Middle Project

Introduction

The summary project is intended to reinforce all the knowledge that you acquired throughout the course. It is a comprehensive project that includes many activities. The goal of the project is to simulate a real-life scenario in order to prepare you better for the real world. Your mission is to use all the knowledge that you've learned in the course in order to complete the project in the best way.
The project is an online casino. You are responsible for all the activities that are directly or indirectly related to the database. You should design, implement and test your solution. Following is a list of requirements. You should read the requirements carefully, and design the database infrastructure based on these requirements. Following the list of requirements, there is a list of deliverables. These are the things that you are required to deliver at project completion.
Good luck!

Requirements

a. When a user enters the online casino website, she will be asked to choose whether to register or login. If this is her first visit to the website, she will choose to register. If she has already registered in the past, she will choose to login with her username and password.
b. A registered user in the online casino is called "Player".
c. If a user chooses to register, she will be presented with a registration form. The user will then be asked to fill the following details in the registration form:

Field	Mandatory	Control
Username	X	Edit Box (10 Characters)
Password	X	Edit Box (10 Characters)
First Name	X	Edit Box (20 Characters)
Last name	X	Edit Box (20 Characters)
Address		Edit Box (100 Characters)
Country	X	Combo Box
Email Address	X	Edit Box (100 Characters)
Gender		Radio Button (Male / Female)
Birth Date	X	Date Picker

d. There are a few restrictions on the data entered in the registration form:
    i. The username must be unique. If a user chooses a username that already exists, she will be presented with an appropriate message as well as a suggestion for an alternative username that doesn't exist. The algorithm for choosing the alternative username is simply to add a random number to the original username, such that the suggested username doesn’t exist.
    ii. The password must be strong. A strong password is at least 5 characters long with a combination of small letters, capital letters and digits. A strong password must contain at least one small letter, at least one capital letters and at least one digit. The password can't be equal to the username, and it can't be the word "password" (in any combination of small and capital letters).
    iii. The email address must have a legal email address format.
    iv. The email address must be unique, just like the username. Two distinct players can't share the same email address.
    v. Only users above 18 years of age are allowed to register to the online casino and become players.
e. If a player tries to login and provides a wrong password 5 times in a row (for the same username), that player will be blocked, and she won't be able to login to the system until she is unblocked again. A blocked player needs to call the support in order to become unblocked again. When the support team unblocks a player, her password is reset to a new random strong password that presented to the player.
f. After a successful login, the player will enter the casino lobby. In The lobby the player will be able to choose between the game ground, the cashier and the administration office. The player will see her current bankroll on the screen. The bankroll is the amount of money the player has in the casino. It is a result of money transactions (deposits and cashouts), game transactions (wins and losses) and bonuses.
g. In the game ground, the player will choose a game to play. The available games are: slot machine. After the player chooses a game, she will enter the game form, in which she will be able to play. Playing a game is done in rounds. In each round, the player chooses a bet amount (which has to be smaller or equal to her bankroll) and plays the game. If the player wins the game round, she receives the bet amount back plus an additional amount equals to the bet amount. If the player loses, she simply loses the bet amount.
h. In the slot machine there are 3 wheels, and there are a total of 6 unique symbols. Only if the same symbol appears on all 3 wheels, the player wins. Otherwise, the player loses.
i. If a player tries to login while she is already logged in, the second login attempt will be denied.
j. When a player first registers, she receives a welcome bonus of $10.

k. The player will be able to generate several reports:
   1) Game History
      - Report Fields:
        - Game Type
        - Round Number
        - Bet Amount
        - Win (Yes/No)
        - Date & Time
      - The player will be able to filter the report by game type and by a range of date & times - The report will be sorted by the game date & time in descending order
   2) Bankroll Transactions
      - Report Fields:
        - Transaction Number
        - Transaction Type (Deposit/Cashout/Win/Loss/Bonus)
        - Date & Time
        - Amount
        - Bankroll Amount (as it was right after the transaction)
      - The player will be able to filter the report by a range of date & times.
      - The report will be sorted by the transaction date & time in descending order.
   3) Game Statistics
      - Report Fields:
        - Game Type
        - Date
        - Number of Rounds
        - Number of Winnings
        - Total Bet Amount
        - Total Winning Amount
      - The report will display the statistics for the last 7 days.
      - This report has no filters.
      - The report will be sorted by game type in ascending order and then by date in descending order.

l. The system should be optimized for best performance.
m. The integrity of the data is very important, so steps should be taken to keep the data valid and clean.
n. All the Table's name shall prefix with utbl_*, all the procedure shall be prefixed with usp_*

Deliverables

a. High level design document describing the system architecture and all the assumptions you made and the comments you have about your solution
b. ERD (Entity-Relationship Diagram)
c. A SSMS solution including:
    1. Scripts to create all the databases
    2. Scripts to create all the database objects
    3. Scripts to insert static data into the dictionary tables
    4. Scripts to insert test data into all the tables
    5. Scripts to implement all the required solutions
d. Any other resources required to fully implement your solution