CS162 Final Project – Portland International Airport Interface Michael Boyd

Problem statement – Write a program that connects to the PIA SQL server and runs queries through an interface with data being outputted to the user.

IPO Chart

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| --- | --- | --- |
| Input | Processing | Output |
| Login(username/password) | Username/password credentials are matched with existing data to gain access. | Access to the program |
| Passenger Lookup (name) | Queries the DB to find all related information on a passenger. | Passenger information |
| Plane Lookup | Queries the DB to find all related information on a plane. | Plane information |
| Flight Lookup | Queries the DB to find all related information on a specific flight. | Flight information |
| Cancellations | Queries the DB for a list of all active flight cancellations | List of active cancellations |
| Ticket Purchase | A location lookup that displays a list of flights with ticket prices. Adds a Create Statement with all applicable information passed to the DB. (planes at capacity are made unavailable) | Confirmation of success or failure |
| Employee Lookup | Queries for the first and/or last name of an employee (only works in admin mode) | Employee information |
| Employee Roster | Displays the entire list of employees (only works in admin mode) | Superficial list of all employees |

Design Document

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| --- | --- |
| Class | Purpose |
| PIAInterface | Class with the main driver of the program |
| SQLQueries | Class that handles all queries to and from the SQL DB |
| Authentication | Class that handles authentication |
| System | Print |

Pseudocode –

1. PIA Interface
   1. Declare and define GUI components
   2. Constructor
      1. Load the GUI from a method
      2. Set the default close operation for the frame to exit upon close
   3. MAIN
      1. Declare a new instance of PIAInterface
   4. Action events
      1. Run the appropriate method from the SQLQueries class for all buttons
      2. Handle validation for text areas related to lookups
      3. Handle actions for all menu items (print, logout, about, quit, etc.)
   5. GUI normal user method
      1. Assemble all GUI components into the frame
      2. Center the frame
      3. Call the menu method
      4. Set the frame to visible
   6. GUI Admin method
      1. Assemble all GUI components into the frame
      2. Center the frame
      3. Call the menu method
      4. Set the frame to visible
   7. Menu method
      1. Declare and assemble menu components into a menu bar
      2. Add the menu bar to the frame
2. SQL Queries
   1. Data members
   2. Constructor
   3. Connect to the PIA SQL database
   4. Lookup methods: passengerLookup, planeLookup, flightLookup, EmployeeLookup
   5. Method for cancellations
   6. Method for employee roster
   7. Method for ticket purchase
3. Authentication
   1. Data members
   2. Constructors
   3. Method for authenticating user input for username/password
   4. UIMode method to determine whether to start as Admin or normal user