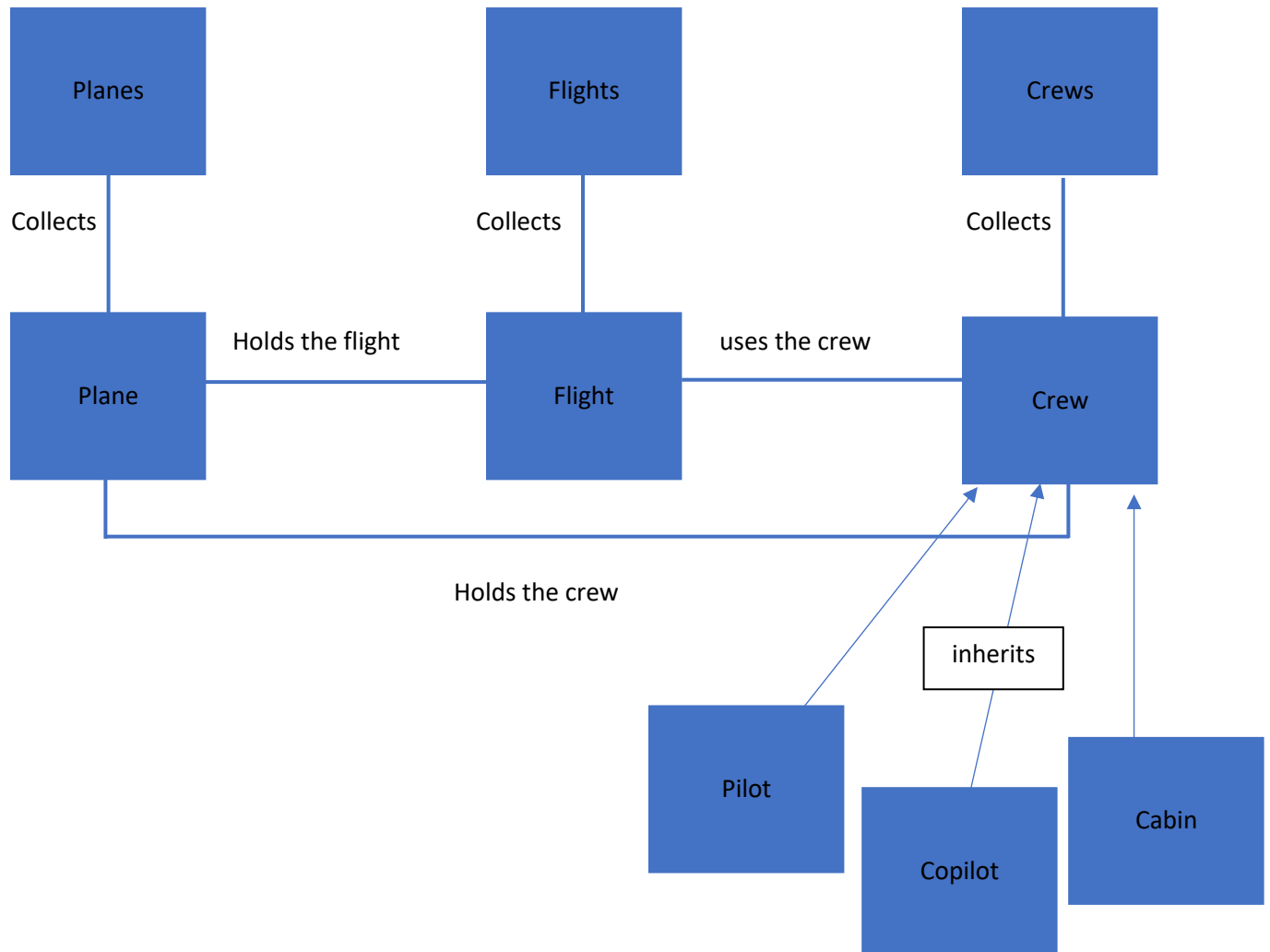


Austin Reeves

1040.001

Homework 5



Plane

Make	(string)
Model	(string)
Tail number	(string; alphanumeric)
Num. seats	(integer)
Range	(decimal number)
Min num of crew	(integer)

Set/Get make	
Set/Get model	
Set/Get tail num	
Set/Get num seats	
Set/Get range	
Set/Get min num of crew	

Crew Member

Name	(string)
ID num	(integer)
Type	(string)
Status	(string)

Set/Get Name	
Set/Get Id num	
Set/Get Type	
Set/Get Status	
Print Info	(virtual)
Save info	(virtual)

Flight

Plane id/tail num	(string; alphanumeric)
Num Pilots	(integer; flights over 8 hours require 2 pilots)
Num co pilots	(integer; flights over 8 hours require 2 co-pilots)
Num cabin crew	(integer; flights over 8 hours require min * 2)
Pilot id	(dynamic list)
Copilot id	(dynamic list)
Crew id	(dynamic list)
Start date/time	(long int)
End date/ time	(long int)
Starting airport code	(string; 3 letters)
Ending airport code	(string; 3 letters)
Num passengers	(integer)
Status	(string; ex: active, complete, cancelled)
Flight ID	(integer)

Set/Get Plane id/tail num
Set/Get Num Pilots
Set/Get num co-pilots
Set/Get Num cabin crew
Set/Get Pilot id
Set/Get co-pilot id
Set/Get Crew id
Set/Get Start date/time
Set/Get End date/ time
Set/Get Starting airport code
Set/Get Ending airport code
Set/Get Num passengers
Set/Get Status

Pilot

Rating	(string)
Flight hours	(decimal)
Set/Get rating	
Set/Get Flight hours	
Print Info	(virtual)
Save info	(virtual)

CoPilot

Rating	(string)
Flight hours	(decimal)
Set/Get rating	
Set/Get Flight hours	
Print Info	(virtual)
Save info	(virtual)

Cabin

position	(string)
Set/Get position	
Print Info	(virtual)
Save info	(virtual)

Planes Collection

Plane Array (for list of all plane information)
Counter (integer)

Add Plane
Edit Plane
Delete Plane
Search for a Plane
Print all Planes
Print one Plane
Set/Get Counter
Load
Save
Return Tail number
Return Num. Seats
Return Minimum Crew

Crew Members Collection

Crew Array (for list of all crew information)
Counter

Add Crew Member
Edit Crew Member
Delete Crew Member
Search for a Crew Member
Print all Crew Members
Print one Crew Member
Set/Get Counter
Load
Save
Return Name
Return Type
Return ID

Flights Collection

Flight Array (for list of all flight information)
Counter

Add Flight
Edit Flight
Delete Flight
Search for a Flight
Print all Flights
Print one Flight
Set/Get Counter
Load
Save
Print Plane Schedule
Print Crew Mem. Schedule
Print Status
Delete Status
Update Status

Plane Functions:

Add Plane

- Prompt for plane information
- Assign information
- Increase counter

Delete Plane

- Removes a specified plane from collection
- Requires a search
- Keeps all other data in line

Search for a Plane

- Search for a plane by tail num
- Take in a tail num, compare to each tail num in array of planes
- Return info for matched plane

Print all Plane information

- Prints all information for all planes

Print one Plane's info

- Prints all information for a specific plane
- Requires search by tail num

Return Tail number

- calls search function
- gets the tail number at the position in the vector
- returns the tail number

Return Num. Seats

- takes in a string parameter for the tail number
- searches for the position in the vector of the plane with that tail number
- gets the number of seats that plane can hold
- returns the number of seats

Return Minimum Crew

- takes in a string parameter for the tail number
- searches for the position in the vector of the plane with that tail number
- gets the minimum number of crew required for that plane
- returns the minimum number of crew required

Load

- uses file streams to read data in from a file

Save

- Uses file streams to print data to a file

Crew Member Functions

Add Crew Member

- Prompt for crew information
- Assign id
- Sort out by type of crew
- Increment counter

Delete Crew Member

- Removes a specified crew member from collection
- Keeps all other data in line

Search for a Crew Member

- Search for a crew member by name
- Take in a name, compare to each name in array of crew
- Return info for matched crew member

Print all Crew Members

- Prints all information for all crew members
- Calls virtual function

Print one Crew Member

- Prints all information for a specific member
- Requires search by name

Load

- uses file streams to read data in from a file

Save

- Uses file streams to print data to a file
- Calls virtual save info function

Return Name

- calls search function
- gets the name of the person at the returned position
- returns name

Return Type

- takes in name parameter
- searches for crew member with that name
- gets the type of the crew member at the position
- returns type

Return ID

takes in name parameter
searches for crew member with that name
gets the id of the crew member at the position
returns id

Flight Functions:

Add Flight

Get start/end time
Get num of passengers
Get start/end airport codes
Add a plane
 Must check if available in times
 Check if it has enough seats
Add crew
 Must check if available in times
 Make sure they are right type
 Check if enough of a certain type are available
 Check if that crew member is marked as available

Delete Flight

Check that flight is not active
Removes a specified flight from collection
Keeps all other data in line

Search for a Flight

Search for a flight by id
Return info for that flight id

Print all Flight information

Prints all information for all flights

Print one Flight's info

Prints all information for a specific flight
Requires search by id

Print Plane Schedules

Prints list of a specified planes schedule

Print Crew Members Schedules

Prints a list of the crew members scheduled times

Print Flights by status

Prints all flights, but this time sorted by status

Bubble sort

Delete flights by status (cancelled or complete)

Option based (user picks which to delete, cancelled completed or both)

Searches for all flights by id

Checks if each flight is completed or cancelled

If so, calls delete function

Update status' (done automatically throughout program)

Check all flights and compare to time (using search function)

Change status based on flight times

Load

uses file streams to read data in from a file

Save

Uses file streams to print data to a file

Print Plane Schedule

prompt for plane tail num

print all flights for that plane

Print Crew Mem. Schedule

prompt for name of crew member

print all flights for that crew member

Print Status

use menu to select which status to search for

down each menu branch, print all flights with that status

Delete Status

use menu to select which status to search for; CANNOT be active

down each menu branch, delete all flights with that status

Update Status

checks time to see if flights have been completed yet

updates status of all flights

deletes flights that are

called periodically throughout the program