**بِسْمِ اللهِ الرَّحْمٰنِ الرَّحِيْمِ**



**OOP PROJECT**

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## Draw.io

Classes: PLANE, AIRPORT, BOOKING, ADMIN, USER, COUNTRY, ABSTARCTCLASS

https://drive.google.com/file/d/1JW9QAVzo\_YujP5TnOm5PK-Rq4KDtEjwo/view?usp=sharing

## OOP Concepts

Inheritance:

ADMIN and USER: Both have common properties like name, username, password and both have common functions like adding another Admin (Admin can make someone admin) and adding another User (For Under 18). So these have been made together in in the class ABSTRACTCLASS which both ADMIN and USER classes inherit.

Aggregation

PLANE AND AIRPORT:

Composition

COUNTRY and AIRPORT:

AIRPORT class needs COUNTRY class for its existence and due to its specific location, it needs COUNTRY as each airport is located in a country and city.

BOOKING and USER:

BOOKING can’t exist without a USER so therefore they have aggregation between them.

Association

BOOKING and AIRPORT:

There is an association between a BOOKING and AIRPORT. A booking of flight is associated with an airport because the flight takes off and lands at the airport. Similarly, an airport is associated with a booking of flight because it handles the flight and provides services to the passengers.

ADMIN and AIRPORT:

An admin may have access to an airport, but an airport does not "own" or "compose" an admin.

ADMIN therefore in this project manages flights and inquiries which is an example of association because they can exist independently.

Abstract Class:

ABSTRACTCLASS has been made which has common properties and functions which are inherited by ADMIN and USER.

Polymorphism

Various functions like print and input and are used by almost all classes and have virtual keywords which indicate polymorphism.

Const data member

In each class there is const data member which is the array size for char pointers when they are dynamically allocated while object constructions.

Static int member

Booked seats in flight has a static variable to keep a count of filled and remaining seats.

Operator overloading

The << operator has been overloaded to display cost and = has been overloaded to assign one object to another.

Virtual functions

Virtual functions like print and input exist.

Scope resolution operator

Definitions are in header while using scope resolution operator (::) definitions are in cpp.



