Analysis

# Problem Identification

Flight scheduling considers the arrival/departure times and block times for a specific flight. However, many other factors also affect a flight’s schedule, such as the specific airport, connecting flights, turnaround time, flight route, other airlines and destination. These flight schedules are created by software months in advance by the airline so that flights can run smoothly and with minimum disruptions.

However, unexpected events can happen, such as bad weather or a health problem holding a plane up. This can mean that the original scheduling done in advance needs to adapt and change. This is done by a human team of schedulers. This takes time and means the airlines must employ people to do this task, costing them money that could be used elsewhere. The airline will also further lose money for staying on the aircraft apron docked into a gate as it has exceeded the time it was allocated. Therefore, airlines want disruptions to be handled has quickly and as efficiently as possible, which can only be done to a limit with a human team.

Instead, a solution to this problem of dealing with unexpected events could be computational. This is because it will be faster to solve, meaning that scheduling changes can be made with minimum disruptions to other airlines. Also, this will reduce the long-term costs for the airlines, as they wont have to pay wages for people to do the scheduling, and also the costs for disruptions when at the airport.

# Stakeholders

The clients for this project will be airline owners and managers in charge of current flight scheduling. The stakeholders should represent the opinions of different airlines, and how they would want a computational solution to deal with different situations.

My stakeholders are Becky, Giacomo and William, who are all graduate airport planners for Atkins. Atkins is a British multinational engineering, design, planning, architectural design, project management and consulting services company. They will be helping me with the areas to include with the flight optimiser, as there are many factors I could include and will help me make choices in that area. The stakeholders I have chosen represent people who would be likely to use this software, as it is unique to a certain group of users.

# Why is it suitable to a computational solution?

The solution is suitable to become computational because of the implemented use of algorithms. The solution will be a software that will simulate an airport’s structure and use an algorithm to schedule the flights for the airport, considering different variables, which the algorithm can solve faster than a human.

# Computational methods that will be used

Needs list

# Success Criteria First Draft

Done before interview and research stages

**UP TO HERE DUE NOVEMBER 15th!!!!! (2 weeks)**

# Interview

Needs to be done when email set up with stakeholders for initial meeting

# Research

See other word document done in summer

# Features of Proposed Solution

Ideas and then explain limitations

# Stakeholder Feedback

After meeting for interviews

# Requirements

Hardware and Software and then those proposed from the stakeholders

# Success Criteria

The criteria and how to evidence that in the project