Project Specification for Four-Member Teams

The following project assignment is intended for students working in a team of four members.

ROLES AND LIST OF FUNCTIONALITIES

Team Functionality

- **User Login and Logout:** Enable login and logout functionality for all users. All users, regardless of their role, should log in using a single, shared form for entering a username and password. Based on the user's role, the appropriate screen is displayed.

1   Owner

- **Accommodation Registration:** The owner can register new accommodations. During registration, the owner enters the following details:
  1. Name
  2. Location: city and country
  3. Type (apartment, house, cabin)
  4. Maximum number of guests
  5. Minimum number of reservation days
  6. Number of days before the reservation within which cancellation is possible (default value is one day, but the owner can specify a different number)
  7. One or more images (provide a URL for each image)

- **Accommodation Statistics:** The owner selects an accommodation for which they want to view statistics. The system then displays statistics by year, showing the following for each year: the number of reservations for the selected accommodation, the number of reservation cancellations, the number of reservation reschedules, and the number of renovation recommendations. If the owner selects a specific year, all of the above information is displayed monthly for that year. Additionally, the system should indicate the year (or month) in which the selected accommodation was most occupied. Occupancy is calculated as the number of days the accommodation was booked relative to the total number of days in the month or year.

- **Suggestions for Registering New Accommodations or Removing Existing Ones:** Based on reservation statistics, the system can suggest to the owner potential opportunities to open additional accommodations in the most popular locations. The most popular locations are those with accommodations that have the highest number of reservations and the highest occupancy rate. On the other hand, for less popular locations (those with the fewest reservations and the lowest occupancy rates), the system can suggest closing existing accommodations. The owner should be able to view these suggestions in the system.

- **Managing Reservation Reschedule Requests:** The owner can approve or decline requests to reschedule reservations (change reservation dates). The owner can view all requests made by guests, with the system providing information on whether the new requested dates are already booked. The owner can approve or decline a request regardless of the system's notification about the new dates being booked (e.g., it is possible that someone canceled a reservation via phone, and the information has not yet been entered into the system, meaning the system still shows the accommodation as booked, but some dates have actually been freed). The owner can provide an explanation when declining a request. If the owner approves the change, it will be automatically updated in the system, and the reservation dates will be modified accordingly.

- **Guest Rating:** After a guest completes their stay at the accommodation, the owner has the opportunity to rate the guest. The rating period lasts for 5 days, after which the guest can no longer be rated. The system should send daily reminders to the owner to encourage them to rate the guest (the notifications stop once the owner has rated the guest). The owner fills out several categories when rating: cleanliness (1-5), adherence to rules (1-5), and an additional comment.

- **Review Display:** The owner can see the ratings they received from their guests only after they have rated their guests, in order to maintain objectivity in the rating process.

- **Super-Owner:** An owner can become a super-owner if they have at least 50 guest ratings, with an average rating above 9.5. If the rating drops below 9.5, the owner loses the super-owner title, but can regain it once the average rating rises back above 9.5. Being a super-owner means that all of this owner's accommodations will be shown first to guests when browsing or searching for accommodations, and they will be specially highlighted to guests (e.g., with a star).

- **Scheduling Renovations:** The owner selects the accommodation they wish to renovate, enters the date range (start and end) when they want to schedule the renovation, and specifies the estimated duration of the renovation. The system should find available slots within the given date range for the specified duration. Available slots are those where no reservations exist. The owner selects one of the available slots and provides a description of the renovation. During the scheduled renovation period, guests cannot book the accommodation. After the renovation is completed, the accommodation should be marked as recently renovated, so guests searching for accommodations can see this information. This label should remain for one year after the renovation, and then it should be removed.

- **Viewing and Cancelling Scheduled Renovations:** The owner can view all past and upcoming (scheduled) renovations for their accommodations. Cancelling scheduled renovations should be allowed only if there are more than 5 days left before the renovation begins.

- **Notification of New Forum and Commenting on the Forum:** When a guest opens a forum for a location where the owner has at least one accommodation, the owner receives a notification that the forum has been opened and can leave a comment. Only owners who have accommodations at that location can leave comments. The comment will be specially marked as being from an owner with an accommodation at that location. Forums that receive 10 owner comments (and 20 guest comments from guests who have stayed at that location) will be marked as very useful.

● **Reporting Comments on the Forum:** The owner can report comments from guests who have never stayed at the location but left inaccurate comments on the forum. The number of reports on a specific comment is visible to everyone on the forum, so users can know which comments might be invalid, as they were left by guests who (at least according to the data in this application) have not stayed at that location.

2   Guest 1

● **Viewing and Searching for Accommodations:** The guest can browse all available accommodations or search for them using the following parameters:
1. Name: During the search, the system should display accommodations that contain the specified search term in their name.
2. Location: City and country.
3. Type: (Apartment, house, cabin).
4. Number of Guests: The search should ensure that the number of guests does not exceed the maximum number of guests set by the owner.
5. Number of Reservation Days: The search should ensure that the number of days for the reservation is not less than the minimum number of days required by the owner.

● **Accommodation Reservation:** The guest selects one of the accommodations, enters a date range for which they want to search for available dates (start and end dates), and the number of days for their stay. The system should ensure that the reservation does not violate the minimum number of days required by the owner (the owner's setting). The system will find available dates within the selected date range for the specified number of days. If the accommodation is not available during the specified date range for the requested number of days, the system will propose other available dates outside of the guest's selected range, while respecting the number of days the guest has chosen. Once available dates are found, the guest selects one of the proposed options and enters the number of people coming, ensuring the maximum number of guests set by the owner is not exceeded. The system will mark the reserved accommodation as occupied for the chosen dates.

● **Rating the Accommodation and Owner:** After their stay, the guest can rate the accommodation and the owner, but no later than 5 days after the stay. The guest fills out several categories when rating: cleanliness (1-5), owner's honesty (1-5), and an additional comment. The guest can also upload one or more images of the accommodation (for each image, the URL must be provided).

● **Renovation Recommendation**: The guest can write a recommendation for renovation to the owner at the end of their review (from the "Rating Accommodation and Owner" functionality). In this recommendation, the guest needs to fill in information about the condition of the accommodation (what was wrong or what should be renovated) and the urgency level of the renovation. The levels of urgency are explained as follows:

- **Level 1:** It would be nice to renovate some minor details, but everything works fine without it.
- **Level 2:** Small issues with the accommodation that, if fixed, would make it perfect.
- **Level 3:** Several things that were quite bothersome and should be renovated.
- **Level 4:** There are many issues, and renovation is truly necessary.
- **Level 5:** The accommodation is in very poor condition and should not be rented out unless renovated.

● **Displaying Reviews:** The guest can view the ratings given to them by the owners where they have stayed, but only after they have rated the owners themselves, ensuring the objectivity of the ratings.

● **Displaying and Sending a Reservation Change Request:** The guest can send a request to the owner to change a previously made reservation. The guest can view all requests: pending, approved, or rejected, along with the owner's comments. When the owner approves or rejects the request, the guest will receive a notification about the status change of the request.

● **Canceling Reservations:** The guest can cancel a reservation up to 24 hours before the start date of their stay, unless there are other restrictions set by the owner, which must be respected (e.g., the owner may have set a cancellation policy of 3 days before the reservation). When a reservation is canceled, the owner is notified, and the accommodation becomes available on the selected dates.

● **"Anywhere/Anytime":** The guest enters the number of people, a date range for when they would like to travel, and the duration of their stay. The system finds available accommodations within the specified date range at any location that can accommodate the number of people and duration specified. If the guest does not enter a date range, the system searches for accommodations available anytime for the specified number of people and days. Once the system finds available accommodations, it displays them to the guest and offers available dates that the guest can choose from to make a reservation.

● **Super-Guest:** A guest can become a super-guest if they have made at least 10 reservations in the past year. The super-guest title lasts for one year and expires if the guest fails to meet the 10 reservation requirement again. The super-guest receives 5 bonus points, which can be used within the next year. After the year ends, the points reset to 0 (if the guest does not maintain the super-guest status, the bonus points are erased; if they do, the points reset and 5 new ones are awarded). With each new reservation, one bonus point is used, granting discounts. This means the super-guest can make 5 discounted reservations, though discounts and payments are handled outside this application with the owner.

● **Opening a Forum:** A guest can start a forum for a specific location to gather experiences from others. The guest provides the location and leaves the first comment (e.g., some questions they would like answered). The guest who opens the forum can close it at any time, but it cannot be deleted; it will remain visible permanently.

- **Leaving Comments on the Forum:** Any guest can leave comments on an open forum, but if the guest has previously stayed at the given location (with a confirmed reservation or tour), their comment will be specially marked. Forums that accumulate 20 comments from guests who have visited the location (and 10 from owners who have accommodations at that location) will be marked as "very useful."

3   Guide

- **Creating a Tour:** A guide can create a new tour by providing the following information:
  1. Name : The name of the tour.
  2. Location: City and country of the tour.
  3. Description: A detailed description of the tour.
  4. Language: The language(s) in which the tour is offered (e.g., English, etc.).
  5. Max Number of Guests: The maximum number of people that can join the tour.
  6. Key Points: The tour must consist of at least two key points, the starting and ending points, with the possibility of adding more in between.
  7. Date and Time of Start: The start date and time of the tour (multiple dates and times can be set if the tour repeats).
  8. Duration: The duration of the tour in hours.
  9. One or More Images: The URLs for one or more images associated with the tour.

- **Canceling a Tour:** A guide can choose one of their tours and cancel it no later than 48 hours before the start of the tour. All guests who have signed up for the tour will receive a voucher for any other tour, which they can use within the next year as compensation for the canceled tour.

- **Live Tour Tracking:** The guide has access to a list of tours that are happening today. For any of these tours, they can mark the tour as started. A guide cannot have multiple tours started simultaneously, only one at a time. Once the tour starts, the guide will see the key points of that tour, and they can mark specific points as they reach them (the first key point is already marked when the tour starts). The guide needs to mark which guests from the list are present on the tour and at which point (which key point the guest joined). Guests will have to confirm their presence after the guide marks them as present. When the tour ends, the guide must mark it as finished (the tour can be marked as finished once the last key point is reached, or it can be marked earlier, for example, by pressing a special button if the tour unexpectedly ends before reaching the last key point).

- **Tour Statistics:** The guide can view one of their most visited tours, either overall (for all time) or for a selected year. The visitor count is based on the number of people on the tour. The guide can select one of their tours to view statistics about the guests who attended it. The statistics displayed will include the number of guests from different age groups: under 18 years old, between 18 and 50 years old, and over 50 years old. Additionally, the guide can see the percentage of guests who attended the tour using a voucher and the percentage who attended without one. All tours shown in the statistics must be completed tours.

- **Resignation:** The guide has the option to resign. All pre-booked tours with this guide will be canceled, and guests will be given one voucher for each tour they had booked with this guide. The voucher can be used for any tour within the next 2 years. Additionally, if there are guests who previously had a voucher specifically for this guide's tours, those vouchers will now be valid for any tour, not just tours with this guide.

- **Review Display:** Once the tour is completed, the guide can view the ratings received from the guests. For each guest, the guide can also see when they joined the tour (during which key point) and can report their review if the guest wrote about a part of the tour they did not attend. A label will appear next to that guest's review indicating that it is invalid.

- **Super-guide:** A guide can become a super-guide for a specific language (e.g., English) if they have led at least 20 tours in the past year in that language and the average rating for their tours in the last year in that language is above 9.0. Being a super-guide means that all of this guide's tours will be shown first to guests when displaying or searching for tours, and will be specially highlighted. If, in the following year, the guide does not fulfill the 20 tours in that language and does not maintain an average of 9.0, they will lose their super-guide status.

- **Accepting a Tour Request:** The guide can view all tour requests and filter them by the following parameters: location, number of people, language, and date. If the guide selects a date, they enter a date range, and the system lists all the tour requests within the specified range. If the guide accepts the tour, they determine the date within the range the guest provided. The guide must be available during that date and time, meaning they should not have another tour scheduled at that time. The guest will be notified that the tour has been accepted and the date the guide has selected.

- **Accepting Part of a Tour in a Complex Tour Request:** The guide can only accept one part of a tour in a complex tour request, allowing other guides to take over the remaining parts. Since the guest has provided a desired date range for when a part of the tour can be organized, the system should prevent the guide from applying for parts of the tour when they are unavailable. For the parts of the tour where the guide is available, the system should list the possible dates when that part of the tour can be organized (i.e., when the guide is free to conduct that part of the tour), and these dates should not overlap with the dates already accepted for other parts of the same complex tour (e.g., if the guest provided the same date range for each part of the tour, there could be overlapping schedules, which should be carefully managed). The guide can choose one of the proposed dates and thus accept leading part of the tour.

- **Tour Request Statistics:** The statistics for tour requests are based on all requests, not just those accepted by the guide. The guide can select a specific location or language and view the number of tour requests for that location or language. This number of requests can be displayed by year or, if the guide selects a specific year, by month within that chosen year.

- **Creating a Tour Based on Tour Request Statistics:** The system should suggest to the guide to create a tour for the most requested location or language. The most requested location or language is determined based on the number of tour requests made in the last year. The guide can accept the system's suggestion and proceed with creating the tour by filling out the remaining details that they would normally enter when creating a tour (with the location or language already pre-set).

4   Guest 2

- **Displaying and Searching Tours:** A guest can view all offered tours or search for them based on the following parameters:
  1. Location: city and country
  2. Duration of the tour
  3. Language
  4. Number of people (when searching, the number should not exceed the maximum number of guests set by the guide)

- **Tour Reservation:** The guest selects one of the tours and the number of people attending. The system checks whether the tour is already fully booked and notifies the guest if there is no available space for the selected number of people. Additionally, the system displays the number of available spots if the tour is not fully booked. The guest can change the number of people or cancel the reservation. If the tour is fully booked, the system will offer other tours at the same location. The guest can attempt to book one of the alternative tours (by entering the number of people again) or cancel. Once a tour is reserved, the system reduces the number of available spots on that tour.

- **Attendance on the Tour:** The guest can track the progress of the tour they have signed up for and that is currently active (the guide has started it and is recording the key points). When the guest joins the tour and the guide marks their presence, the guest receives a notification that they have been added to the tour as present and must confirm it in order for their attendance to be officially recorded.

- **Rating the Tour and the Guide:** After a tour concludes, and the guest has been marked as present by the guide, the guest can rate the tour. The guest fills out several categories when rating: the guide's knowledge (1-5), the guide's language (1-5), the interest level of the tour (1-5), and an additional comment. The guest can also upload one or more images from the tour (for each image, the URL must be provided).

- **Viewing and Creating a Tour Request:** The guest can create a request for a special tour and search for guides who can organize it. After creating the tour request, the guest can see the request in the list of all their tour requests. The status of the request will be "pending" until a guide accepts it. If no guide accepts the request within 48 hours before the selected date range, the tour request becomes "invalid." When a guide accepts the tour, the request status changes to "accepted," and the guest receives a notification with the date and time the guide has set.

The guest creates a tour request by specifying:
1. Location: city and country
2. Description
3. Language
4. Number of guests
5. Date range during which the tour would be organized

- **Tour Request Statistics:** The guest can view statistics about their tour requests (only regular tours, not complex tours). The guest can see the percentage of requests that have been accepted by guides and the percentage of those that have not (either for all time or for a selected year). The guest should be able to view the number of requests by language (e.g., x-axis is the language of the tour, y-axis is the number of requests). The same should be done for location. The average number of people in accepted requests should also be displayed (either for all time or for a selected year).

- **Notification About New Tours:** When guides create new tours based on tour requests (using the "Creating a Tour Based on Tour Request Statistics" functionality), the system should check if these new tours have a location or language set that matches any guest request that has never been fulfilled (e.g., many guests have made requests for tours in Norwegian; guides have created new tours based on these requests; guests with unmet requests for Norwegian language tours will be notified). In addition to the notification, the guest will be able to see the details of the newly created tour.

- **Displaying and Creating Requests for Complex Tours:** The guest can create a request for a complex tour and seek guides who would organize it. A complex tour consists of multiple regular tours, so all the same data as in the "Displaying and Creating Requests for a Tour" functionality must be entered for each part of the complex tour. After creating the request for a complex tour, the guest can see the request in the list of all their requests for complex tours. This request will have the status "pending" until the guides accept each part of the complex tour. If no guide accepts any part of the tour 48 hours before the selected date range for the first part of the tour, the complex tour request becomes "invalid." If all the guides accept all parts of the tour, the request becomes "accepted."
  To create a request for a complex tour, the guest needs to specify the following for each part of the tour:
  1. Location
  2. Description
  3. Language
  4. Number of guests
  5. Date range

- **Partially Accepted Complex Tours:** Allow the guest to view all parts of a selected complex tour in the list of their complex tour requests. For each part, the statuses "pending," "invalid," and "accepted" need to be displayed. Only those parts of the tour that have been accepted by a guide will have the status "accepted." In addition to the status, the guest will also see the date range the guide selected when accepting the part of the tour.

- **Voucher Earning:** A guest can earn a voucher if they attend 5 tours of any kind within one year. These vouchers are valid for 6 months and can be used for any tour.

Displaying and Using Vouchers: A guest can see all the vouchers they have received (either because the guide canceled a tour, the guide quit, or the guest earned a voucher) and the expiration date for each voucher. When reserving a future tour, the guest will be shown all valid vouchers, and they can select one to use. When a voucher expires, it will be removed from the list of vouchers.