# UI (Use Cases)

## Book seat

It is assumed that the passenger always is a new passenger.

### Dialog outline

Blue = system output  
Black = user input

Main dialog - seats for both classes are available:

Enter command> BOOK

Enter first or economy class (f/e)> <f/e>

<a list available seats for selected aircraft>

Enter seat no (0 = cancel reservation)> <seat no>

Enter passenger name> <passenger name>

<a list of available meals (no, description, price)>

Select meal (0 = no meal)> <meal no>

<a confirmation message e.g. Seat <seat no> in aircraft <aircraft no> reserved to <passenger name>. Meal <meal no> ordered.>

Total price: <price>

Confirm reservation (y/n)> <y/n>

Booking code: <booking code>

Variant 1: seats for only one class are available:

Enter command> BOOK

Only seats for first/economy class is available

<a list available seats for selected aircraft >

Enter seat no (0 = cancel reservation)> <seat no>

… the rest as above

Variant 2: no seats available:

Enter command> BOOK

No seats available for aircraft <aircraft no>.

### Extensions

Rebook and cancel seat

## Book meal

Part of the book seat UI operation. Separate UI operation is extension

### Extensions

Rebook and cancel meal

Multiple meals (items)

## Get price

Part of the book seat UI operation. Separate UI operation is extension

## Get revenue and profit

### Dialog outline

Enter command> SUMMARY

Enter aircraft no (0 = all aircrafts)> <aircraft no>

Total revenue: <the price for all passengers>

Total profit: <the price for all passengers \* 0.3>

## Clear bookings

This operation is not explicitly specified but still needed.

### Dialog outline

Enter command> CLEAR

Confirm clear (y/n)> <y/n>

## List bookings

This operation is not explicitly specified but useful for testing.

### Dialog outline

Enter command> LIST

<a list of reservations (seat, section, passanger name, ordered meal)>

## Select Aircraft

Select the aircraft for which reservations are made.

### Dialog outline

Enter command> SELECT

Enter aircraft no (0 = abort)> <aircraft no>

## Depart Aircraft

Sends the aircraft away …

### Dialog outline

Enter command> DEPART

Enter aircraft no (0 = abort)> <aircraft no>

Confirm adding aircraft <aircraft no> to the fleet (y/n)> <y/n>

## Add Aircraft (Extension)

Adds an aircraft to the fleet.

### Dialog outline

Enter command> ADD AIRCRAFT

Enter aircraft no (0 = abort)> <aircraft no>

Enter aircraft model> <aircraft model name>

Confirm adding aircraft <aircraft no> to the fleet (y/n)> <y/n>

## Remove Aircraft (Extension)

Removes an aircraft from the fleet.

### Dialog outline

Enter command> REMOVE AIRCRAFT

Enter aircraft no (0 = abort)> <aircraft no>

Confirm removing aircraft <aircraft no> from the fleet (y/n)> <y/n>

# Requirements

## Assign seats on the airline’s airplane.

1: The Customer can choose between first class and economy class.

2: The airplane has 10 seats.

3: If the customer chooses first class, your application should assign a seat in the first class section (seats 1–5).

4: If the user chooses economy class, your application should assign a seat in the economy section (seats 6–10).

5: A first class ticket costs 20 000kr and an Economy ticket 5000kr.

6: Never assign a seat that has already been assigned.

7: If there are no available tickets in the section, ask the customer if he wants to be place in another section.

8: Extension: add rebook and cancel seat

9: Extension: add rebook and cancel meal

## Food service available on the airplane

1: the customer can choose no/yes if he wants to eat food on the airplane.

2: list of food items and assign a prize for each item.

3: The first class travellers have a separate menu from the economy travellers.

4: Calculate the food price for each traveller.

5: Extension: add support for multiple items?

## The complete booking system

1: Integrate the food reservation and the ticket reservation in the same system

2: print the total price for each passenger (food + ticket).

## Summing up

1: Calculate the income (revenue) for the airline company by summing up the prices of the ticket and food items for all passengers. Print the total income for the company.

2: Assume that 70% of the income is used to cover all the costs for the company. The total profit for the company’s is then 0.3\*income. Print the profit.

## Optional Bonus Assignment 1

1: Add 2 more airplanes. The new airplanes have 10 seats (5 First class and 5 Economy class).

2: Allow for planes to be added/removed and modified.

## Optional Bonus Assignment 2

1: When the booking desk has finished the bookings for each plane they can be sent off.

2: Add threads for simulating the flight for each airplane - simulate and print the take-off, flight, landing and refuel for each airplane.

3: Assume that it takes 1 minute to travel from source to destination:

4: The booking desk should only be able to book passengers for a plane that is currently waiting at an airport.

# Project Assignment

A small airline company has just purchased a computer for its new automated reservations system. You have been asked to develop the new system. You are to write an application to assign seats on the airline’s airplane. The Customer can choose between first class and economy class.

The airplane has 10 seats. There is also food service available on the airplane, and the customer can choose no/yes if he wants to eat food on the airplane.

## Airplane reservation

If the customer chooses first class, your application should assign a seat in the first class section (seats 1–5). If the user chooses economy class, your application should assign a seat in the economy section (seats 6–10). A first class ticket costs 20 000kr and an Economy ticket 5000kr.

Your application should never assign a seat that has already been assigned. If there are no available tickets in the section, ask the customer if he wants to be place in another section.

## The food service

The customers can reserve food on the airplane. Create a list of food items and assign a prize for each item. The first class travellers have a separate menu from the economy travellers. Calculate the food price for each traveller.

## The complete booking system:

Integrate the food reservation and the ticket reservation in the same system and print the total price for each passenger (food + ticket). Calculate the income for the airline company by summing up the prices of the ticket and food items for all passengers. Print the total income for the company. Assume that 70% of the income is used to cover all the costs for the company. The total profit for the company’s is then 0.3\*income. Print the profit.

## Optional Bonus Assignment 1

The airline company wants to expand its business by adding 2 more airplanes. The new airplanes have 10 seats (5 First class and 5 Economy class). Change your code so that the airplanes can be used. Make your code flexible so that planes can be added/removed and modified without breaking the code.

## Optional Bonus Assignment 2

Assume that it takes 1 minute to travel from source to destination: Add threads for simulating each airplane, when the booking desk has finished the bookings for each plane they can be sent off. When the plane is sent off simulate and print the take-off, flight, landing and refuel for each airplane. The booking desk should only be able to book passengers for a plane that is currently waiting at an airport.

Presentation of project: Thursday 24th of November 9-16, 10-20 minutes.

Present the solution or parts of the solution on the projector, and make a

short powerpoint presentation