**FAST-National University of Computer & Emerging Sciences, Peshawar**

**Project Proposal**

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**Project Title**

**Airport Management System**

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**Introduction:**

**Background:** In an airport there are multiple critical aspects that are to be taken into consideration for running the airport system properly. Aspects such as : flight timings and location or the passenger details or might it be the airport staff and crew assignments or the airlines information everything is very important but at the same time it is extremely difficult to do it manually, which can be be time consuming and prone to human errors, So by this Project we will make a management system for the airport the handle its system to run efficiently.

**Motivation:** Making an efficient and user-friendly Program to operate a management system for the airport. It is to avoid time consumption, human errors, and manual difficulty.

**Overview:** The Airport management system is a Program that is designed to manage the various operations and data of an airport regarding its flights, airlines, employees, passengers, tickets,baggage, etc. to overcome the traditional manual record-keeping. The program will make the operations of an airport system be handled with Object Oriented Programming principles that will help make the management system efficient and fast.

The system will enable the management of:

* Airport details
* Flight scheduling system
* Airline information
* Staff and crew assignment
* Passenger details and ticket booking system
* Baggage handling and security checks

The Program will cover the following key OOP concepts:

* Classes and Objects.
* Encapsulations , ensuring security of the system by using public , private and protected tags.
* Constructors, Copy constructors, Destructors.
* Inline and Out Of Line Functions
* Inheritance
* Polymorphism , overriding.

**Significance:** This Airport Management System plays a crucial role in improving airport operations by:

* Reducing Human Errors –Efficient data handling by the Program will reduce chances of errors.
* Enhancing Efficiency – Fast and accurate processing of passenger and flight details.
* Improving Security – Encapsulation ensures that sensitive airport data remains protected.
* Providing Scalability – OOP principles make the system modular, allowing future upgrades.
* Saving Time and Resources – Automation reduces the need for excessive manual labor and paperwork.

**Problem Statement:**

How can an airport efficiently manage its complex operations such as passenger details, employee assignments, flight records and scheduling, airline information, baggage handling without relying on time-consuming and error-prone manual processes which lead to security risks?

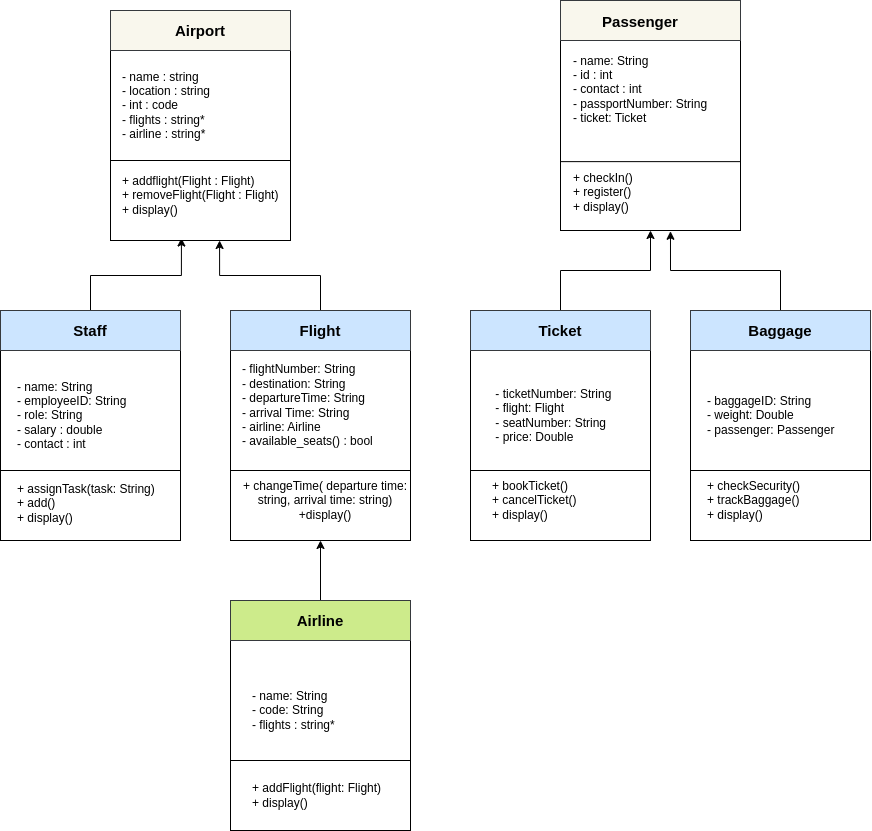
Traditional record-keeping systems make it difficult to manage operations efficiently and on time to avoid the various drawbacks of manual systems we propose this project of “Airport Management System ” which is a digital solution to the problems highlighted, aiming for a user-friendly, menu-driven program that leverages Object Oriented Programming (OOP) principles to streamline data storage, retrieval, modification and management.Our system ensures secure access, simplifies administrative tasks and enhances operational efficiency through structured class based design.

**Objectives:**

The **Airport Management System** aims to achieve the following objectives:

1. **To develop an efficient and automated system** for managing airport operations, reducing reliance on manual processes.
2. **To implement Object-Oriented Programming (OOP) principles** such as encapsulation, inheritance, and polymorphism to create a structured and maintainable system.
3. **To design a flight scheduling module** that enables accurate tracking of arrivals, departures, and delays.
4. **To create a passenger and ticket management system** that stores and retrieves passenger details efficiently.
5. **To manage airline and staff information** by maintaining structured records of airline details, crew assignments, and employee schedules.
6. **To incorporate a baggage handling and security check system** that ensures smooth and secure baggage processing.
7. **To provide a user-friendly interface** that simplifies system operations for airport staff and administrators.
8. **To enhance data security and integrity** by implementing access control mechanisms and data validation techniques.
9. **To minimize human errors and time consumption** by automating routine tasks such as data entry, scheduling, and record-keeping.

**Class Diagram:**

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