Linnaeus University | Faculty of Technology | 1DV607

Objektorienterad analys och design med UML

Problem description

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The yacht club "The happy pirate" has started to get problems. The club has grown to such an extent that the members have a hard time keeping track of all meetings, and other important dates such as the club's various competitions. It is also difficult for a member to change information in the membership registry, for example change address or reporting that they have a newly purchased boat. The result of this is that members sometimes are without a reserved berth, when it became time for launch towards the spring.

The reservation of berths is operated by the club secretary and he goes through all members' boats and book their berth in the spring. This is a very "tricky" work, members owning several boats would love to have them as close together as possible, while they want their "usual" place. Much fuss and mess usually follow the announcement of this year's places, and sometimes even "private" exchanges between members occurs, which strongly opposed by the municipality for safety reasons.

The biggest problem, however, has the club's treasurer, it is quite impossible for the treasurer to manage all subscriptions manually via receipts that members come in with when they paid their fees. The fee consists of a fixed part and a variable part, where the variable component is dependent on the number and the size of the boats. Several members probably slips through each year without paying a fee, the result of wich is that the club will soon go bankrupt.

Primary Actors

Secretary : booking / troubleshooting(disputes + private exchange) / managing calendar

Wants to book berths for members in a fair and effective manner. Wants to minimize "whining" when advertising of berts and avoid that private exchanges occurs. Would also be able to manage the club's calendar where important events and meetings are advertised.

Treasurer : manage payments (receive + access history)

Wants to manage member payments in an efficient manner. It is also important that the Treasurer has access to history in the payments for accounting purposes.

Member : manage membership data(address + boa) / overview of their payments / participating events

A person who is a member of the boat club, probably has one or more boats registered and want a good berth for these. Want to manage their membership data, including boats, as well as to have a smooth overview of their payments. Would also like to be able to participate in various boat club meetings and social activities.

Supporting Actors payment: "payment method + transaction ID + transaction result" -> successful

Third-party systems for credit card payment

p> A service used to handle payment via credit card. Receives a transaction ID and a sum, will respond with a positive or negative result.

Third-party systems for Direct Payment

A service used to manage the direct payment online banking. Receives a transaction ID and a sum, will respond with a positive or negative result. In case of positive results money is deducted from the payer's account 00:00 o'clock the next day, and the transaction may be rescinded by the payer prior to tis alternatively, there is not enough money in the account.

Third party systems for SMS payment

A service for payment via SMS. A special message with the transaction id is sent by the payer. This transaction id is provided by the service and includes a checksum so that typing errors are minimized. The payment will be deducted from the payer's phone bill.

Offstage Actors

Exclude from the domain (not relevant)

Municipality

Have an interest in knowing what boat owners have what berth. This is important in te event of for example example accidents, thefts or similar.

The tax authority

Have an interest in that the current regulations regarding the taxation of income associations are followed.

Use Cases

1 Authenticate   *Green marks -> grade 2 requirements*

A person wants to be authenticated as a role. The person is authenticated and assigned a role.

Precondition: The person is not already assigned a user role.

Main scenario

1. The person wants to be authenticated.
2. The system asks for log in information.
3. The person supplies a user name and password
4. The system controls the username and password and authenticates the person as a user role (Member, Treasurer, Secretary) in the system, the assigned user role is presented.

Secondary Scenarios

2.1 The combination of user name and password is wrong

1. The system presents an error message and asks for log in information again.
2. Go to step 3 in main scenario.

2 Pay Membership Fee

A member wants to pay their dues. The fee and payment options are presented and Member proceeds with payment. The payment is recorded and its status is updated, a receipt is presented.

Primary Actor: User

Main Scenario

1. The member wants to pay their dues.
2. The system presents the calculation of membership and a total amount due.
3. The member chooses to pay via credit card.
4. The system transmits a transaction id and a total to third-party system for Credit Card Payment.
5. Third Party Credit Card Payments System for process the transaction and reply with a positive result.
6. The system updates the Member's pay status to paid and presents a receipt of the transaction.

Secondary Scenarios

3.1 The member chooses to pay via invoice

1. The system presents an invoice for printing with a unique invoice id, boat club account number and amount due. The amount due is the total membership fee plus an administrative service charge of currently 45 swedish crowns.
2. The user confirms the invoice.
3. The system updates the member's payment status to invoiced and presents that the payment status changed.

3.2 The member chooses to pay via SMS payment

1. The system contacts the Third Party System for SMS payment and enclose the sum total of the transaction.
2. The third-party systems for SMS payment replies with the SMS message to be sent to process the payment.
3. The system updates member's payment status to waiting. SMS message to be sent is presented.

3.3 The member chooses to pay via third party systems for Direct Payment

1. The system transmits a transaction id and a total to third-party systems for Direct Payment.
2. Third Party System for Direct Payment process the payment and reply with a positive result.

3. The System updates the Member's pay status to paid and presents a receipt of the transaction.

3 View Member Profile Information

A member wants to view their member data. Membership details are presented including registreade boats booked berths and payment history.

4 Register Boat

A member wants to register a new boat and the boat's data. The boat is registered, the membership fee is updated and a confirmation appears.

Main Scenario

1. A member wants to register a new boat.
2. The system asks for Boat Details.
3. The member input the boat's size and type (sailboat, motorsailer, powerboat, kayak/canoe, other) and an optional image of the boat.
4. The system presents the information for the boat to be registered, including cost of berth.
5. The member confirms the correct information.
6. The System registers the boat and assigns a berth using the current rules for berth assigment, updates the membership fee and presents a confirmation.

Secondary Scenarios

6.1 The boat is registered during the "offseason" (October 1 to December 31)

1. System assigns no berth and the membership fee for the current year is unchanged.

6.2 The boat is registered in pre-season (January 1 to April 1) when no berth assignment has been made yet.

1. System assigns no berth. This is done by the Secretary before the start of the season.

5 Remove a Boat

A Member To remove one of their registered boats. The boat is removed and a confirmation appears.

6 Change a boat.

A Member wants to change a boat's data. The boat's data is updated and a confirmation appears.

7 Send Payment Reminder

The treasurer lists and send a reminder to those members who have not paid enough dues for a calendar year.

Main Scenario

1. The treasurer wants to send a reminder to those members who have not paid enough dues for a previous year and indicates the year considered.
2. The system lists the members who have a debt to the boat club during the year.
3. The treasurer choose to print an invoice for each member (see 2.3.1) in the invoice also includes a reminder fee of 25% per year behind schedule.
4. The system prints an invoice per member and records that the member received a payment reminder.

8 Assign Berths

The Secretary wants to assign this season berths. The system assign and book berths in accordance with applicable rules and update member information.

Main Scenario

1. The Secretary wants to book this season berths.
2. The system presents a proposal on the allocation under the current rules, the available berths and the previous year's allocation.
3. The Secretary approves the proposal.

4. The system assigns moorings for members' boats according to the proposal.

9 List Berths

The secretary chooses to list all berths. A list of unbooked and booked berths with information about the boat and member is presented.

10 Manage Calendar Events

The Secretary wants to add, delete or change a calendar event. Boat club calendar is updated.

11 List Calendar Events

A Member wish to list calendar events in a certain time interval. A list of calendar events are presented with a short title and start date.

12 View Calendar Events

Member to view all details for a particular calendar event. Calendar event is presented including start and end dates.

13 Update Payment Status

The Treasurer would like to update the status of payments. The system will contact third party services and check the status of payments and update these.

14 Update Invoice Status

The Treasurer wants to change a Member's payment status to paid. The system updates the Member's payment status to paid.

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