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**Project Proposal for King Abdul-Aziz Airport Slots Management Utilization**

Bootcamp

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**Introduction**

**Air transport plays a significant role for the Saudi Arabia economy**, the rapid growth of demand for air transport services, along with political, physical and institutional constraints on building new airport capacity, has led to acute airport congestion problems with substantial effects on delays.

Schedule disruptions and delays, especially at busy airports, have a multiplier effect by airport network. On top of operational bottlenecks and passenger dissatisfaction, congestion and delays have a major economic and environmental impact spread over the entire air transport system.

**Data science Questions Problem & Objectives**

**Most of the Busiest airports worldwide experience** serious congestion and delay problems which call for some immediate capacity and demand management action. A slot scheduling approach brings promises to cope better with congestion problems in the short to medium run and in a more sustainable way based on existing resources. This paper aims to provide a critical review of current research in declared capacity modelling and strategic slot scheduling. Furthermore, it goes beyond the critical review of current research developments by identifying future research issues and gaps and developing concrete directions towards modelling and Figure advanced single airport and network-based slot scheduling problems.

**Our Data Science Question are divided and targeting two perspectives:**

1. Are King Abdul-Aziz Airport Slot Management operating and utilized with high effectiveness & efficiency?
2. How much losing revenue if not Airports Slot Management works well?

**Our Objectives to figurehead:**

* To Increase Air Traffic Movement.
* To Targeting Opportunities for Tourisms to Visit KSA.
* To Compute advantages by gaining more Market Shared.
* To Increase Saudi Airports Revenue.

**Data Discerptions**

Our Data aiming 10,000 data points and 14 features so that can be allowing us to build a robust model with interesting feature engineering and selection challenges.

|  |  |
| --- | --- |
| features | Discerptions |
| ID | Unique Identifier |
| Airport\_Code | The IATA Airport Code |
| Airlines\_Code | The IATA Airlines Code |
| A\D | The flights Directions (Arrivals & Departures) |
| Flight\_CAT | The flights Category |
| Schedule\_Date | The flights Date Scheduled |
| Schedule\_Time | The flights Time Scheduled |
| Accual\_Date | The flights Date Actual |
| Accual\_Time | The flights Time Actual |
| Origin | The Flights comes from |
| Distention | The Flights travel to |
| Flights\_Rev | The Flights Revenue |
| Slot\_CAP | The Airport Slot Capacity |
| Slot\_Price | The Airport Slot Standard Price |

**Algorithms**

In Our Proposal we going to Build two data science model in python

* Model 1: Figurehead the Gap between current usage slot capacity and Available Slots.
* Model 2: Estimating Revenue Increase.

**Martial & Tools**

We plan to use python packages for data science models

* pandas and numpy library for visualization and calculation.
* Oracle Database for data Cleaning.

**MVP**

We need to answer the two main Data Science questions by providing the Available Slot capacity and the value of return.

Below the slot management process:

