**Project Description**

**Fly High – Airline Management System**

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# Background description

The use of flights, both in terms of travelling and airfreight, has greatly increased over the past decades, air travel becoming one of the most important modes of transport nowadays. Dating back to 1903 with the first flight of two American engineers brothers, the air transport is and has demonstrated itself to be a thriving market which doubles its volume of passengers every 15 years. Worldwide, in 2016, there have been over 3.7 billion passengers carried by air. The 60 % growth of the market over the last ten years shows the efficiency of air travel, including time, convenience and costs. (AIRBUS S.A.S., 2017)

The outstanding numbers clearly recommend this sector as an essential service for people today, not only in means of its obvious utility, but also being known for contributing in Europe to the employment of 12.3 million people (*Fast Facts | ACI EUROPE*, no date), needed to keep the system working properly. For instance, the operation of landing or taking off requires precise work procedures of a group of qualified personnel, both in the airport and the plane, as well as complex systems and networks running in the background.

Although air travel can be named a relatively new option of transport, this market has already achieved a lot, promising even much more than that. Studies show that until 2036, the traffic flow in Europe will expand 2.6 times than in present. (AIRBUS S.A.S., 2017) The reasons of its enhanced popularity are mainly supported by the title of the fastest form of transport and a good safety record for commercial air transport, as data from the European Aviation Safety Agency shows. (*Air safety statistics in the EU - Statistics Explained*, no date) Analyzing Denmark’s situation, statistics retrieve a total of 342,000 flights in 2014, a number of 23 airports and 1047 planes in 2015.(DANMARKS STATISTIK, 2016)

Most of the airlines have their own webpages where they can easily store all needed data and manage it in any way as well as let the customers purchase the flights. In most cases they are connected together with other features, like for example recommendations for hotels or car rental companies in given destinations. Considering the fact that both from administration and customers side everything can be done remotely via the internet, it is a very good way of providing but also promoting their services.

By the example of one of the mentioned websites, in order to book a flight, the person who wants to do so needs to choose one of the possible origins and destinations, the departure date and returning date (or choose “one way” option) and choose number and type of seats. After confirming and then choosing type of ticket, the next step is giving all the requested personal data in the prepared formular. The last part is choosing method of payment and after completing it, the ticket is booked. At every step there are also other optional (and for pay) things to choose, like possibility to take bigger luggage or earlier check in. If the customer does not choose check in earlier option, they also need to do so about 3 days before the date of their flight, for free by then in order to confirm their reservation and get an actual ticket. (*Official Wizz Air website | Book direct for the cheapest prices*, no date)

One specific Danish airline, Fly High, founded by Tobias Jensen and William Christensen in 2009 is a company headquartered in Vejle, which initially operated domestic flights. Now, the airline wants to expand its flights across Europe, thing that brought the request to the team for a new management system. While operating internal flights, the company’s data was being stored in files. Once the amount of data   
started to increase in size, the operations became more complicated to be handled. Another reason which led to the wish of a change in the management system is the fact that until now, the only way for booking a ticket for a specific flight was calling the company and receiving the ticket afterwards via email.

Due to these facts it is nothing surprising that the company is not very popular outside Denmark, meaning that generally people do not have easy access to its services. If there is no possible way of purchasing the flight in a convenient way via the internet and making a call is necessary, most people would prefer to choose other companies. Nowadays if something is not really modern and does not use the available technological possibilities, it simply does not really achieve the biggest possible success. This thing is natural as everything changes, especially in terms of computer science, which is a new fast-developing branch. But of course there are always possibilities to improve the idea and make it more up to date and convenient.

# Definition of purpose

The project purpose is to create a management system in order to help the airline company manage their data efficiently and provide the clients with a convenient way of booking tickets.

# Problem Statement

The project focuses on the way data can be managed by the user. The system will be available for the members of the airline company and clients interested in booking a flight. The former user will be empowered to manage data, such as adding, searching, updating and deleting, while the latter will be able to search for information regarding flights and make a reservation at wish.

The following questions are to be answered:

* ***How to make sure that the new system will be always up to date?***
* ***What is to be done in order to avoid losing data?***
* ***How to make the system scalable?***
* ***What is to be done regarding cancelled flights?***

# Delimitation

The team agreed upon some certain specifications the project will not cover, which are regarded as limitations and are listed below.

First and foremost, the application which will be used by both users and employees will be written solely in English. Therefore, it will not have multi-language support for the moment. This might represent an obstacle in the airline company’s ambition to expand globally.

Also, the software will not be able to use algorithms to automatically set ticket prices and change them based on certain circumstances. Consequently, this action will have to be performed manually by the airline employees using the application.

Another limitation is represented by the lack of AI (artificial intelligence) inside the system. Even though the system will be able to store and archive passenger information regarding their past flights, it will lack the feature to suggest flights to the user based on their previous trips and overall information collected from their browsing history.

Last but not least, the system will not be able to store any aircraft records (flying hours, inspections done etc.) because of the lack of communication between the database and the airplanes.

# Choice of models and methods

Every company needs to follow technological progress, otherwise they will not be able to evolve. *Fly High* is a great example of an old, good prospering company with obsolete managing system. If they want to stay on the market they need to change.

The primary issue of the Fly High company is that they lack a client/server system which would be easy to access and will guarantee them a way to present and sell the product. It is considered an important factor for every business, as it can increase the number of clients and the demand for offered services.

The objective is to provide Fly High with a preset-day tool to help the company administrate their data and manage their relationship with the clients. The expected outcome is to build the “bridge” between the company and their customers, which would be beneficial for both sides, saving time, money and concerns.

The project will be conducted by a team consisting of 4 people. The team will use Scrum framework in order to divide the work in timeboxed iterations, which is a modern and efficient method, used by software developers. It defines a flexible, holistic product development strategy where the team works as a unit to reach a common goal. In this case there is no leader in the team, every member being equally responsible for the workload and the workflow, being expected to spend approximately 280 hours in order to develop the system. The team must understand the problem and comprehend the field of work of the client first. Next, project group will learn how to use the tools they will need and they will follow the pattern of Scrum framework, developing the system within next 13 weeks.

# Time schedule

The project period has started once with the beginning of the second semester and the deadline is set to the eight of June. The period between these two dates is represented by 120 days, in which every member of the team is expected to spend approximately about 280 hours working on the project.

The unified process will be used in order to complete the project, meaning that more parts of the project will be done concurrently, but with different intensity.

Firstly, the most the part on which the team will focus will be business modeling and requirements, where the main goals will be set so that every team member will know what exactly has to be done. Later, the group will also work on the analysis and design parts, which have as a main purpose to plan a strategy in order to achieve the goals.

In the next step, when every team member is accustomed with the plan, the focus will fall on implementation parts, together with testing.

In the end, there will be the deployment part, which will allow the project group to check if the carried work has been done correctly and if not, a chance will be given to improve the system.

Every step in developing the project may have multiple elements on focus at the same time.

# Risk assessment

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Risks** | **Description** | **Likelihood Scale** | **Severity Scale** | **Preventive & Responsive actions** | **Identifiers** | **Responsible** |
| **Risk 1** | **Not meeting the deadline** | **2** | **4** | **The team will track the previous projects and divide work among teammates** | **Delays, additional work, wrong estimation** | **Team leader, every team member** |
| **Risk 2** | **Unsettled project objectives** | **3** | **3** | **The team will set goals, responsibilities and terms of cooperation** | **Lack of agreement** | **Team leader, every team member** |
| **Risk 3** | **Teammate’s disease** | **2** | **2** | **The team members will take care of their condition** | **Absence during team meeting** | **Every team member** |
| **Risk 4** | **Lack of knowledge** | **3** | **2** | **The team members will study more, as well as helping each other** | **Not being able to finish the tasks** | **Every team member, teacher** |
| **Risk 6** | **Bad leadership/ no leader** | **3** | **1** | **The members will discuss team hierarchy and leadership** | **Issues with making decisions** | **Every team member, team leader** |
| **Risk 7** | **Lack of experience** | **4** | **1** | **The team does not have to be experienced to finish the project, but members can gain experience by exercising** | **The team does not know how to react when unpredictable situations arise** | **Every team member** |
| **Risk 8** | **Lack of communication** | **2** | **2** | **Every team member will be active and will be encouraging others to take part in meetings** | **The members do not know other member’s opinion** | **Every team member** |
| **Risk 9** | **Lack of commitment** | **3** | **2** | **Every team member has to be committed to the project to a high extent** | **The members do not perform expected tasks** | **Every team member** |

Scales: 1-5; 5 – high risk

# Sources of information

*Air safety statistics in the EU - Statistics Explained* (no date). Available at: http://ec.europa.eu/eurostat/statistics-explained/index.php/Air\_safety\_statistics\_in\_the\_EU (Accessed: 6 March 2018).

AIRBUS S.A.S. (2017) *Growing Horizons*. Available at: http://www.airbus.com/content/dam/corporate-topics/publications/backgrounders/Airbus\_Global\_Market\_Forecast\_2017-2036\_Growing\_Horizons\_full\_book.pdf (Accessed: 6 March 2018).

*Fast Facts | ACI EUROPE* (no date). Available at: https://www.aci-europe.org/policy/fast-facts.html (Accessed: 6 March 2018).

*Danmarks Statistik Statistisk Årbog (2016)* Available at: VIA University College, Biblioteket, Campus Horsens.

*Official Wizz Air website | Book direct for the cheapest prices* (no date). Available at: https://wizzair.com/#/ (Accessed: 14 March 2018).

## Appendices

**[Appendix A: Group Contract](Group-Contract.docx)**

**[Appendix B: Group Formation](Group-Formation.docx)**