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**ICT Engineering**

**Semester 2**

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**Table of content**

1. Background description i
2. Definition of purpose iii
3. Problem Statement iv
4. Delimitation v
5. Choice of models and methods vi
6. Time schedule vii
7. Risk assessment viii
8. Sources of Information ix

Appendices (including Group Contract)

# Background description

According to The World Bank (2016), in the second half of the 20th century air transportation began to grow rapidly. In the period\* from 2000 to 2016, the number of passengers carried increased by 120% (1,674 billion to 3,696 billion passengers carried per year). Statistics forecasts an increase in demand for passenger transportation. The current systems are not maintainable as the stream of passengers is growing. In this case, there will be a need for a new system to handle the current growth.

A business with the name of Arkia Israeli Airlines operates scheduled flights, linking several cities from Israel as well as charter flights to some European destinations. Similar to Zair, AIA had problems with managing bookings, as they had a manual management system, which often included issues such as double-booking and the inability to relate outbound and inbound flights of specific passengers. By developing their own tailored management system, called AMSYS, they managed to not only solve their problems, but also introduce custom features, their own security measures, improve their ticket revenue, it being the main source of income, and reduce costs compared to buying a generic system from other companies and as stated by Arkia Israeli Airlines (1988).

Zair is an upcoming airline business that runs on a system that it uses from the startup. Zair has its head office in Horsens, currently managing direct flights all over Europe and looking forward to expanding to other continents. Some services that it provides are booking flights, seat reservation, management of the price of the tickets, providing the cheapest tickets for frequent travelers, account system, discounts for the clients etc. With the present growth of the market, the current system is lacking in fulfilling the needs of the growing company.

Zair gains most of its profit from ticket revenue. Managing the price of the tickets is a vital factor in the development of the business. “The advent of advanced computerized reservations systems in the late 1970s, most notably Sabre, allowed airlines to easily perform cost-benefit analyses on different pricing structures, leading to almost perfect price discrimination in some cases (that is, filling each seat on an aircraft at the highest price that can be charged without driving the consumer elsewhere) as reported by Wikipedia on Airline Ticket revenue(2012). The business needs a tailored system to help in the management of the price of tickets considering how much time there is until the flight.

The airline business looks forward to improving their system, so they can expand to other continents and gain a loyal following of customers while keeping its initial features of helping heavy travelers get their satisfaction and low prices.

# Definition of purpose

The purpose of the project is to help Zair manage their bookings in a more efficient manner and create an interface that attracts frequent travelers.

# Problem Statement

The project focus is to create a system responsible for keeping track of reservations, prices and customers.

The questions to be answered are the following:

1. How can we make sure that double bookings and over-bookings are not going to happen?
2. What will be the price of the tickets considering the date until the flight?
3. What are we going to store regarding customer’s personal data?
4. What will make a list of cheap flights?

# Delimitation

- The system will not sell the tickets and will not manage the payments for Zair

- Standard seats for each flight

- The system will not handle security issues

- The user will not be able to be change his password

# Choice of models and methods

# Time schedule

10 ECTS = 275 Hours per Student

1100 hours in total (4 students)

# Risk assessment

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Risks | Description | Likelihood  Scale 1-5  5 = high risk | Severity  Scale 1-5  5 = high risk | Risk mitigation  e.g. Preventive & Responsive actions | Identifiers | Responsible |
| Risk not to meet the requirements | Lack of time, poorly made schedule, insufficient knowledge; | 2 | 5 | Preventive:  Proper management of the requirements; Respect the schedule;  Responsive:  Accomplish what was agreed on; | Being behind the schedule; | Claudiu |
| Technical issues | Software crashes, broken computers, unsaved files; | 2 | 5 | Preventive:  Having everything backed up on GitHub;  Responsive:  Restore data from GitHub; | Corrupt data; | Claudiu |
| Injuries or illness | Seasonal viruses, bicycle accidents; | 3 | 2 | Responsive:  Work from home; |  | Dominika |
| Insufficient knowledge in software development | Lack of knowledge in databases; | 2 | 4 | Preventive:  Read additional materials and keep up with class exercises; |  | Tudor |
| Group conflicts | Fights and disagreements between members; | 1 | 4 | Preventive:  Follow Group Contract;  Responsive:  Try to compromise; |  | Nikita |

# Sources of Information

The World Bank, n.d, *Air transport, passengers carried* [online]. Available at <https://data.worldbank.org/indicator/IS.AIR.PSGR?end=2016&start=2000&view=chart&year\_high\_desc=false> [Accessed 2 March 2018];

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**Appendices**