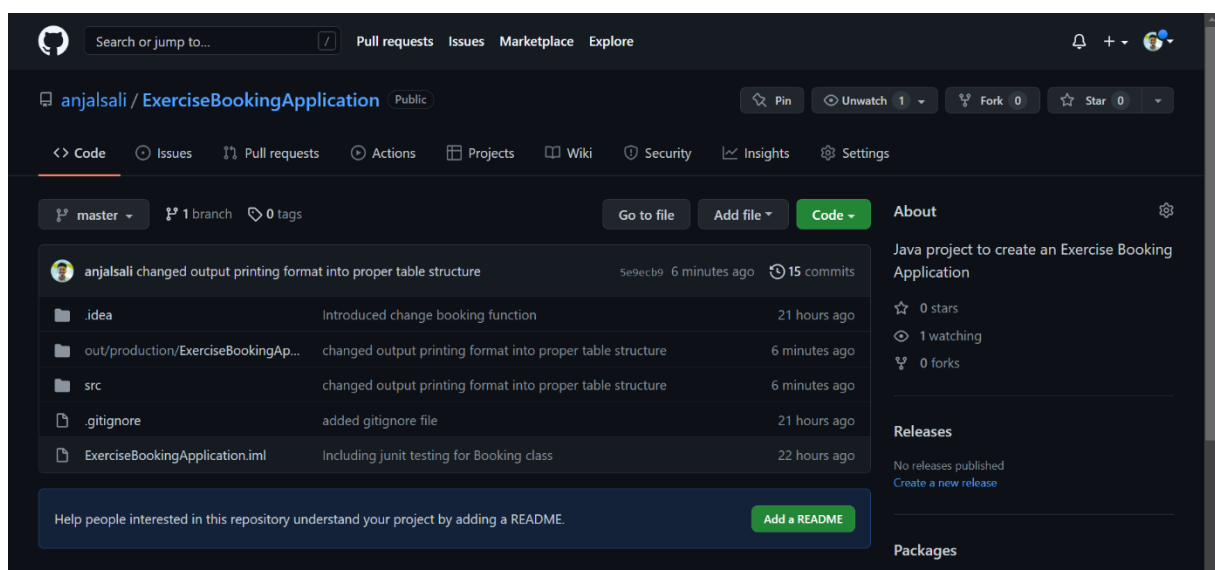
Git Repository and Commits

The project code is pushed into the GitHub repo

GitHub repo:

git@github.com:anjalsali/ExerciseBookingApplication.git
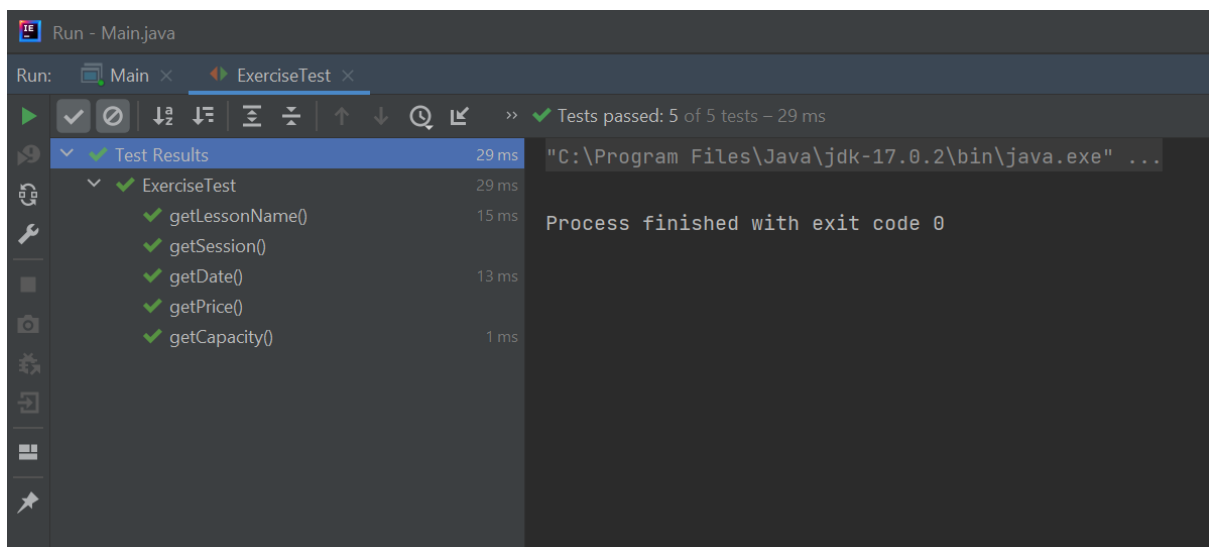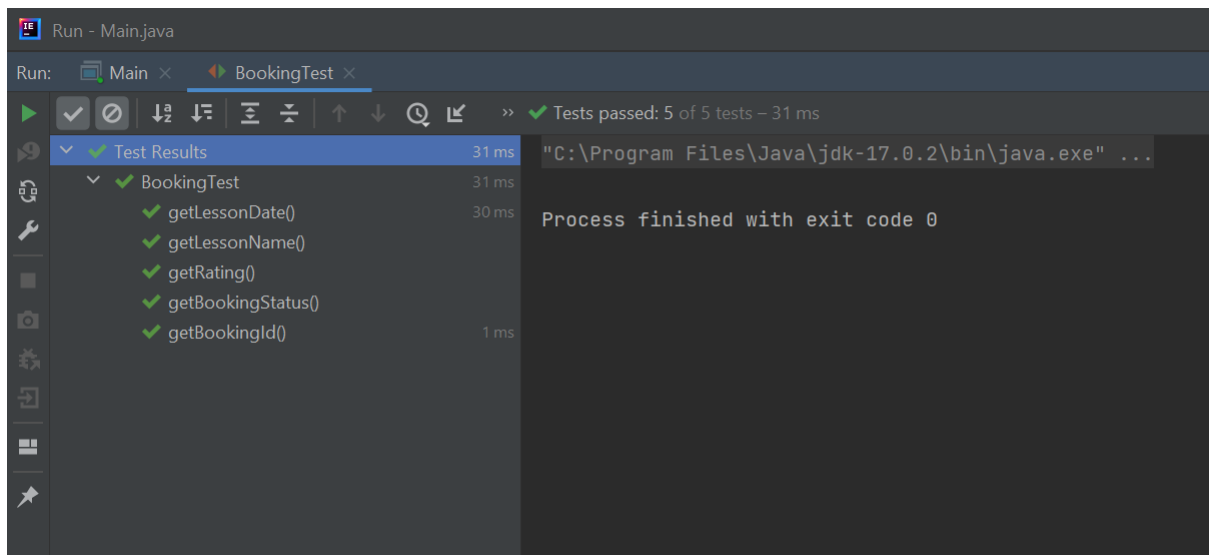
Junit Testing

The project has implemented Junit testing for both Booking Class and Exercise Class using Junit5 testing framework.

A total of 10 test cases have been tested on both classes with 5 test cases for each.

Program Functionalities

The Project mainly contains 7 functionalities.

The Program will accept a numeric input from the user to select any of the following functions.

```
-------------------------------------------------
.....Welcome to USC Exercise Booking App.....
-------------------------------------------------
Select an Option:
[1] Display Timetable
[2] Make a Booking
[3] Change or Cancel Booking
[4] View all Bookings
[5] Attend a Lesson
[6] Monthly report
[7] Exit
_
```

1.Display Timetable

This functionality will display the details of all available classes along with their name, session time, date, slots and rate.

```
-------------------------------TIME TABLE-------------------------------------
Lesson Name      Session         Date            Slots           Fees
------------------------------------------------------------------------------
yoga             Morning         01-01-2022      3               5
------------------------------------------------------------------------------
swimming         Afternoon       01-01-2022      4               2
------------------------------------------------------------------------------
football         Evening         01-01-2022      4               6
------------------------------------------------------------------------------
cricket          Morning         02-01-2022      2               8
------------------------------------------------------------------------------
zumba            afternoon       02-01-2022      2               10
------------------------------------------------------------------------------
aquacise         Evening         02-01-2022      4               6
------------------------------------------------------------------------------
yoga             Morning         08-01-2022      4               5
------------------------------------------------------------------------------
swimming         Afternoon       08-01-2022      4               2
------------------------------------------------------------------------------
football         Evening         08-01-2022      2               6
------------------------------------------------------------------------------
cricket          Morning         09-01-2022      4               8
------------------------------------------------------------------------------
zumba            afternoon       09-01-2022      2               10
------------------------------------------------------------------------------
aquacise         Evening         09-01-2022      2               6
------------------------------------------------------------------------------
yoga             Morning         15-01-2022      4               5
------------------------------------------------------------------------------
swimming         Afternoon       15-01-2022      2               2
------------------------------------------------------------------------------
football         Evening         15-01-2022      4               6
------------------------------------------------------------------------------
cricket          Morning         16-01-2022      4               8
------------------------------------------------------------------------------
zumba            afternoon       16-01-2022      4               10
------------------------------------------------------------------------------
aquacise         Evening         16-01-2022      4               6
------------------------------------------------------------------------------
yoga             Morning         22-01-2022      4               5
------------------------------------------------------------------------------
swimming         Afternoon       22-01-2022      4               2
```

2.Make a Booking

This functionality allows the user to make a booking by entering either the date or class name. The program will display all the available classes according the user input and make a booking with a unique booking id.

```
Select a Booking Option
[1] View classes by Date
[2] View classes by Name
1
Book By Date
Classes are scheduled on
 January:
01-01-2022
02-01-2022
08-01-2022
09-01-2022
15-01-2022
16-01-2022
22-01-2022
23-01-2022
29-01-2022
30-01-2022
February:
05-02-2022
06-01-2022
12-02-2022
13-01-2022
19-02-2022
20-01-2022
Enter a date from above in dd-mm-yyyy format
01-01-2022
Lesson Name          Session          Date           Slots        Fees
-------------------------------------------------------------------------
yoga                 Morning          01-01-2022     3            5
-------------------------------------------------------------------------
swimming             Afternoon        01-01-2022     4            2
-------------------------------------------------------------------------
football             Evening          01-01-2022     4            6
Please choose a lesson
yoga
Booking Success with Booking ID:hert65048
```

```
Select a Booking Option
[1] View classes by Date
[2] View classes by Name
2
Book By Lesson Name
Enter a Lesson Name
yoga
Lesson Name          Session          Date           Slots        Fees
-------------------------------------------------------------------------
yoga                 Morning          01-01-2022     2            5
-------------------------------------------------------------------------
yoga                 Morning          08-01-2022     4            5
-------------------------------------------------------------------------
yoga                 Morning          15-01-2022     4            5
-------------------------------------------------------------------------
yoga                 Morning          22-01-2022     4            5
-------------------------------------------------------------------------
yoga                 Morning          29-01-2022     4            5
-------------------------------------------------------------------------
yoga                 Morning          05-02-2022     2            5
-------------------------------------------------------------------------
yoga                 Morning          12-02-2022     4            5
-------------------------------------------------------------------------
yoga                 Morning          19-02-2022     4            5
Enter a date in dd-mm-yyyy format
01-01-2022
Booking Success with Booking ID:hert72658
```

3.Change or Cancel Booking

This functionality allows the user to change a already booked class or cancel a already booked class. The program will ask for the unique Booking Id and on confirmation it will display the available classes if the user want to change the booking or the program will cancel the already booked booking id. The user cannot change or cancel a booking id if its status is already attended.

```
[1] Change Booking
[2] Cancel Booking
Please Enter Your option:
2
Please Enter your Booking ID:
herts79114
Booking Details Found

Booking ID:herts79114
Lesson Name:e
Date:e
Booking Status:booked
Are you sure you want to cancel the booking (y/n):
y
Booking Cancelled :herts79114
```

4.View all Bookings.

This functionality allows the user to view all the bookings that's already registered in the system along with the Booking Id, Lesson Name, Date and Booking status. The system will not show any bookings which is already attended.

```
-----------------------Booking Details  -------------------------------

Booking ID          Lesson Name        Date               Booking Status
----------------------------------------------------------------------
herts79104          zumba              02-01-2022         booked
----------------------------------------------------------------------
herts79105          cricket            02-01-2022         booked
----------------------------------------------------------------------
herts79106          football           08-01-2022         booked
----------------------------------------------------------------------
herts79107          aquacise           09-01-2022         booked
----------------------------------------------------------------------
herts79108          zumba              09-01-2022         booked
----------------------------------------------------------------------
herts79109          swimming           15-01-2022         booked
----------------------------------------------------------------------
herts79110          yoga               05-02-2022         booked
----------------------------------------------------------------------
herts79112          cricket            06-02-2022         booked
----------------------------------------------------------------------
herts79113          zumba              13-02-2022         booked
----------------------------------------------------------------------
herts79114          aquacise           13-02-2022         booked
```

5.Attend a Lesson

This functionality will allow the user to enter their Booking Id and change its status to attended. The program will also ask the user to enter their review and rating for the attended class. The user can only attend a class if the Booking Id have a status of "Booked".

```
Please Enter your Booking ID:
herts79114
Booking Details Found

Booking ID:herts79114
Lesson Name:aquacise
Date:13-02-2022
Booking Status:booked
Are you sure you want to attend the Class (y/n):
y
Booking ID:herts79114    Booking Status:attended
Class Attended

Please write a review for the class [One Word]

Good
Please give a rating for the Class [1-5]

4
Rating and Review Submitted
```

6.Montly Report

This functionality will allow the user to enter a month number and see the monthly report for all the six classes along with Class Name, No of Bookings, Average rating, and total Income generated by each class for that month. The function also display all the user revies and ratings for each attended class in that month.

```
Welcome to Monthly Report
Enter a month number for report [01 - 02]
01
---------------------------------------------------------------------
Class Name          Total Bookings      Average Rating      Total Income
---------------------------------------------------------------------
Zumba               2                   5.00                10
---------------------------------------------------------------------
Swimming            1                   2.00                2
---------------------------------------------------------------------
Cricket             1                   4.00                8
---------------------------------------------------------------------
Aquacise            1                   3.00                6
---------------------------------------------------------------------
Yoga                1                   4.00                5
---------------------------------------------------------------------


--------------------------Ratings and User Reviews--------------------------

---------------------------------------------------------------------
yoga                01-01-2022          Good                4
---------------------------------------------------------------------
zumba               02-01-2022          Very Satisfied      5
---------------------------------------------------------------------
cricket             02-01-2022          Satisfied           4
---------------------------------------------------------------------
football            08-01-2022          Very Satisfied      5
---------------------------------------------------------------------
aquacise            09-01-2022          Ok                  3
---------------------------------------------------------------------
zumba               09-01-2022          Very Satisfied      5
---------------------------------------------------------------------
swimming            15-01-2022          Dissatisfied        2
---------------------------------------------------------------------
```

7.Exit

This Functionality will allow the user to exit from the program anytime.

Program Execution

An executable jar file is included in the folder and can be executed using the command line by entering the following commands:

java -jar "path of the jar file"