**AIRPORT**

Clock

Schedule

Flight

Locations

*Weather affecting delays?*

**CheckIn**

CheckIn desk opens 3 hour before departure time.

CheckIn desk closes 45 minutes before departure time.

**Gate**

Gate closes 20 minutes before departure.

Passengers can get through Customs and Security until 25 minutes before departure.

If, at this point, not all people that got through security have left the gate yet, Airport makes an announcement to tell people to go to the gate *now*.

The Airport holds a Clock that has the in-game time, and a speed to change simulation speed.

Each day, the Schedule generates Flights for that entire day between 06:00 and 23:00.

The Check-in desks and gates are also assigned at this time, and will not change.

The Schedule generates Flights depending on time of day. With busy and quiet periods.

Schedule density also depends on time of year (holidays, seasons).

Each Flight has a flightNumber.

A passenger wants to board a specific flightNumber.

Depending on the flightNumber, the passenger receives a color. Check-in desks and gates also have those colors.

A passenger gets a reference to the FlightInfo class of his flight, as follows:

**FlightInfo class:**

Int hour;

Int minute;

Int delay; // minutes

Int gate;

**DEPARTURE PROCEDURES**

Arrival At Airport:

* Passenger enters airport (spawned at entrance). Passenger knows the flightNumber he is on.
* Passenger tells Aiport that he entered, and which flightNumber he is on.
* Airport tells passenger which color he has.
* Airport gives passenger reference to FlightInfo, which contains flightTime and gate.
* Airport tells passenger which check-in desk is for his flightNumber.

Checking In:

* Airport has many check-in desks.
* Each check-in desk can deal with a single Departure flightNumber at once, going by the order of the Schedule.
* A check-in desk knows which flightNumber it is checking in.
* A passenger arrives at the (hopefully correct) check-in desk.
* The passenger tells Airport he wants to check in.
* The Airport keeps a small list of people who want to check in, and moves through it sequentially.
* When this passenger is at the front of this list, the Airport will process the passenger.
* Check-in makes sure that the passenger is at the correct desk (checks flightNumber).
* If not, Check-in tell passenger to move to correct desk, and removes passenger from the list.
* Check-in increases counters for that flight (numCheckedIn, numLuggageCheckedIn).
* Check-in puts luggage on conveyor belt.
* Check-in tells passenger he is successfully checked in. So the passenger can walk away.
* Check-in continues with the next passenger in the list.

Passing Security Checks:

* Passenger arrives at security.
* Passenger tells Airport he wants to go through security.
* Security may still be busy with another passenger.
* The Airport tells the passenger he can move through the gate.
* The passenger just moves forward a bit.
* If the detector doesn't go off, Airport tells the passenger he is through security.
* If the detector does go off, Airport tells passenger to move back a bit and try again.
* For simplicity (for now), the detector cannot go off a second time.
* Airport increases counter for flight (numThroughSecurity).
* Airport removes him from the list.

Passing Customs:

* Passenger arrives at customs.
* Passenger tells Airport he wants to go through customs, and gets registered in a list.
* When it is his turn, Airport tells passengers to put his stuff on the conveyor belt.
* Stuff moves to end of conveyor belt.
* For now, no baggage is suspicious. So nothing needs to be opened up.
* Airport tells passenger it's okay, and that he can pick up his stuff again.
* Airport increases counter for flight (numThroughCustoms), and removes passenger from list.

Leaving Gate:

* Passenger arrives at gate.
* If boarding has started, the gate is open, otherwise it is closed.
* Passenger tells Airport he wants to leave the gate.
* Airport checks whether the passenger is at the correct gate and whether the gate is open.
* Airport tells passenger he can move through the gate.
* Airport increases counter for flight (numLeftGate).

Plane Waiting:

* Not implemented in first product.
* Main reason for a plane to wait is to allow people from an arriving flight to catch this one, since it is their connecting flight.

Plane Leaving:

* The Airport decides that the Plane is done boarding.
* The Airport closes the gate.
* The Airport removes the flight from the Schedule.
* If any passenger wanted to go on this flight, but did not get on, ehm... ???

**ARRIVAL PROCEDURE**

Plane Arrival:

* Plane "arrives" at airport.
* Airport opens gate.
* Arrival Flight knows how many people are on the flight.
* Passengers are spawned one at a time at the gate.
* When a passenger is spawned, it has a (semi-random) number of pieces of luggage he needs to pick up later.

Passport Control:

* Passenger arrives at passport control.
* Passenger tells Airport he wants to go through passport control.
* Airport puts passenger on list, and will process passenger when it is at front of the list.
* Airport takes a few seconds to check the passport.
* For now, passports are always correct.
* Airport tells passenger it's okay, and to move on.
* Airport removes passenger from list.

Luggage pickup:

* If the passenger needs to pick up luggage, he arrives at the luggage claim area.
* The passenger tells the Airport he is waiting for his luggage.
* Airport tells the passenger which piece(s) of luggage are his, by using an in ID. Each piece of luggage has a unique int ID.
* Airport spawn luggage, and assigns IDs semi-randomly, making sure a passenger doesn't have to wait \*too\* long.
* The luggage carousel holds a list of all luggage currently active.
* The passenger asks the luggage carousel every now and then if his luggage is there yet.
* If a piece of luggage is there, the passenger tells the luggage carousel that he picks it up.
* Luggage carousel unregisters the luggage.
* Passenger registers that he has the luggage.
* When the passenger has all his luggage, he moves away to the airport exit and leaves.

**TRANSFER PROCEDURE**

TODO

**First product:**

People enter airport; there is no outside.

People move through the airport to the gate.

People exit airport through gates and disappear; there is no outside.