**DOCUMENTS**

**Use Case Specification**

| ID and Name: | **UC-29 – Course Booking** | | |
| --- | --- | --- | --- |
| Created By: | Bui Nguyen Kim Long | Date Created: | 19/5/23 |
| Primary Actor: | Trainee | Secondary Actors: | Course list |
| Description: | A Trainee accessed the Yoga Center System from the Internet, views the courses for a specific interest, chooses a mentor if desired, selects course items, confirms their booking, and pays for the course. | | |
| Trigger: | A Trainee indicates that he wants to learn yoga and have a course in the Yoga Center. | | |
| Preconditions: | PRE-1. Trainee is logged into YCS.  PRE-2. Trainee is registered for course payments by VNPay. | | |
| Postconditions: | POST-1. A booking confirmation for the selected course attaching the booking detail is sent to the trainee’s email.  POST-2. The course provider’s seat count for the booked course is updated. | | |
| Normal Flow: | **Book a specific course**   1. Trainee asks to view the course for a specific interest. 2. YCS displays a list of available courses and some recommended courses based on the trainee’s interest. 3. Trainees select a course from the list. 4. YCS presents detailed information about the selected course, including the course name, description, schedule, and available seats. 5. YCS checks the availability of seats for the selected course. If seats are available, the system proceeds with the booking process. 6. Trainees review the course information and decide to proceed with the booking. 7. YCS displays the course items, individual prices, and total prices including the taxes. 8. Trainees either confirm their booking (continue normal flow) or request to modify their course selection or cancel the booking. (return to step 2). 9. Trainee specifies payment method. 10. YCS confirms acceptance of the booking. 11. YCS generates a booking confirmation, which includes course details, booking reference number, and any additional instructions, and sends to Trainees via email message or displays it on the screen. 12. YCS updates the course's seat count, reducing the available seats by the number of booked seats. | | |
| Alternative Flows: | **1.1 Insufficient Seats:**  **In step 5 of the normal flows, if no seats are available for the selected course:**   1. YCS displays an error message indicating the unavailability of seats. 2. Trainee is prompted to select a different course or cancel the booking. 3. Return to Step 2 of normal flow.   **1.2 Modify Course Selection:**   1. Trainees ask to choose a different course. 2. YCS cancel the current booking process. 3. Return to Step 2 of normal flow.   **1.3 Cancel Booking:**   1. YCS cancels the booking process. 2. Any temporary seat hold is released, and the available seat count for the selected course is updated accordingly. 3. Return to Step 2 of normal flow. | | |
| Exceptions: | **1.0. Overbooking Prevention – multiple trainees simultaneously attempt to book the last available seat for a course:**  1. YCS employs a concurrency control mechanism to prevent overbooking.  2. Only one trainee is allowed to successfully book the seat, while others are notified that the seat has been filled.  3. The use case continues for the successful trainee, while other trainees may need to select an alternative course or cancel the booking process.  **1.1. All the courses have started or have enough trainees, no courses are available**  1. YCS informs the trainees that there aren’t any courses available to book because the maximum of trainee registrations or the course with the specific interest of the trainee is not opened.  2. The trainee is prompted to check back later or contact the center for more information. | | |
| Priority: | High | | |
| Frequency of Use: | Approximately 200 users, an average of one usage per day. Peak usage load for this use case is in prime time between 7:00 P.M. and 8:00 P.M. | | |
| Business Rules: | BR-1, BR-2, BR-3, BR-4, BR-5, BR-6, BR-12, BR-33 | | |
| Other Information: | 1. Trainee shall be able to cancel the booking process at any time before confirming it. 2. Trainee shall be able to view the course progress that he booked within the learning process and must finish the registered course if he/she wants to enroll in a new course. 3. Trainee shall be able to give any special requirements to the course and the trainer as well. | | |
| Assumptions: |  | | |

# Business Rules for Yoga Center System (partial)

| ***ID*** | ***Rule Definition*** | ***Type of Rule*** | ***Static or Dynamic*** | ***Source*** |
| --- | --- | --- | --- | --- |
| BR-1 | Trainees must have a valid membership to access yoga classes and services offered by the center. This ensures that only registered members can book classes. | Fact | Dynamic | Yoga Center Manager |
| BR-2 | Trainee can cancel their class bookings up to a specified time before the class start time without penalty. However, late cancellations or no-shows may incur penalties, such as a deduction from the membership or a limited number of allowed late cancellations per month. | Constraint | Static | Yoga Center Manager |
| BR-3 | Each yoga class has a maximum capacity (about 20 trainees) to ensure a safe and comfortable environment for participants. Once the class reaches its capacity, further bookings are not allowed. | Constraint | Static | Yoga Center Manager |
| BR-4 | Some classes may have specific prerequisites, such as prior experience or skill level. The system should verify the trainee's eligibility for such classes before allowing bookings. | Constraint | Static | Yoga Center Manager |
| BR-5 | The booking must be made within a specified time frame before the class start time. This ensures that trainees cannot book classes too far in advance or at the last minute. | Constraint | Dynamic | Yoga Center Manager |
| BR-6 | If a course is successfully booked, the trainee must pay by their payment selection. | Computation | Dynamic | Yoga Center Manager |
| BR-12 | Total price of the booking is calculated as the sum of the course’s price plus applicable sales tax, minus the discount percentage if desired. | Computation | Dynamic | Yoga center policy; state tax code |
| BR-33 | Network transmissions that involve financial information or personally identifiable information require 256-bit encryption. | Constraint | Static | Corporate security policy |

**Data dictionary**

| ***Data Element*** | ***Description*** | ***Composition or Data Type*** | ***Length*** | ***Values*** |
| --- | --- | --- | --- | --- |
| Course ID | A unique identifier for a course that is generated systematically after being created successfully. | integer |  |  |
| Course Name | Name of the course that are available on the system | alphanumeric | 50 |  |
| Price | The original cost or fee associated with the course | numeric, dollars, and cents | dd.cc |  |
| Discount | The percentage of the reduced price of a course | float |  |  |
| Level ID | An identifying key for the level of a course | integer |  | 0: Beginner  1: Immediate  2: Advanced |
| Description | A detailed description of the course, including its objectives, topics covered, and any prerequisites. | alphanumeric | 500 |  |
| Image | An image or thumbnail associated with the course for visual representation. | Image’s link | 100 |  |
| Deleted | The status of a course if there isn’t any available class | bit |  | Default is true (=1) if there is more than or equal to one class; else false (=0) |