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Course : BBM203
Experiment : Assignment 2
Subject : Experiments with stacks and queues
Data Due : 04.12.2019 23.59
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Main Program : sellticket.c

1. Software Using Documentation

1.1. Software Usage

For run this program,
type: "make" and
"./sellticket [path_of_input_file] [path_of_output_file]".

1.2 Error Messages

If there is an error in this program, will be shown like "error".

1.3 Input Commands

addseat [name_of_flight] [class] [number_of_seats]
enqueue [name_of_flight] [class] [passenger_name] [priority]
sell [name_of_flight]
close [name_of_flight]
report [name_of_flight]
Info [passenger_name]

2. Software Design Notes

2.1. Description of the program

2.1.1. Problem

Gaining knowledge on C language, file IO, stacks, queues and dynamic memory allocation.

2.1.2.Solution

1- I created two structs that "flights" and "ticketSoldPassengers".
2- I stored seats and ticket queues in "flights" struct; stored sold tickets in "ticketSoldPassengers" struct.
3- I used char(string) for stacks and linked lists for queues.*
4- I free'd allocated data.

2.2. Main Data Structures

```
typedef struct{
  char* passengerName;
  int priority;
  int wantedClass;
  struct passenger* next;
} passenger;
typedef struct {
  char* flightName;
  char** seats;
  passenger* queues;
  int closed;
  int soldBusinessTicket;
  int soldEconomyTicket;
  int soldStandardTicket;
  int personsInBusinessQueue;
  int personsInEconomyQueue;
  int personsInStandardQueue;
} flight;
```

2.3. Algorithm

1. Read input file.
   1.1. Create new flight and add seats to this flight.
   1.2. Enqueue the passengers. Priority is important.
   1.3. Dequeue passengers, sell tickets and pop seats.
   1.4. Store ticket info.
   1.5. Create a report of flight and print it to screen.
   1.6. Access tickets data and find passenger.
2. Close input file.
3. Free data and structures.

3. Functions Implemented

addseat
enqueue
sell
close
report
info