**Assignment 2: Use Case and Description (35 points)**

Consider the following scenario then complete the exercises below:

FitPalApp is a business that provides fitness programs and diet plans to customers. They are in the process of revamping their mobile application to manage subscribers and administer fitness programs and diet plans. The following requirements need to be met. The terms customer/ user/ subscriber can be used interchangeably. Similarly, the terms application/ system can be used interchangeably.

1. Customers will be allowed to register with the application by choosing credentials to login with, and provide contact information like name, date of birth, age, address, email and physical address, etc.
2. Upon successfully registering their accounts, customers will be presented with a health questionnaire online where they will answer questions that will assess their fitness level and goals. The questionnaire will capture information like their current weight, height, age, etc., to assess the BMI, fitness and body fat levels. The system will generate a graphics/ charts showing the fitness levels visually.
3. After the health questionnaire is completed, the customers will be presented with another questionnaire to assess their goals. Customers will answer questions like what they would like their target weight to be, how soon they want to accomplish the goal, how often they are willing to exercise in a week, how much time they want to spend on their workouts and what type of workout (aerobics, yoga, strength training, etc.) would they be interested in.
4. The system will capture additional information like any health conditions the customer has or any medications the customer is currently taking, and any past medical history, which can be used to customize the diet and workout plans. Customers will be asked to sign an agreement, accept terms and conditions, releasing the company of any liabilities or claims.
5. There are two types of customers: Basic customers, who do not pay any subscription fee to use the app. They will be able to create their profile, complete all the questionnaires and accept terms and conditions. They will be able to view free workout plans and basic diet plans.
6. The app will offer advanced features to subscribers, who will pay a fee to use the app. The system offers two types of subscription plans – Gold and Platinum.
   1. Gold subscribers will be able to view paid workout routines and diet plans.
   2. Platinum subscribers will be able to work with a personal trainer and dietician to customize workout and diet plans.
   3. Both types of subscribers will be able to like and make a favorite list of recipes, diet plans and workouts.
   4. Both types of subscribers will be able to export the date from the system into a excel file. Additionally, platinum customers will be able to invite their doctors or other healthcare providers (external to our system) to view the data logged by them. This external integration with their health care providers will not be available to basic or gold members.
      1. For this external integration to work, health care providers will have to create an account and register themselves as a provider. This is a different workflow that will allow providers to register for an account and connect with their patients. There is no charge for the providers.
         * Providers will provide their name, address, date of birth, medical license #, hospital affiliation, provider #, etc during registration.
         * They will create an account identifying themselves as a provider.
         * Patients will be able to search for a provider and share their logs directly with the providers.
   5. The subscription price will vary depending on the type of contract and the system will apply the correct pricing depending on the plan chosen.
   6. Once the user opts for subscription, user will be shown a contract with all the details about the subscription and the premium features that will be offered, and additional terms and conditions.
7. Users should be able to make payments via the app, view receipt for past payments, log their daily diet and workouts, weight and other health vitals. The system will keep track of their progress and generate graphics/ charts displaying the progress towards the goal on a weekly, monthly, or quarterly basis. Users will also be able to generate graphs based on a custom date range.
   1. Users will be requested to add their credit card details when opting for a subscription. Users can opt for auto or manual renewal.
   2. Prior to the expiration of the subscription, all subscribers will receive an email notification about the end of their subscription, 2 weeks prior to the expiration date. If users have opted for auto payment, the email will remind them about an automatic payment at the end of the cycle.
   3. The system will apply automatic payment for those users that opted for auto-payment 2 days prior to when the subscription ends.

***Exercises:***

1. Develop a ***Use Case diagram*** for the scenario covering all major and important supporting use cases from the above case. No hand drawings please. (15 points)
   1. User cases should be features of the system and the name should indicate an action or feature. For example, “Transaction” is a thing. It is an entitiy and not an action. You should state it as “Perform Transaction” or “Record Transaction” clearly indicating the meaning of the use case. When someone sees your use case diagram, they should clearly understand what you are referring to. Use case names should be a verb and indicate a feature of the system or an action it performs when invoked.
   2. You should identify all major use cases for this case and try to create other use cases as relevant (supporting use cases). Use cases should be linked using “extends and includes” where applicable. Remember, this is not a flow chart.
   3. Where can I go wrong? – Wrong names for use cases, wrong use of extends and includes, incorrect notations used, use cases not linked to an actor or another use case and sticking alone in the diagram, not performing exhaustive analysis to cover other supporting use cases, not marking actors properly, using includes/ extends between an actor and a usecase, etc.

**Diagram

Description automatically generatedDiagram

Description automatically generated**

1. Create **two** ***Use Case Descriptions*** for any two major use cases from your use case diagram. The use case description should include the use case name, actor, brief description, normal flow of events, and exception flow of events. (20 points)
   1. **Remember: Each use case in a use case diagram should have a corresponding use case description written specifically for that use case. You can choose any two use cases and write the description for them. You cannot combine the description for multiple use cases in one template. For each use case, you must write the description separately. Below is the template for use case description.**

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| **Use Case Name:** | Register as a customer |
| **Primary Actor:** | Customer |
| **Brief Description:** | User registers himself on Fitpal App |
| **Stakeholders:** | Customer, Fitpal App |
| **Trigger:** | Customer is using app for the first time |
| **Normal flow of events:** | 1. Customer creates an account. 2. Customer provides personal details like name, age, date of birth, contact info and gender. 3. Customer creates an userid and password. 4. All details are saved to database. 5. System asks health related questions 6. Customer answers health questions such as height and current weight. 7. System calculates BMI index and body fat level based on info provided. 8. System asks to set health goals. 9. Customer fills health goals like targeted weight, exercise type, exercise time etc. 10. System asks additional information related to medical conditions and medications. 11. Customer can either fill or skip the details. 12. Agreements page pops up. 13. Customers reads the agreement condition 14. Customer accepts terms and condition 15. Customer signs the agreement. |
| **Alternate/Exception flow:** | 1. Exception to this normal flow will occur when customer tries to set the password that is too weak 2. In that case, systems shows the message to enter strong password that meets the requirement. 3. Customer enters the new password that is strong and meets the requirement. |

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| **Use Case Name:** | Buy a subscription plan |
| **Primary Actor:** | Customer |
| **Brief Description:** | Customer buys a new subscription plan |
| **Stakeholders:** | Customer, Fitpal App, Database,Bank |
| **Trigger:** | Customer wants to buy a fitness plan according to his needs and searches for one. |
| **Normal flow of events:** | 1. Customer logins to the account. 2. Customer searches for the plan 3. System shows two subscription plan gold and platinum. 4. Customer views the plan details. 5. Customer chooses the plan that suits him. 6. System shows the contract details based on plan chosen. 7. Customer views the contract, accept terms and condition and signs the contract. 8. Systems shows the final price based on contract type and asks for payment details 9. Customer selects the payment method. 10. Customer chooses mode of payment as credit card and add card details. 11. System shows the option to set up auto repayment. 12. Customer chooses the auto repayment option. 13. Customer pays the bill. 14. System shows payment successful on display. 15. Entry for new transaction is made in database. |
| **Alternate/Exception flow:** | Exception to this normal flow will occur when customer provides invalid credit card details   1. System shows the message as invalid credit card. 2. The system asks another credit card information. 3. If new credit card is valid, amount is deducted from the card. 4. System shows the message of transaction successful. 5. If details are invalid the payment is put in pending state. |
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