

# Homestay App Specification

## Types

Base classes from requirement's class diagram:

$[Admin, Profile, File, DateRange, Pet, FamilyStructure]$

## The System

The system must hold a schema by itself with the purpose of declaring its elements as well as its invariants:

*HOMESTAYAPP*

$\exists STUDENTS$

$\exists HOSTS$

$managers : \mathbb{P} Admin$

$requests : Profile \rightarrow Profile$   $authorized\_requests : Profile \rightarrow Profile$

$students \subseteq Profile$

$hosts \subseteq Profile$

$students \cap Hosts = \emptyset$

$\text{dom } requests \subset students$

$\text{ran } requests \subset hosts$

$requests \cap authorized\_requests = \emptyset$

$\forall s : students \mid s \in \text{dom } Requests \bullet \#(s \triangleleft Requests) \leq 3$

## Actors

*STUDENTS*

$students : \mathbb{P} Profile$

$pet\_preference : Pet \rightarrow \mathbb{N}$

$family\_structure\_preference : \mathbb{N} \rightarrow FamilyStructure$

$allergies : \mathbb{P} Allergie$

*HOSTS*

$hosts : \mathbb{P} Profile$

$pets : \mathbb{P} Pet$

$family\_structure : FamilyStructure$

## Manual Selection

*MANUAL*  
 $\Xi$ *HOMESTAYAPP*

## Selection Wizard

*WIZARD*  
 $\Xi$ *HOMESTAYAPP*

## General Operations

### Operations for both Student and Host

*CreateNewProfile*  
 $\Delta$ *STUDENTS*  
 $\Delta$ *HOSTS*

*UpdateProfile*  
 $\Delta$ *STUDENTS*  
 $\Delta$ *HOSTS*

*DeleteProfile*  
 $\Delta$ *STUDENTS*  
 $\Delta$ *HOSTS*

*ViewRequests*  
 $\Xi$ *HOMESTAYAPP*

### Operations related to Student

*ManualRequest*  
 $\Delta$ *HOMESTAYAPP*  
 $\Xi$ *MANUAL*

*WizardRequest* \_\_\_\_\_  
 $\Delta$ *HOMESTAYAPP*  
 $\Xi$ *WIZARD*

*SetPetPreference* \_\_\_\_\_  
 $\Delta$ *STUDENTS*

*SetFamilyStructurePreference* \_\_\_\_\_  
 $\Delta$ *STUDENTS*

*SetSmokingPreference* \_\_\_\_\_  
 $\Delta$ *STUDENTS*

*SetAllergies* \_\_\_\_\_  
 $\Delta$ *STUDENTS*

### Operations related to Host

*AcceptRequest* \_\_\_\_\_  
 $\Delta$ *HOMESTAYAPP*

*SetPets* \_\_\_\_\_  
 $\Delta$ *HOSTS*

*SetFamilyStructure* \_\_\_\_\_  
 $\Delta$ *HOSTS*

### Operations related to Admin

*ViewPendingRequests* \_\_\_\_\_  
 $\Xi$ *HOMESTAYAPP*

*AuthorizeRequest* \_\_\_\_\_

$\Delta$ HOMESTAYAPP

*ArrangeMeeting* \_\_\_\_\_

$\Delta$ HOMESTAYAPP