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| Abstract |  |
| **travel.Travel**  SingleTravel, Itinerary | |
| Final arrival date and time  Starting departure date and time  Origin  Destination  Total cost  Total travel time  Format times into string representations | TimeFormat |

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| Abstract | Travel, Identifiable, Updatable |
| **travel.SingleTravel**  Flight, Coach, Ferry, Railroad | |
| Unique ID (number)  Capacity  Provider (airline) |  |

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|  | SingleTravel |
| **travel.Flight** | |
| Create displayable representation |  |
|  | IdentifiableMap |
| **database.TravelDatabase** | |
| Get travel by ID Search travels by time, origin, destination  Add travel information  Update travel information | SingleTravel |

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|  | SingleTravel |
| **travel.Ferry** | |
| Create displayable representation |  |

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|  | SingleTravel |
| **travel.Railroad** | |
| Create displayable representation |  |
|  | SingleTravel |
| **travel.Coach** | |
| Create displayable representation |  |

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|  |  |
| **database.MainDatabase** | |
| Map all TravelType to TravelDatabase  Search all travels by time, origin, destination  Search itineraries by time, origin, destination  Search users by email or name  Get travel information by ID or origin  Get user information by ID Order search results (by time or cost) | UserDatabase  TravelDatabase  TravelType UserType  Constants  Itinerary |

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|  | Travel |
| **travel.Itinerary** | |
| Sequence of trips  Add a trip to the sequence  Calculate total cost  Calculate travel time  Copy to another Itinerary  Validate itinerary path | SingleTravel |
| Abstract | Identifiable |
| **users.User**  RegisteredUser, GuestUser | |
| Unique Identifier  Privileges (Accessible information)  Name | UserType |

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|  | User |
| **users.GuestUser** | |
| Identifier (Guest)  Privileges (Lowest level) | UserType |

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| Abstract | User, Updatable |
| **users.RegisteredUser**  Client, Administrator | |
| Password (Encrypted)  First names, last name  Address  Credit card number, expiry date  Book Itinerary  Remove booked Itinerary  List booked Itineraries | Itinerary  TimeFormat |

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|  | RegisteredUser |
| **users.Client** | |
| Privileges (client) | UserType |

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|  | RegisteredUser |
| **users.Administrator** | |
| Privileges (admin) | UserType |

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|  | RegisteredUser |
| **users.Moderator** | |
| Privileges (moderator) | UserType |

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|  | IdentifiableMap |
| **database.UserDatabase** | |
| Get user by Email  Register a new user  Search users by email or name | RegisteredUser  SaveOperations |

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| Enum | LineParse |
| **users.UserType** | |
| List privilege constants for each user subclass  Create user subclass by privilege | Client  Administrator  Moderator  Privileges |

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| Enum | LineParse |
| **travel.TravelType** | |
| List all travel classes  Create Travel subclasses by type | Flight |

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| **project.UserControl** | |
| Load data on start  Log in with Email and Password  Register a new User  Save data on close Allow access to database, by privilege Store user preferences | User  RegisteredUser  UserDatabase  MainDatabase  SaveOperations  InputOperations  DatabaseOperations  Privileges  UserType  SaveService |

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| Enum |  |
| **travel.TravelComparator** | |
| Order Travel by multiple fields  Order in descending or ascending order | Travel |

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| **io.SaveOperations** | |
| Save all data in main database to storage  Load storage data to main database  Save storage data to file or Android database  Encrypt and decrypt save data  Validate loaded data | MainDatabase  Itinerary  DatabaseOperations |
|  |  |
| **io.InputOperations** | |
| Get travel information from file (input)  Get client information from file (input) Encrypt passwords  Generate a new random password | MainDatabase  RegisteredUser  SingleTravel  TravelType  UserType |

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| Enum |  |
| **util.TimeFormat** | |
| List possible date and time formats  Format strings to dates  Get string representations from dates |  |

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| **util.Privileges** | |
| List privilege constants for accessing databases |  |

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| **util.Constants** | |
| List miscellaneous constants |  |

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| Interface |  |
| **interfaces.LineParse**  TravelType, UserType | |
| Allows parsing of objects from a single line |  |

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| Interface |  |
| **interfaces.Identifiable**  User,SingleTravel | |
| Uses a unique key identifier  Enum type for the class |  |

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| Abstract |  |
| **database.UniqueMap**  TravelDatabase, UserDatabase | |
| Uses a unique key identifier to map Identifiable  Updates objects if they are already registered | Identifiable  Updatable |

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| **io.DatabaseOperations** | |
| Save all data to Android database and file  Load data from Android database and file |  |

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| Interface |  |
| **interfaces.Updatable**  RegisteredUser,SingleTravel | |
| Update fields to another object of the same type |  |

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| Abstract |  |
| **project.BaseActivity**  ForgotActivity, LoginActivity, RegisterActivity,  MainActivity, EditUserActivity, EditTravelActivity,  SearchTravelActivity, SearchItineraryActivity | |
| Default options for all activities  Create settings menu |  |

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| **project.SaveService** | |
| Background task for saving data | UserControl |

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|  | BaseActivity |
| **project.login.ForgotActivity** | |
| Set new generated password to user | InputOperations  UserControl |

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|  | BaseActivity |
| **project.login.LoginActivity** | |
| Login with email and password  Auto login preference  Remember email preference  Go to register activity  Guest login (no credentials)  Go to forgot password activity | RegisteredUser  GuestUser  ForgotActivity  MainActivity  RegisterActivity  UserControl |

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|  | BaseActivity |
| **project.login.RegisterActivity** | |
| Check valid information for registration  Add user information into database  Login with registered info | UserControl  RegisteredUser  UserType  MainActivity  InputOperations |

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| --- | --- |
|  | BaseActivity,  ItineraryInteractionListener,  UserInteractionListener |
| **project.main.MainActivity** | |
| Log out  Edit user info  Upload users and travels to database  Search users and go to edit user  Go to search travels and itineraries | UserControl  SearchUserFragment  MainFragment  UploadFragment  UserInfoFragment  EditUserActivity  SearchItineraryActivity  SearchTravelActivity |

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|  | BaseActivity,  TravelInteractionListener  ItineraryInteractionListener |
| **project.interact.ViewItineraryActivity** | |
| View itinerary and its list of travels  Book or unbook the itinerary | Itinerary  ItineraryFragment  TravelFragment |

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| **project.login.StartActivity** | |
| Makes a start screen that hides and shows itself | SystemUiHider |

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| **project.login.SystemUiHider** | |
| Hides an activity |  |

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| **project.main.MainFragment** | |
| Welcome message for user  Fields for searching travels or itineraries | SearchItineraryActivity  SearchTravelActivity |

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| **project.main.UserInfoFragment** | |
| Editable fields for user info  Editable password  Display list of booked itineraries | RegisteredUser  ItineraryFragment  InputOperations |

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| **project.main.UploadFragment** | |
| Get file path from user  Add info to databases | MainDatabase  UserType  TravelType |

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| **project.main.SearchUserFragment** | |
| Search users by name or email  Edit or add a user | UserViewFragment  MainDatabase  EditUserActivity |

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|  | BaseActivity,  ItineraryInteractionListener |
| **project.interact.EditUserActivity** | |
| Edit a user with user input  Add a user with user input  Book a new itinerary | RegisteredUser  ItineraryFragment  ViewItineraryActivity  UserControl  UserType |

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|  | BaseActivity |
| **project.interact.EditTravelActivity** | |
| Edit a travel with user input  Add a travel with user input | SingleTravel  TravelType  UserControl |

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|  | BaseActivity,  TravelInteractionListener |
| **project.interact.SearchTravelActivity** | |
| Search travels by user input  Sort travels by user input  Go to edit a specific travel | TravelFragment  SingleTravel  EditTravelActivity  TravelComparator |

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|  | BaseActivity,  ItineraryInteractionListener |
| **project.interact.SearchItineraryActivity** | |
| Search itineraries by user input  Sort itineraries by user input  Go to view a specific itinerary | ItineraryFragment  Itinerary  ViewItineraryActivity  TravelComparator |

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| Interface |  |
| **project.view.ItineraryInteractionListener** | |
| Does an action when user selects from list | Itinerary |

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| Interface |  |
| **project.view.TravelInteractionListener** | |
| Does an action when user selects from list | SingleTravel |

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| Interface |  |
| **project.view.UserInteractionListener** | |
| Does an action when user selects from list | RegisteredUser |

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| **project.view.TravelFragment** | |
| Display a list of travels | TravelInteractionListener  TravelViewAdapter  SingleTravel  FragmentTouchListener |

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| **project.view.UserViewFragment** | |
| Display a list of users | UserInteractionListener  UserViewAdapter  RegisteredUser  FragmentTouchListener |

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| **project.view.ItineraryViewAdapter** | |
| Holds a list of itineraries | ItineraryInteractionListener  ItineraryViewHolder  Itinerary |

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| **project.view.TravelViewAdapter** | |
| Holds a list of travels | TravelInteractionListener  TravelViewHolder  SingleTravel |

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| **project.view.UserViewAdapter** | |
| Holds a list of users | UserInteractionListener  UserViewHolder  RegisteredUser |

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| **project.view.ItineraryViewHolder** | |
| Links an itinerary to an entry in a list | Itinerary |

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| **project.view.TravelViewHolder** | |
| Links a travel to an entry in a list | SingleTravel |

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| **project.view.UserViewHolder** | |
| Links a user to an entry in a list | RegisteredUser |

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| **project.view.FragmentTouchListener** | |
| Allows for nested scrolling capability |  |

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| **project.view.ItineraryFragment** | |
| Display a list of itineraries | ItineraryInteractionListener  ItineraryViewAdapter  Itinerary  FragmentTouchListener |