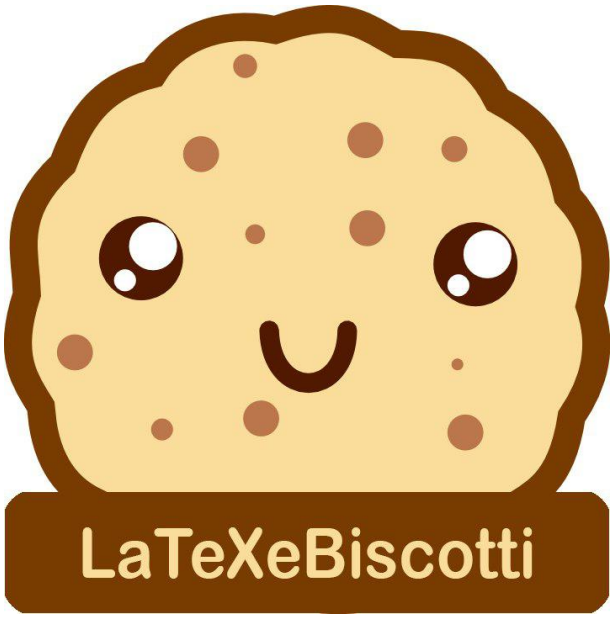

Definzione di Prodotto

Gruppo LaTeXeBiscotti — Progetto UMAP

Informazioni sul documento	
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Descrizione

Questo documento descrive il Definzione di Prodottodel gruppo LaTeXeBiscotti relativo al progetto UMAP.

Diario delle Modifiche

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1 Introduzione

1.1 Scopo del Documento

Questo documento ha lo scopo di identificare e dettagliare gli obiettivi, quantitativi, di qualità da perseguire e le strategie per soddisfarli, del gruppo LaTeXeBiscotti relativamente al progetto UMAP. Sono inoltre presenti le tecniche e le metriche utilizzate per stimare il raggiungimento o meno di tali traguardi, insieme ad un resoconto delle verifiche e dei test effettuati durante l'intero *ciclo di vita del software*$_G$.

1.2 Scopo del Prodotto

Lo scopo del progetto è la realizzazione di un *algoritmo predittivo*$_G$ in ambiente *Internet of Things*$_G$, in grado di analizzare i dati provenienti da "oggetti" inseriti in diversi contesti e fornire delle previsioni su possibili guasti o interazioni con nuovi utenti ed identificare dei pattern di comportamento di questi ultimi, al fine di prevedere le azioni degli stessi rispetto ad altri oggetti o ad altri contesti.

1.3 Glossario

Per evitare tutte le possibili incomprensioni e ambiguità sul linguaggio utilizzato e per massimizzare la comprensione da parte di tutti del documento, della terminologia specifica e di quella di dominio, degli acronimi e di tutte quelle parole che necessitano chiarimento, è stato redatto un Glossario, consultabile nel documento *Glossario v3.0.0*. Tutti i termini, la cui spiegazione è presente in *Glossario v3.0.0*, sono evidenziati, a tale scopo, con una G pedice.

1.4 Riferimenti

1.4.1 Normativi

- ***Norme di Progetto v3.0.0***
- **Capitolato d'appalto C3**: UMAP: un motore per l'analisi predittiva in ambiente *Internet of Things*$_G$: http://www.math.unipd.it/~tullio/IS-1/2015/Progetto/C3.pdf

1.4.2 Informativi

- **Slide dell'insegnamento Ingegneria del Software modulo A**:
  - Processi Software;
  - Qualità di Processo;
  - Verifica e validazione: introduzione;
  - Verifica e validazione: analisi statica;
  - Verifica e validazione: analisi dinamica.

  http://www.math.unipd.it/~tullio/IS-1/2015/
- **Software Engineering Body of Knowledge (SWEBOK) V3.0**:
  - Chapter 10: Software Quality.
- ***Software Engineering* - Ian Sommerville - 9th Edition (2011)**:

  - Part 4: Software Management:
    * Chapter 24: Quality Management;
    * Chapter 26: Process Improvement.

- ***Metrics and Models in Software Quality Engineering* - Stephen H. Kan - Second Edition (2002)**:
  - Chapter 11: Complexity Metrics and Models.

- **Fonti riguardo le metriche**:
  - Metriche per processi:
    * http://smallbusiness.chron.com/schedule-variance-vs-cost-variance-36602.html.
  - Metriche per software:
    * http://www.aivosto.com/project/help/pm-oo-ck.html;
    * http://www.aivosto.com/project/help/pm-oo-mood.html.

2 Standard Di Progetto

2.1 Standard di progettazione architetturale

Gli standard di progettazione architetturale sono definiti nella *Specifica Tecnica v2.0.0*.

2.2 Standard di documentazione del codice

Gli standard per la scrittura della documentazione del codice sono definiti nelle *Norme di Progetto v3.0.0*.

2.3 Standard di denominazione di entità e relazioni

Tutti gli elementi definiti, siano essi $package_G$, classi, metodi o attributi, devono avere denominazioni chiare ed autoesplicative. Nel caso in cui il nome risulti essere lungo e' preferibile anteporre la chiarezza alla lunghezza. Sono ammesse abbreviazioni se:

- immediatamente comprensibili;
- non ambigue;
- sufficientemente contestualizzate;

Le regole tipografiche relative ai nomi delle entità sono definite nelle *Norme di Progetto v3.0.0*.

2.4 Standard di codifica

Gli standard di codifica sono definiti nelle *Norme di Progetto v3.0.0*.

2.5 Strumenti di lavoro

Gli strumenti da adottare e le procedure da eseguire per utilizzarli correttamente durante la realizzazione del prodotto softeware sono definiti nelle *Norme di Progetto v3.0.0*.

2.6 Definizione packages

Questo documento si appoggia e fa stretto riferimento alla *Specifica Tecnica v2.0.0* per la definizione in dettaglio dei packages.

3 Specifica Componenti

3.1 app

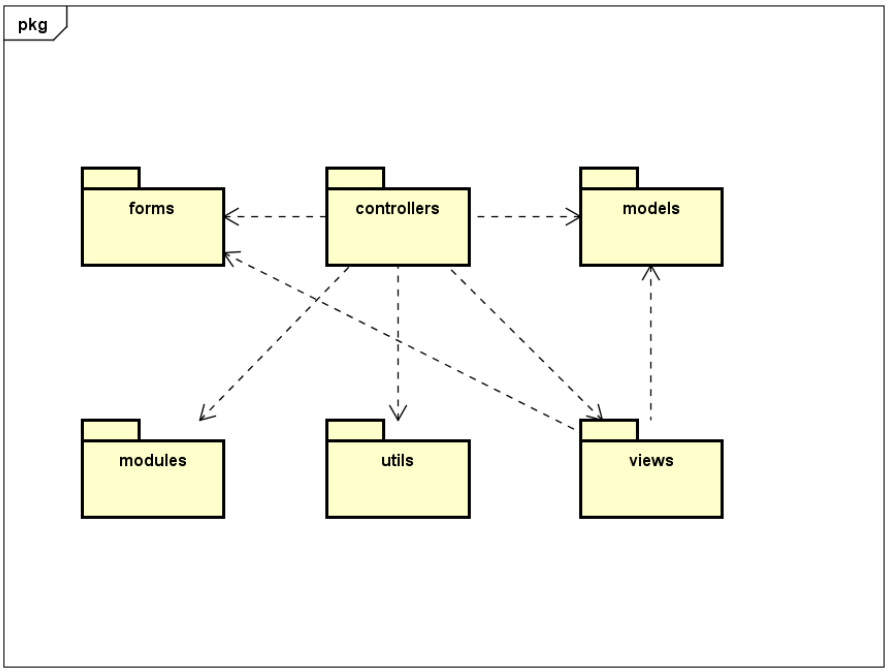

Figura 1: app

3.2 app :: models

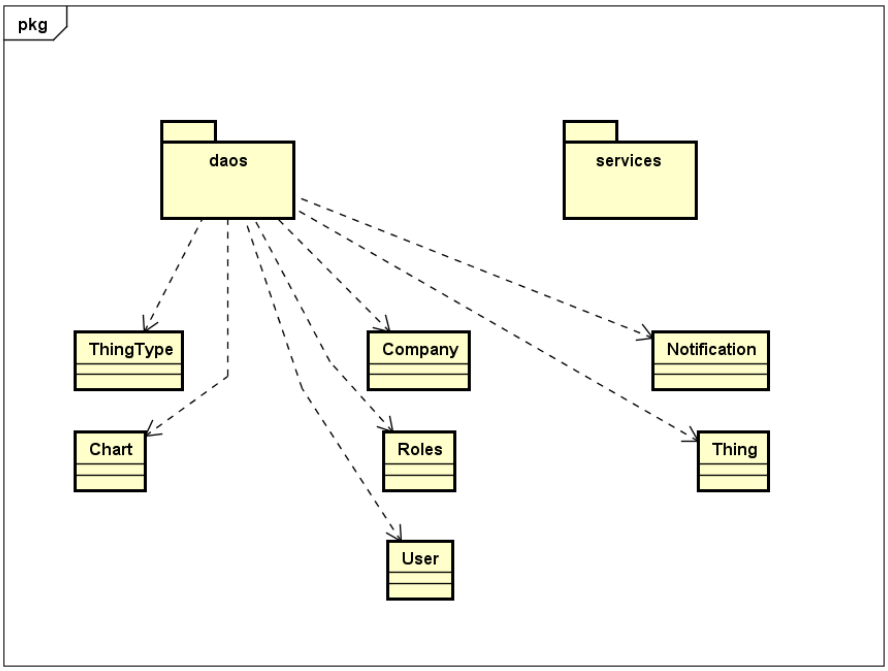

Figura 2: app :: models

3.3 app :: models :: daos

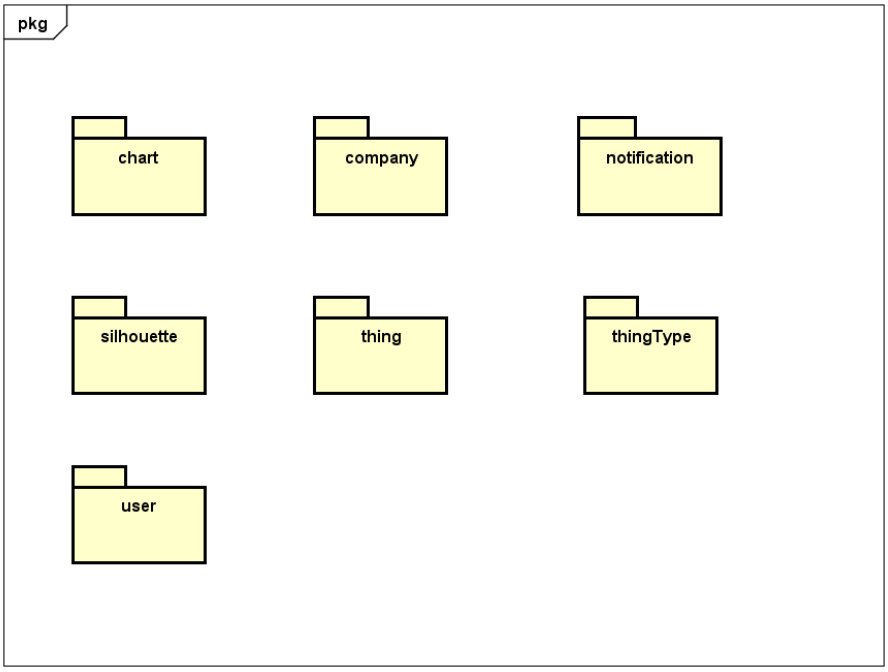

Figura 3: app :: models :: daos

3.4 app :: models :: daos :: chart

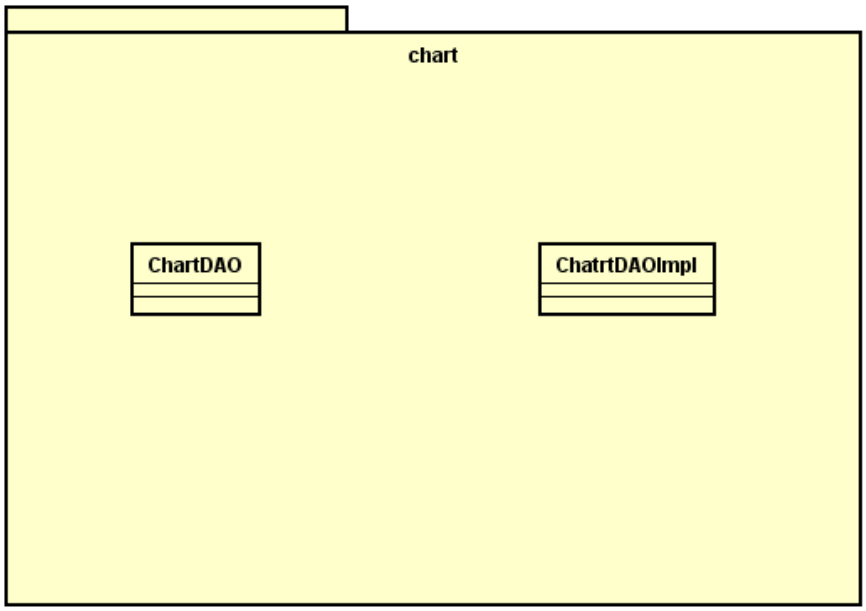

Figura 4: app :: models :: daos :: chart

3.4.1 ChartDAO

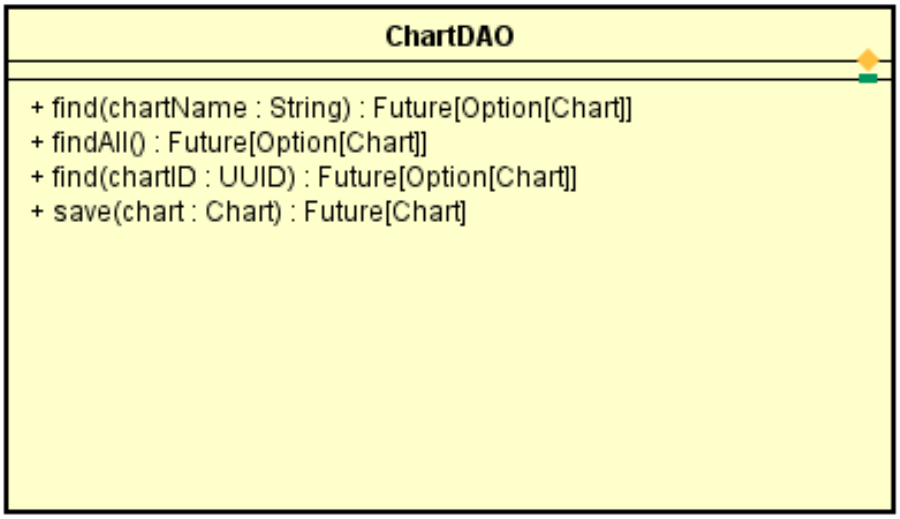

Figura 5: ChartDAO

3.4.1.1 Descrizione

- Classe di comunicazione tra controller e database.

3.4.1.2 Eredita da

- app :: models :: chart.

3.4.1.3 Attributi

3.4.1.4 Metodi

- find: ricerca per chartName;
- findAll: ricerca generale;
- find: ricerca per UUID;
- save: salva un chart.

3.5 app :: models :: daos :: company

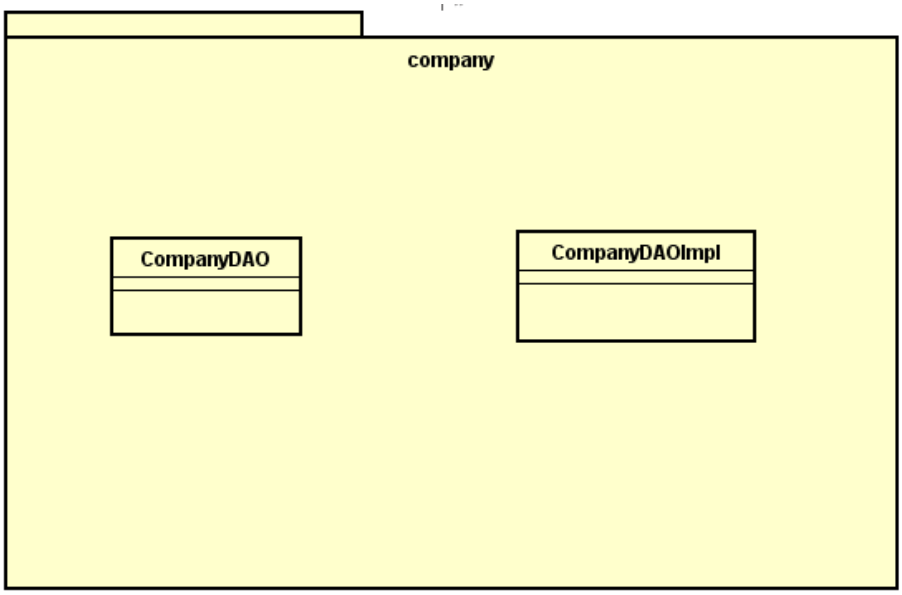

Figura 6: app :: models :: daos :: company

3.5.1 CompanyDAO

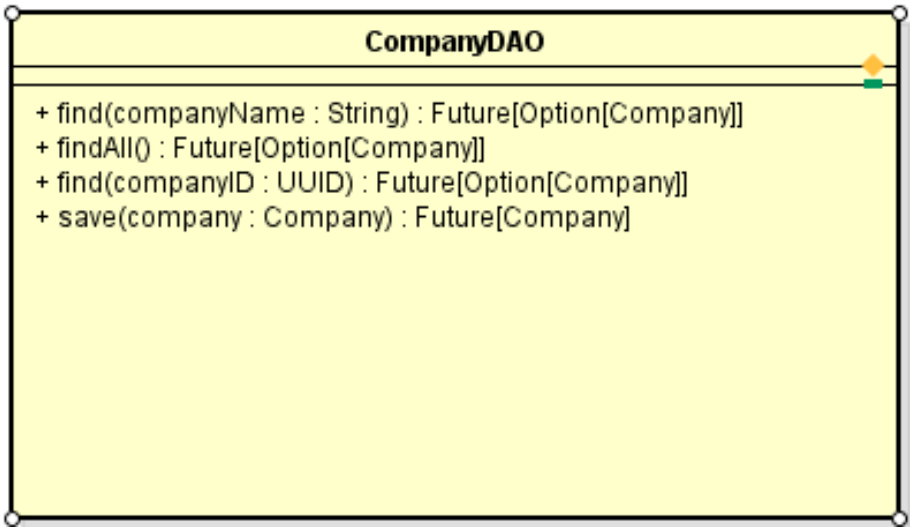

Figura 7: CompanyDAO

3.5.1.1 Descrizione

- Classe di comunicazione tra controller e database.

3.5.1.2 Eredita da

- app :: models :: company.

3.5.1.3 Attributi

3.5.1.4 Metodi

- find: ricerca per companyName;
- findAll: ricerca generale;
- find: ricerca per UUID;
- save: salva una company;
- update:modifica di una company.

3.6 app :: models :: daos :: notification

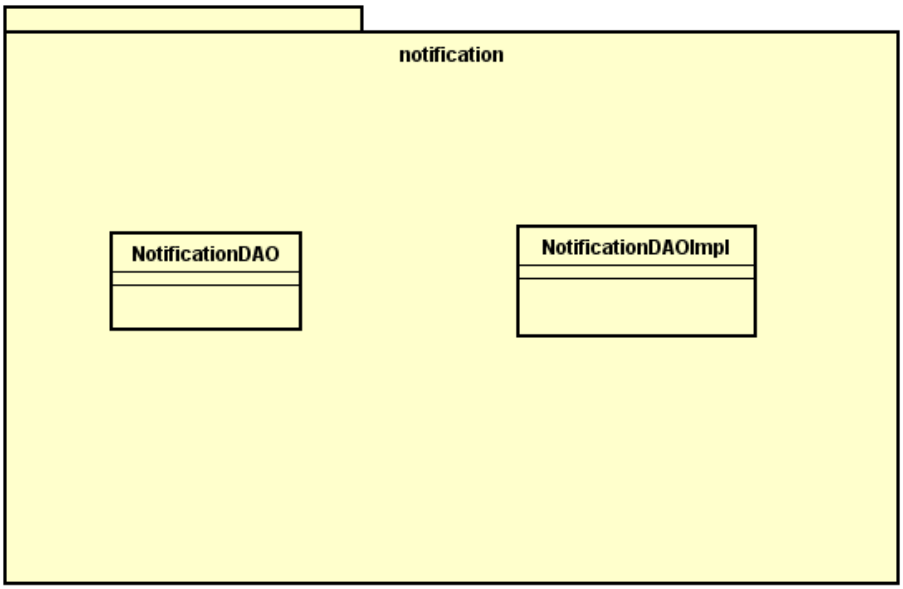

Figura 8: app :: models :: daos :: notification

3.6.1 NotificationDAO

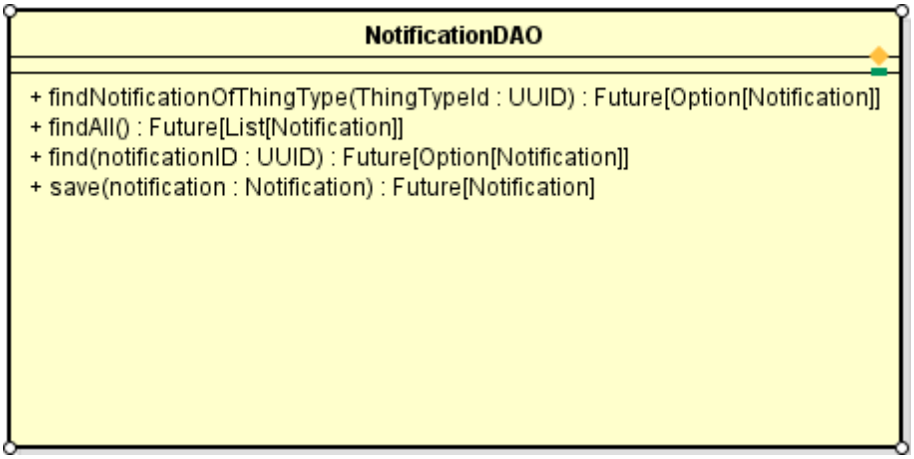

Figura 9: NotificationDAO

3.6.1.1 Descrizione

- Classe di comunicazione tra controller e database.

3.6.1.2 Eredita da

- app :: models :: notification.

3.6.1.3 Attributi

3.6.1.4 Metodi

- find: ricerca per ThingTypeID;
- findAll: ricerca generale;
- find: ricerca per UUID;
- save: salva una Notification.

3.7 app :: models :: daos :: silhouette

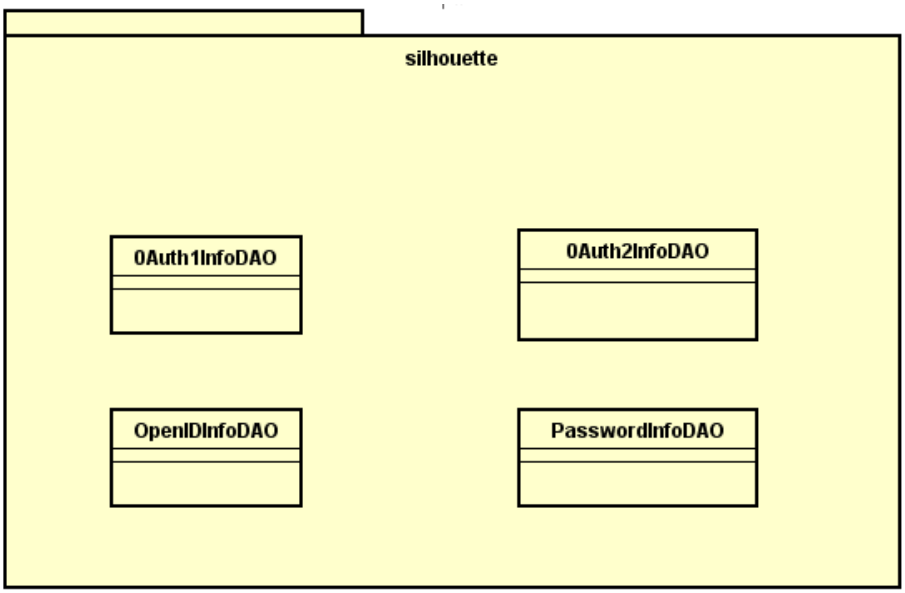

Figura 10: app :: models :: daos :: silhouette

3.7.1 0Auth1InfoDAO

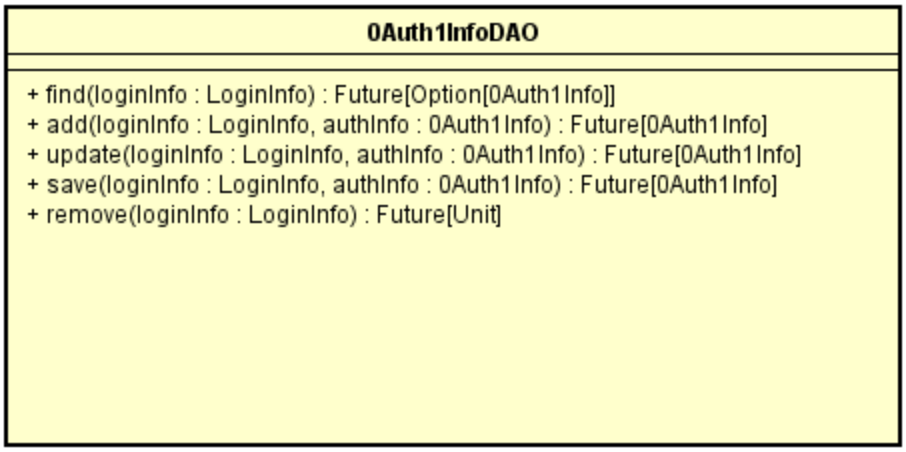

Figura 11: 0Auth1InfoDAO

3.7.1.1 Descrizione

- Classe di comunicazione tra controller e database.

3.7.1.2 Eredita da

- app :: modules :: SilhouetteModule.

3.7.1.3 Attributi

3.7.1.4 Metodi

- find: ricerca per loginInfo;
- add: aggiunge una loginInfo;
- update: aggiorna una loginInfo;
- save: salva una loginInfo;
- remove: rimuove una loginInfo.

3.7.2 0Auth2InfoDAO

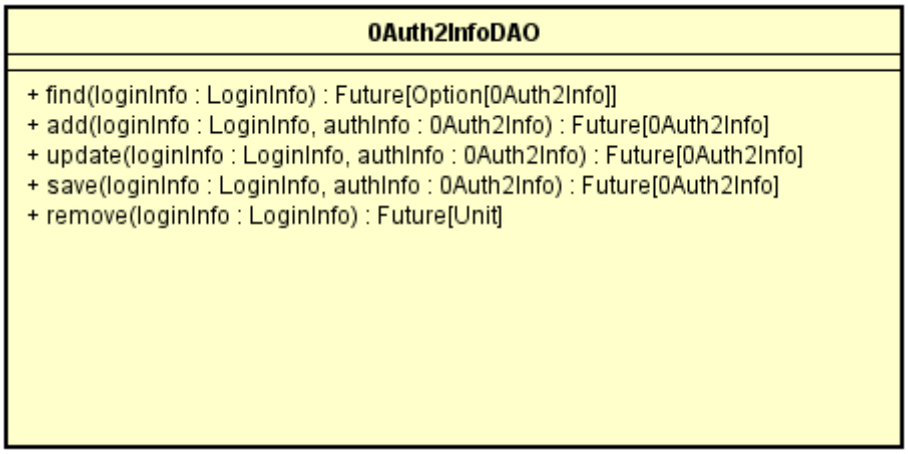

Figura 12: 0Auth2InfoDAO

3.7.2.1 Descrizione

- Classe di comunicazione tra controller e database.

3.7.2.2 Eredita da

- app :: modules :: SilhouetteModule.

3.7.2.3 Attributi

3.7.2.4 Metodi

- find: ricerca per loginInfo;
- add: aggiunge una loginInfo;
- update: aggiorna una loginInfo;
- save: salva una loginInfo;
- remove: rimuove una loginInfo.

3.7.3 OpenIDInfoDAO

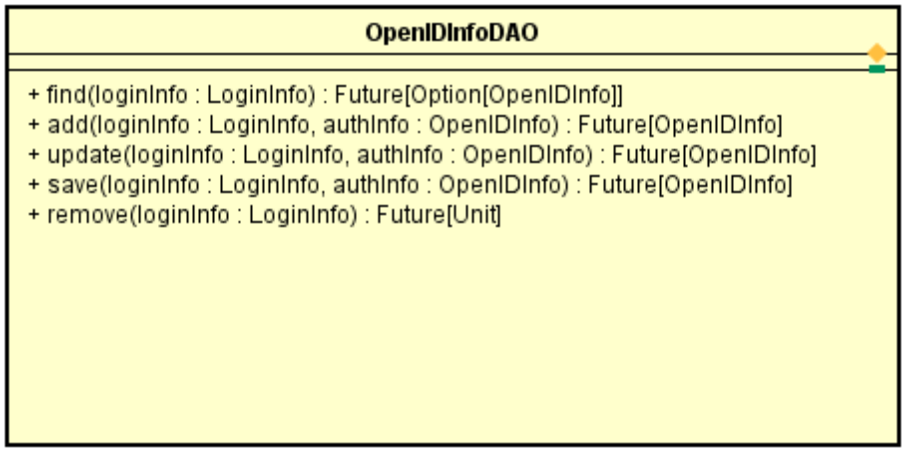

Figura 13: OpenIDInfoDAO

3.7.3.1 Descrizione

- Classe di comunicazione tra controller e database.

3.7.3.2 Eredita da

- app :: modules :: SilhouetteModule.

3.7.3.3 Attributi

3.7.3.4 Metodi

- find: ricerca per loginInfo;
- add: aggiunge una loginInfo;
- update: aggiorna una loginInfo;
- save: salva una loginInfo;
- remove: rimuove una loginInfo.

3.7.4 PasswordInfoDAO

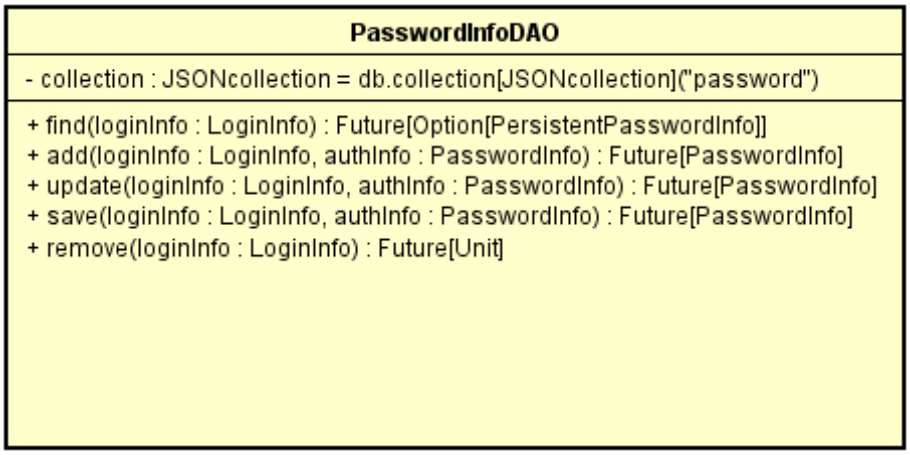

Figura 14: PasswordInfoDAO

3.7.4.1 Descrizione

- Classe di comunicazione tra controller e database.

3.7.4.2 Eredita da

- app :: modules :: SilhouetteModule.

3.7.4.3 Attributi

- collection : JSONcollection = db.collection[JSONcollection]("password"): collezione di password.

3.7.4.4 Metodi

- find: ricerca per loginInfo;
- add: aggiunge una loginInfo;
- update: aggiorna una loginInfo;
- save: salva una loginInfo;
- remove: rimuove una loginInfo.

3.8 app :: models :: daos :: thing

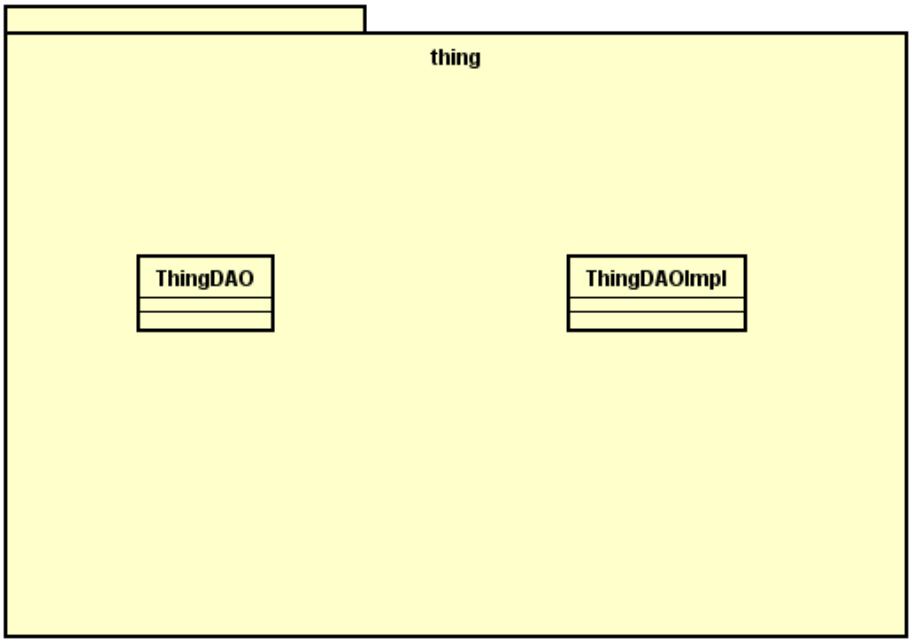

Figura 15: app :: models :: daos :: thing

3.8.1 ThingDAO

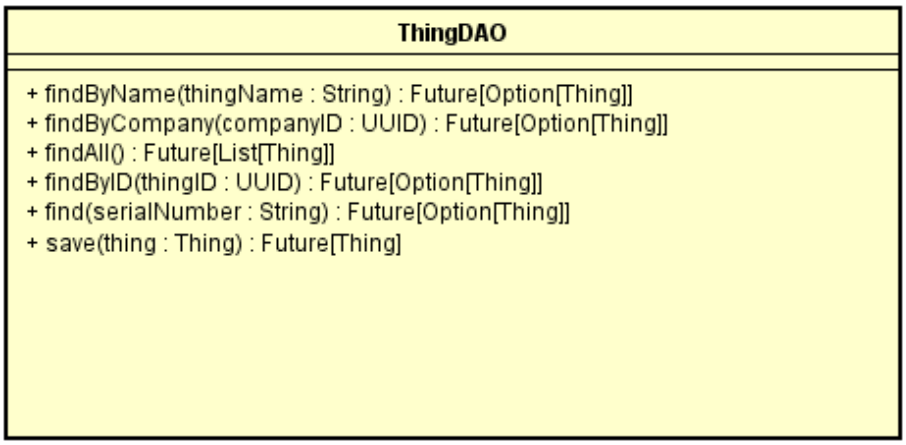

Figura 16: ThingDAO

3.8.1.1 Descrizione

- Classe di comunicazione tra controller e database.

3.8.1.2 Eredita da

- app :: modules :: Thing.

3.8.1.3 Attributi

3.8.1.4 Metodi

- findByName: ricerca per thingName;
- findByCompany: ricerca per company;
- findByID: ricerca per ID;
- findAll: ricerca tutte le thing;
- find: ricerca per numero seriale;
- save: salva una thing.

3.9 app :: models :: daos :: thingType

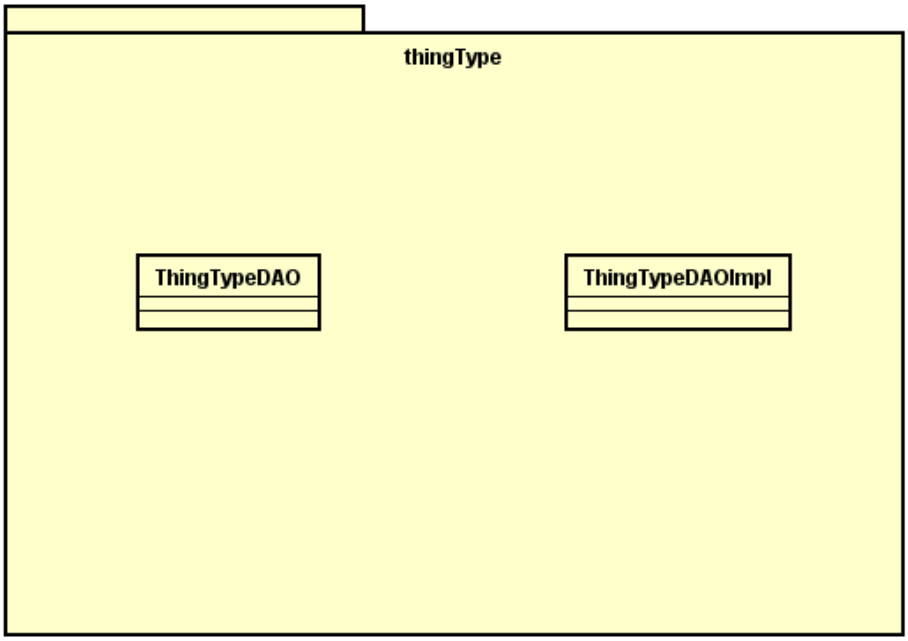

Figura 17: app :: models :: daos :: thingType

3.9.1 ThingTypeDAO

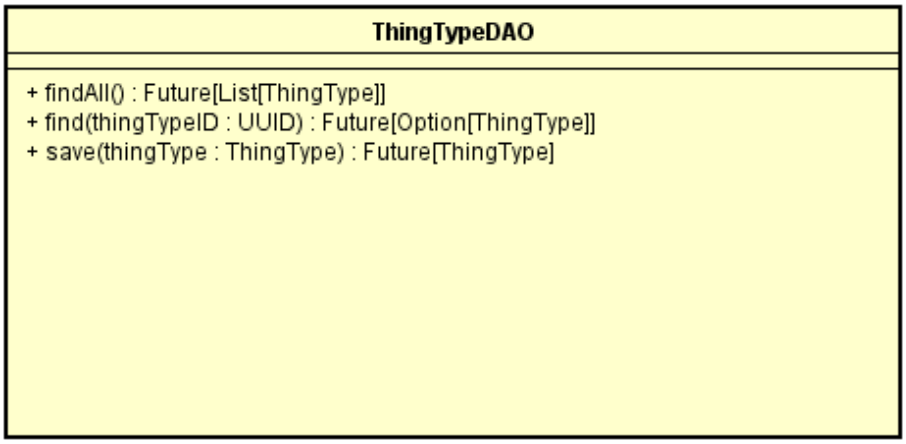

Figura 18: ThingTypeDAO

3.9.1.1 Descrizione

- Classe di comunicazione tra controller e database.

3.9.1.2 Eredita da

- app :: modules :: ThingType.

3.9.1.3 Attributi

3.9.1.4 Metodi

- findAll: ricerca tutti i thingType;
- find: ricerca per numero seriale;
- save: salva un thingType.

3.10 app :: models :: daos :: user

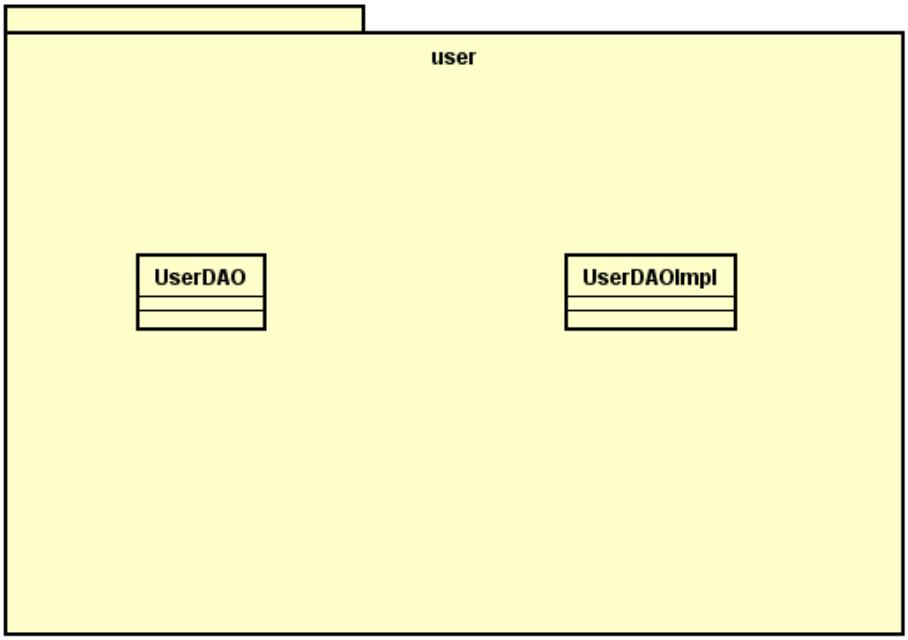

Figura 19: app :: models :: daos :: user

3.10.1 UserDAO

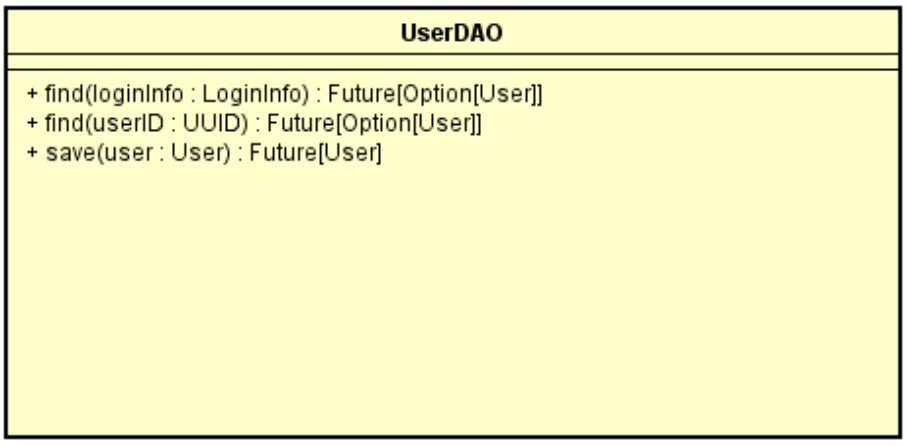

Figura 20: UserDAO

3.10.1.1 Descrizione

- Classe di comunicazione tra controller e database.

3.10.1.2 Eredita da

- app :: modules :: User.

3.10.1.3 Attributi

3.10.1.4 Metodi

- find: ricerca un utente per loginInfo;
- find: ricerca un utente per UUID;
- save: salva un utente.

3.11 app :: models :: services

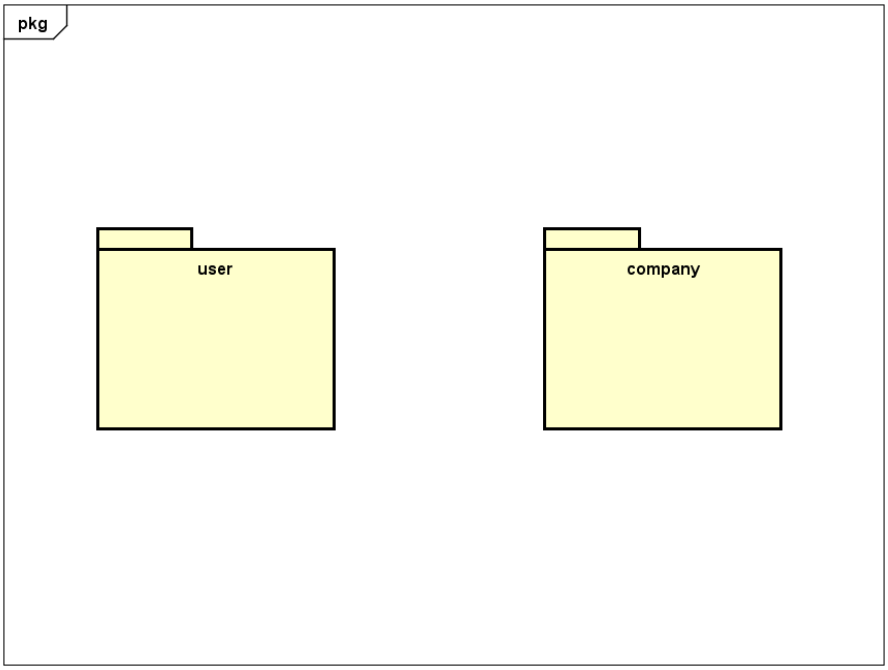

Figura 21: app :: models :: services

3.12 app :: models :: services :: user

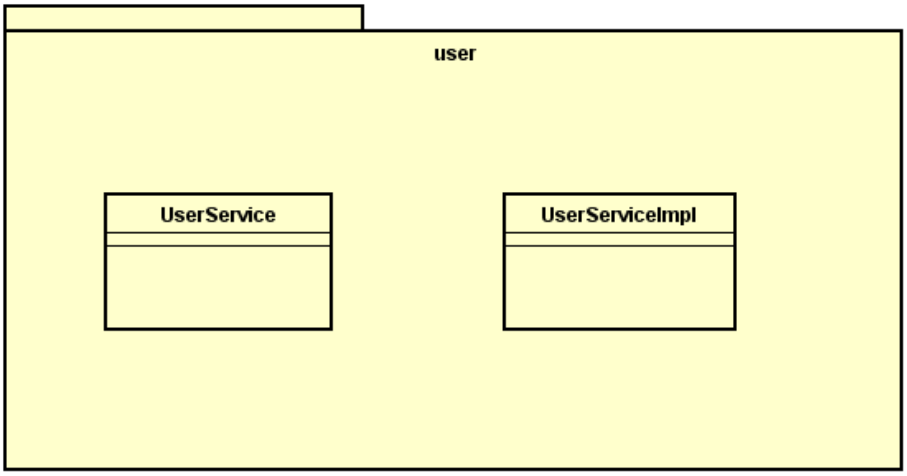

Figura 22: app :: models :: services :: user

3.12.1 UserService

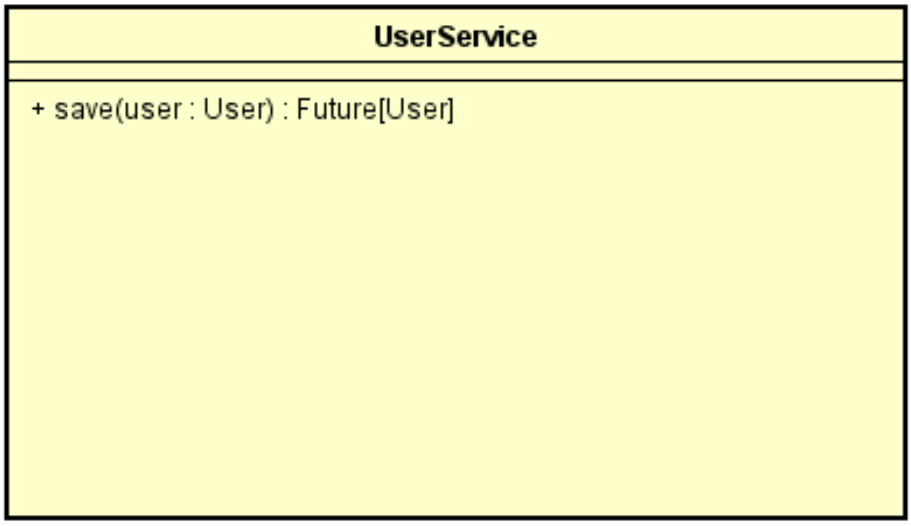

Figura 23: UserService

3.12.1.1 Descrizione

- classe di comunicazione tra user e silhouette

3.12.1.2 Eredita da

- app :: modules :: User.

3.12.1.3 Attributi

3.12.1.4 Metodi

- save: salva uno user;

3.13 Chart

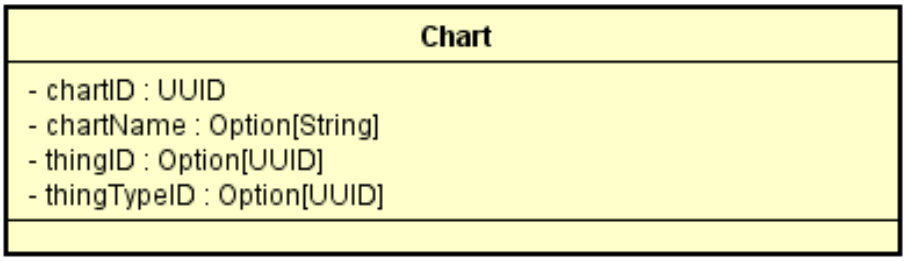

Figura 24: Chart

3.13.1 Descrizione

- Definizione della classe dei grafici.

3.13.2 Eredita da

3.13.3 Attributi

- chartID;
- chartName;
- thingID;
- ThingTypeID.

3.13.4 Metodi

3.14 Company

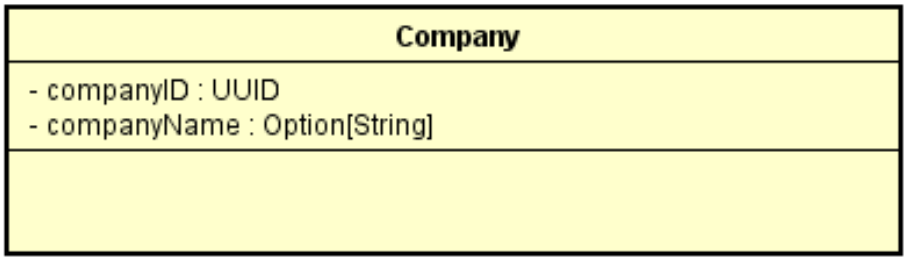

Figura 25: Company

3.14.1 Descrizione

- Definizione della classe company.

3.14.2 Eredita da

3.14.3 Attributi

- companyID;
- companyName.

3.14.4 Metodi

3.15 Notification

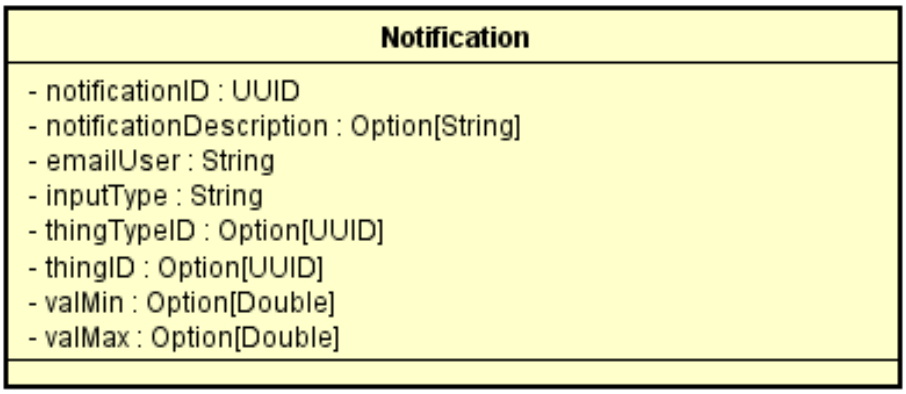

Figura 26: Notification

3.15.1 Descrizione

- Definizione della classe notification.

3.15.2 Eredita da

3.15.3 Attributi

- notificationID;
- notificationDescription;
- emailUser;
- inputType;
- thingTypeID;
- thingID;
- valMin;
- valMax.

3.15.4 Metodi

3.16 Thing

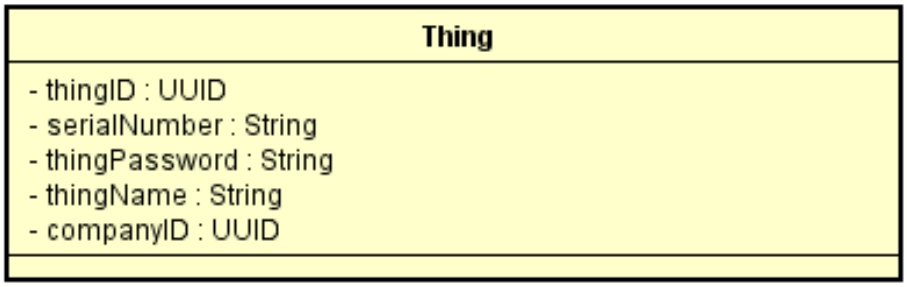

Figura 27: Thing

3.16.1 Descrizione

- Definizione della classe thing.

3.16.2 Eredita da

3.16.3 Attributi

- thingID;
- serialNumber;
- thingPassword;
- thingName;
- companyID.

3.16.4 Metodi

3.17 ThingType

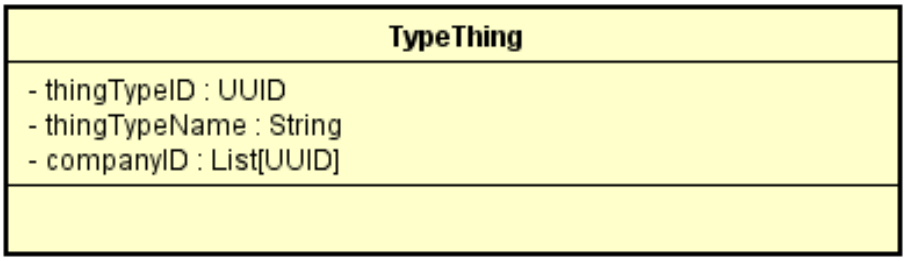

Figura 28: ThingType

3.17.1 Descrizione

- Definizione della classe thingType.

3.17.2 Eredita da

3.17.3 Attributi

- thingTypeID;
- thingTypeName;
- companyID.

3.17.4 Metodi

3.18 User

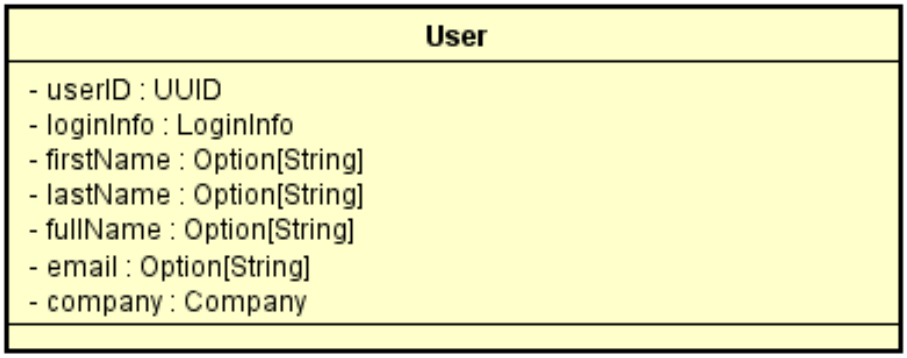

Figura 29: User

3.18.1 Descrizione

- Definizione della classe User.

3.18.2 Eredita da

3.18.3 Attributi

- userID;
- loginInfo;
- firstName;
- lastName;
- fullName;
- email;
- company.

3.18.4 Metodi

3.19 app :: controller

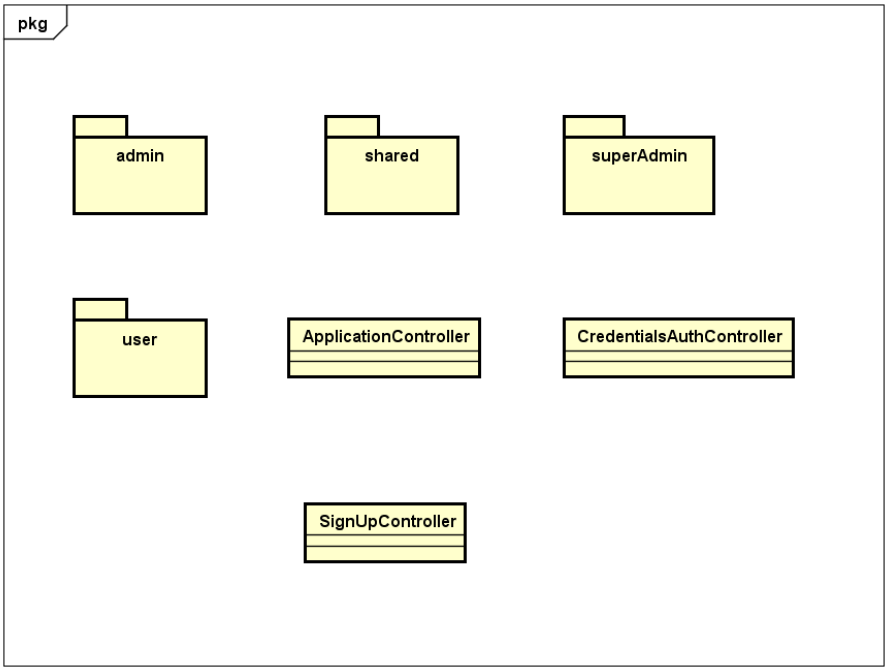

Figura 30: app :: controller

3.20 app :: controller :: admin

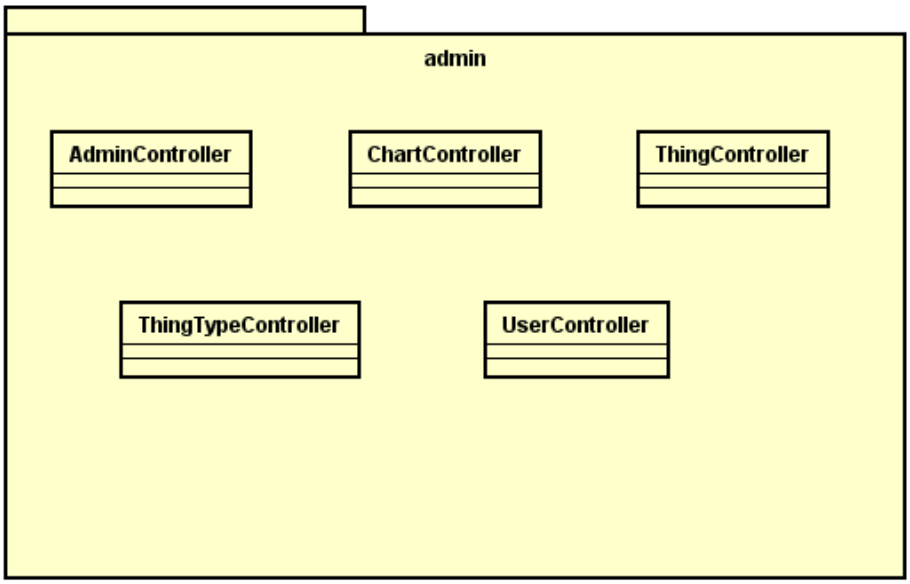

Figura 31: app :: controller :: admin

3.20.1 app :: controller :: admin :: ThingTypeController

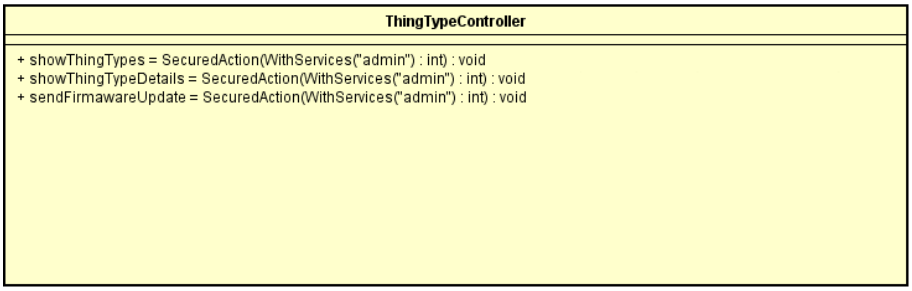

Figura 32: ThingTypeController

3.20.1.1 Descrizione

- Controller della classe ThingType

3.20.1.2 Eredita da

3.20.1.3 Attributi

3.20.1.4 Metodi

- showThingTypes: mostra tutti i tipi delle thing;
- showThingTypeDetails: mostra i dettagli di un tipo di thing;
- sendFirmawareUpdate: aggiorna i firmware di una thing.

3.20.2 app :: controller :: admin :: AdminController

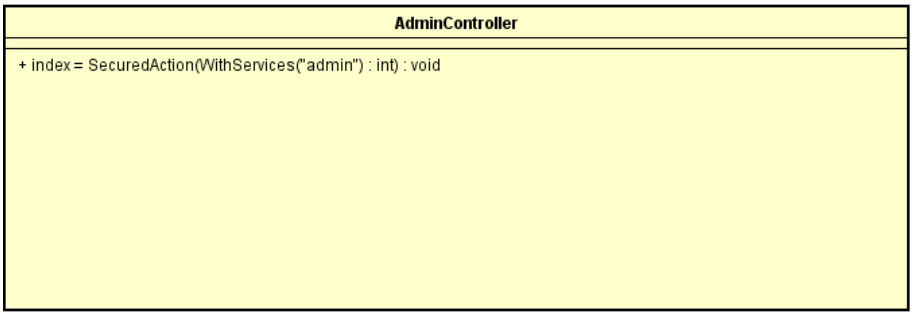

Figura 33: AdminController

3.20.2.1 Descrizione

- Controller della classe Admin

3.20.2.2 Eredita da

3.20.2.3 Attributi

3.20.2.4 Metodi

- index.

3.20.3 app :: controller :: admin :: ChartController

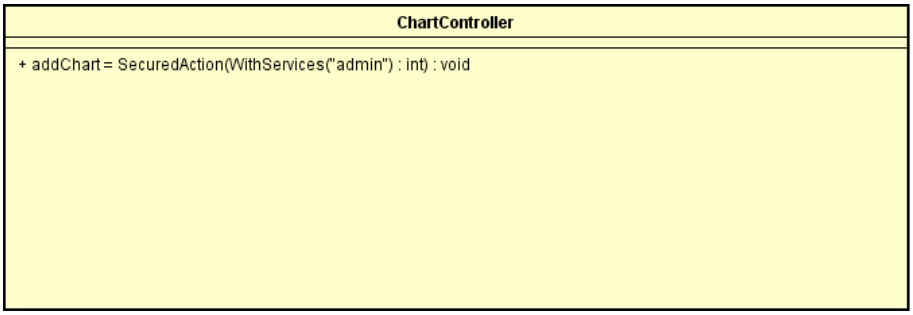

Figura 34: ChartController

3.20.3.1 Descrizione

- Controller della classe Chart

3.20.3.2 Eredita da

3.20.3.3 Attributi

3.20.3.4 Metodi

- addChart: aggiunge una tabella.

3.20.4 app :: controller :: admin :: ThingController

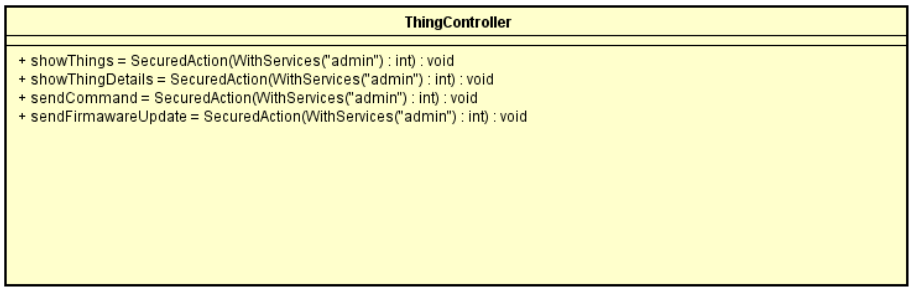

Figura 35: ThingController

3.20.4.1 Descrizione

- Controller della classe thing

3.20.4.2 Eredita da

3.20.4.3 Attributi

3.20.4.4 Metodi

- showThings: mostra le thing;
- showThingDetails: mostra i dettagli di una thing;
- sendCommand: invia un comando ad una thing;
- sendFirmawareUpdate: invia un update firmware ad una thing.

3.20.5 app :: controller :: admin :: UserController

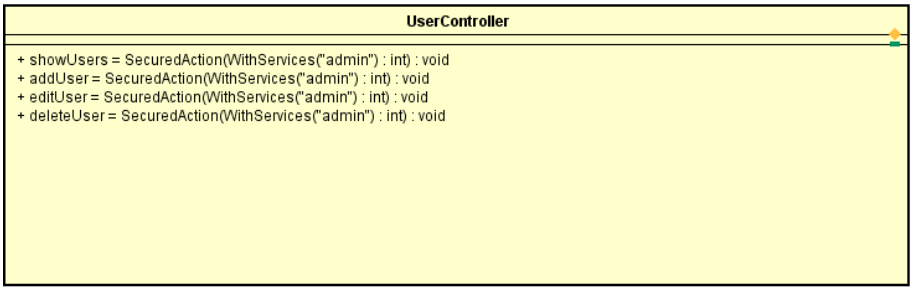

Figura 36: UserController

3.20.5.1 Descrizione

- Controller della classe user

3.20.5.2 Eredita da

3.20.5.3 Attributi

3.20.5.4 Metodi

- showUsers: mostra gli user;
- addUser: aggiunge uno user;
- editUser: modifica user;
- deleteUser:cancella uno user.

3.21 app :: controller :: shared

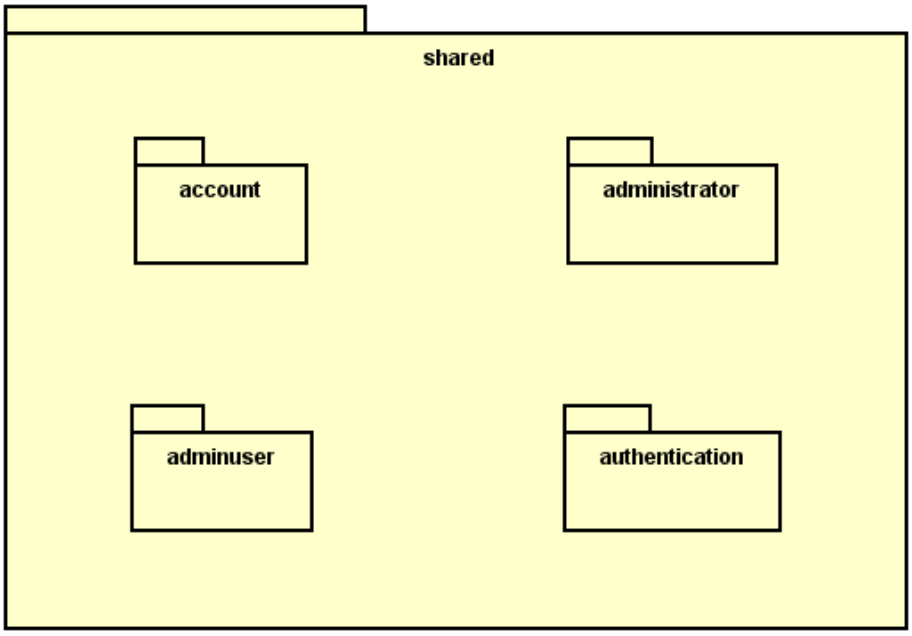

Figura 37: app :: controller :: shared

3.22 app :: controller :: shared :: account

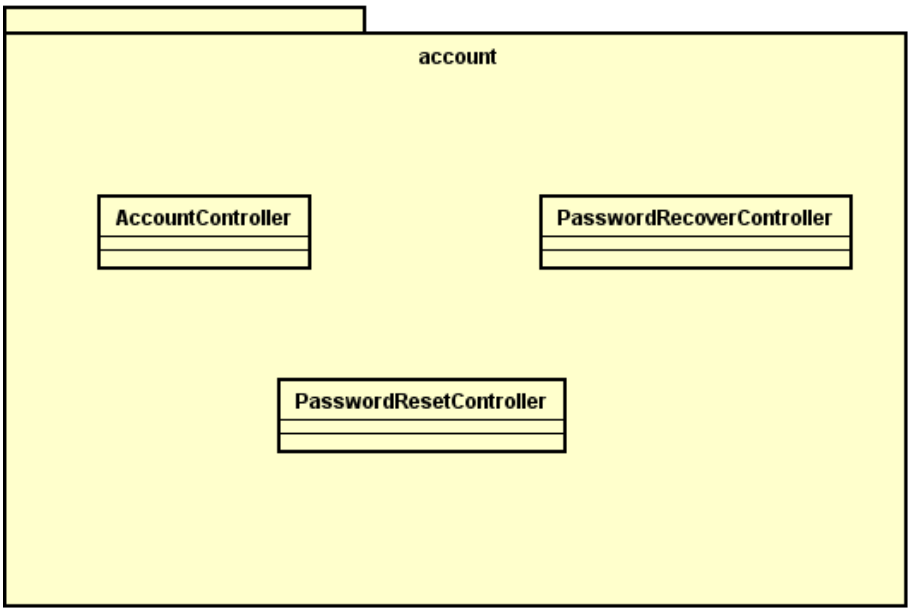

Figura 38: app :: controller :: shared :: account

3.22.1 app :: controller :: shared :: account :: AccountController

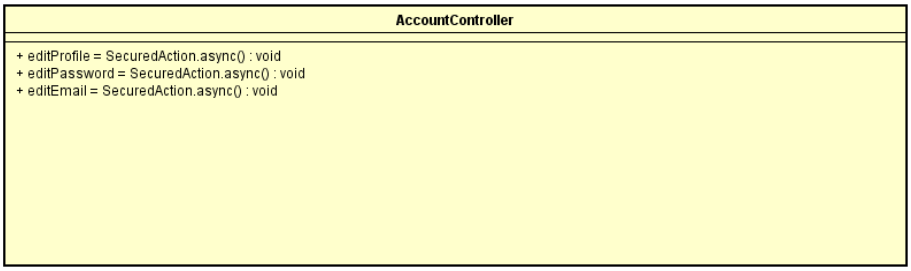

Figura 39: AccountController

3.22.1.1 Descrizione

- Controller della classe Account

3.22.1.2 Eredita da

3.22.1.3 Attributi

3.22.1.4 Metodi

- editProfile: modifica il profilo;
- editPassword: modifica la password;
- editEmail: modifica l'Email.

3.22.2 app :: controller :: shared :: account :: PasswordRecoverController

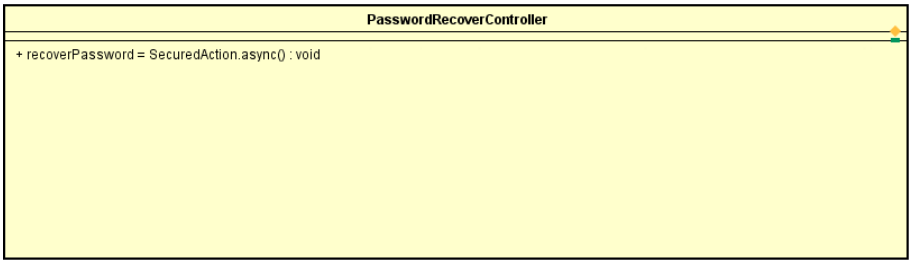

Figura 40: PasswordRecoverController

3.22.2.1 Descrizione

- Controller per il recupero della password

3.22.2.2 Eredita da

3.22.2.3 Attributi

3.22.2.4 Metodi

- recoverPassword: invia l'email contenente il link per il recupero della password.

3.22.3 app :: controller :: shared :: account :: PasswordResetController

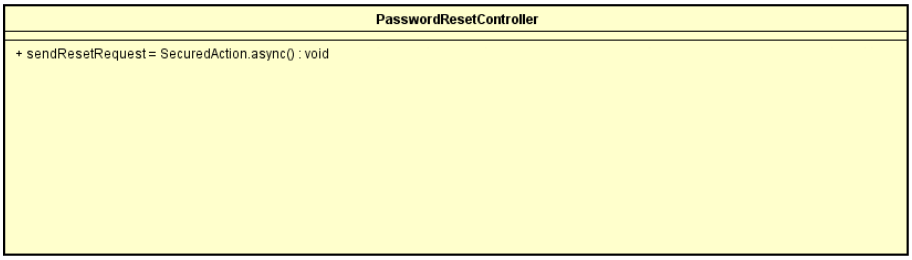

Figura 41: PasswordResetController

3.22.3.1 Descrizione

- Controller per il reset della password

3.22.3.2 Eredita da

3.22.3.3 Attributi

3.22.3.4 Metodi

- resetPassword: effettua la modifica della password.

3.23 app :: controller :: shared :: administrator

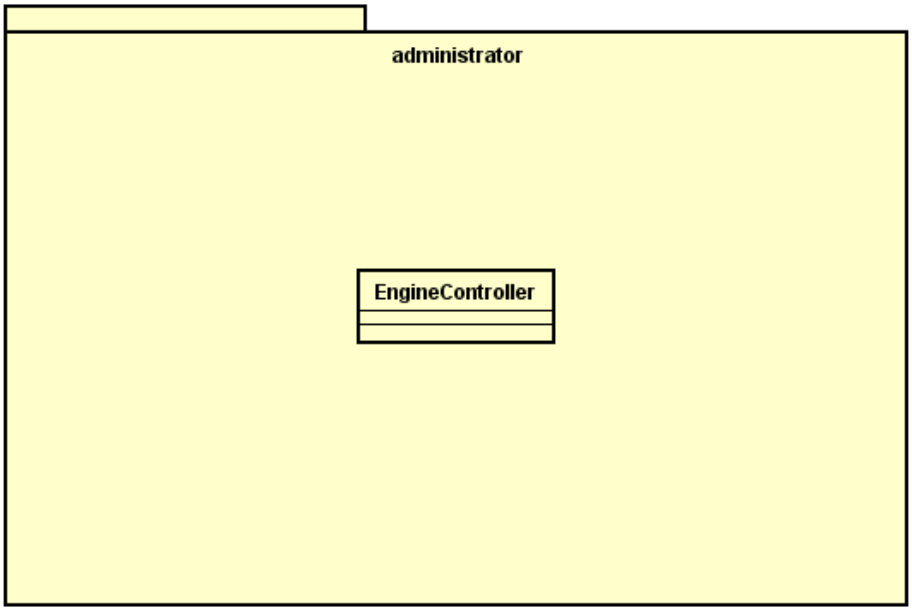

Figura 42: app :: controller :: shared :: administrator

3.23.1 app :: controller :: shared :: adminstrator :: EngineController

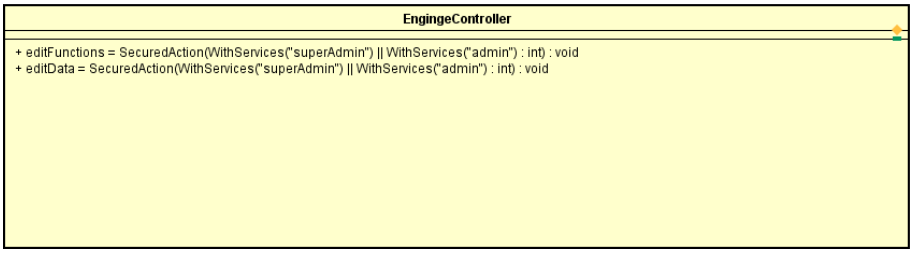

Figura 43: EngineController

3.23.1.1 Descrizione

- Controller per la gestione dell'engine predittivo

3.23.1.2 Eredita da

3.23.1.3 Attributi

3.23.1.4 Metodi

- editFunctions: modifica le funzionalita';
- editData: modifica i dati da analizzare.

3.24 app :: controller :: shared :: adminUser

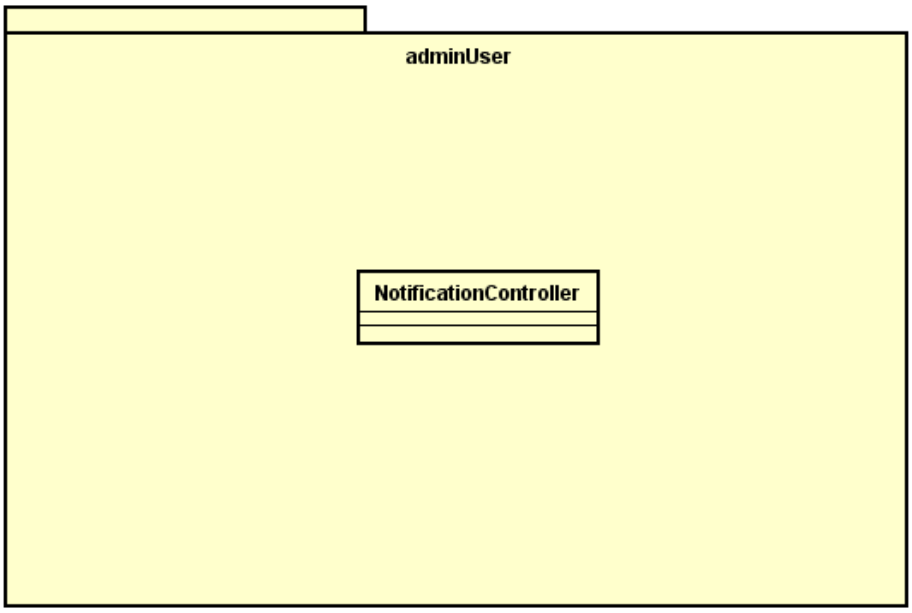

Figura 44: app :: controller :: shared :: adminUser

3.24.1 app :: controller :: shared :: adminUser :: NotificationController

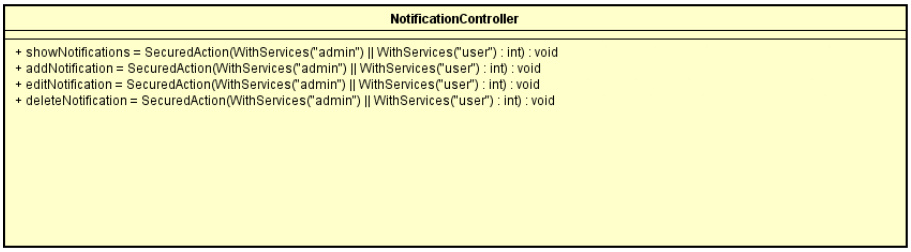

Figura 45: NotificationController

3.24.1.1 Descrizione

- Controller delle notifiche

3.24.1.2 Eredita da

3.24.1.3 Attributi

3.24.1.4 Metodi

- showNotifications: mostra le notifiche;
- addNotification: aggiunge una notifica;
- editNotification: modifica una notifica;

- deleteNotification: elimina una notifica.

3.25 app :: controller :: shared :: authentication

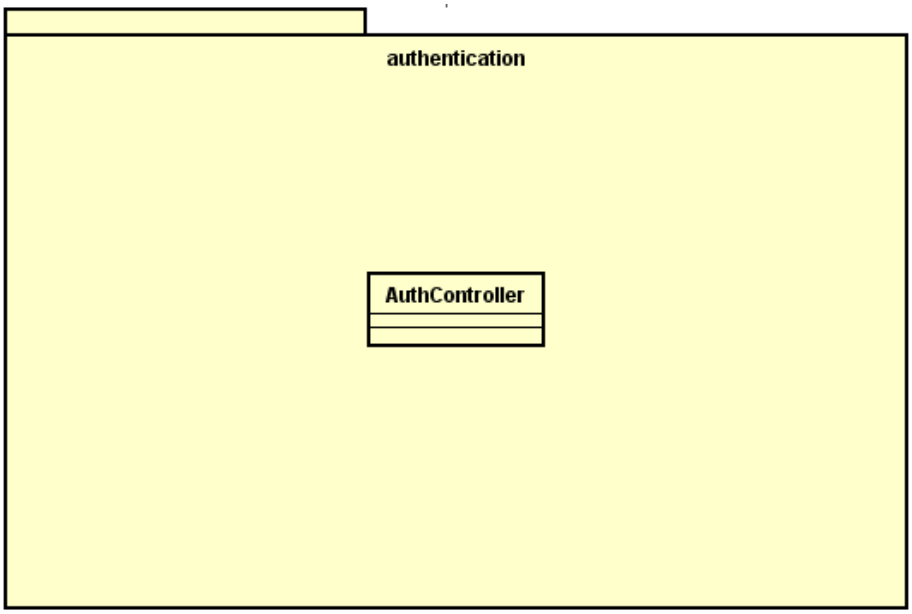

Figura 46: app :: controller :: shared :: authentication

3.25.1 app :: controller :: shared :: authentication :: AuthController

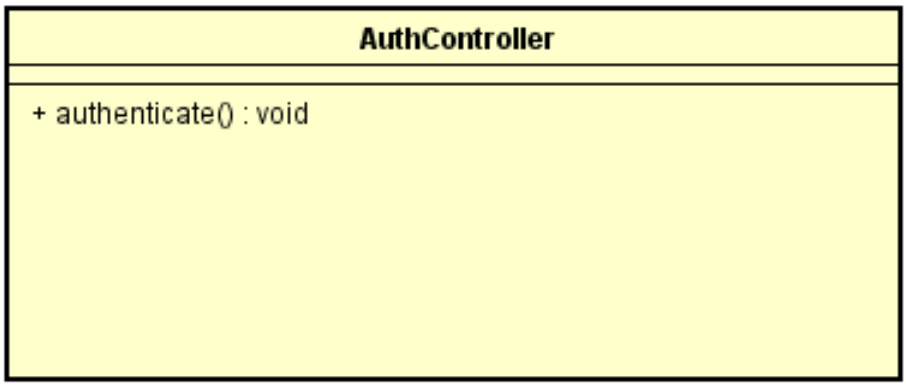

Figura 47: AuthController

3.25.1.1 Descrizione

- Controller dell'autenticazione

3.25.1.2 Eredita da

3.25.1.3 Attributi

3.25.1.4 Metodi

- authenticate: effettua l'autenticazione;

3.26 app :: controller :: superAdmin

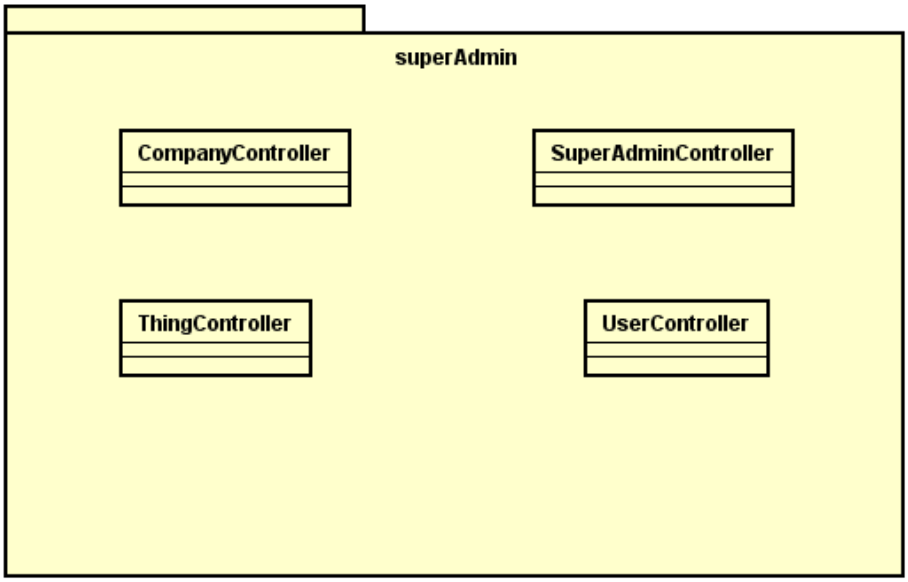

Figura 48: app :: controller :: superAdmin

3.26.1 app :: controller :: superAdmin :: CompanyController

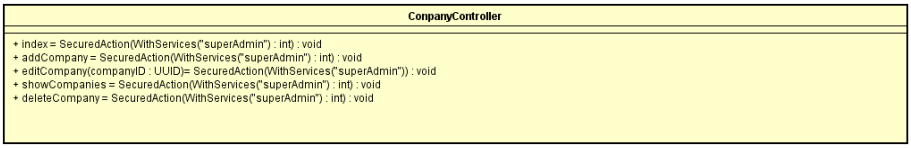

Figura 49: CompanyController

3.26.1.1 Descrizione

- Controller della classe company

3.26.1.2 Eredita da

3.26.1.3 Attributi

3.26.1.4 Metodi

- index: indice delle company;
- addCompany: aggiunge una company;
- editCompany: modifica una company;

- showCompanies: mostra le company;
- deleteCompany: rimuove una company.

3.26.2 app :: controller :: superAdmin :: SuperAdminController

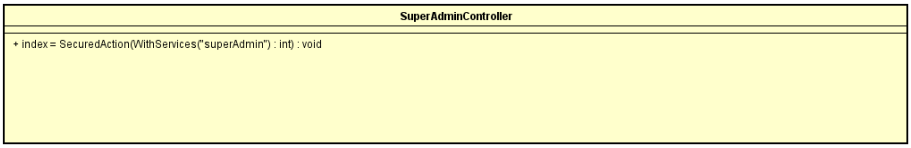

Figura 50: SuperAdminController

3.26.2.1 Descrizione

- Controller della classe superadmin

3.26.2.2 Eredita da

3.26.2.3 Attributi

3.26.2.4 Metodi

- index: indice dei superadmin.

3.26.3 app :: controller :: superAdmin :: ThingController

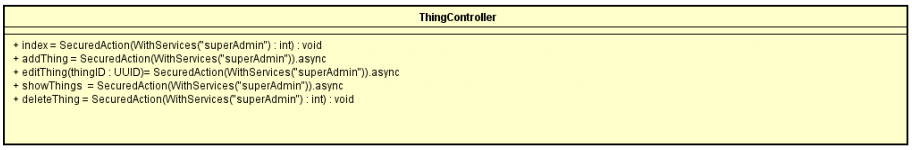

Figura 51: ThingController

3.26.3.1 Descrizione

- Controller della classe thing

3.26.3.2 Eredita da

3.26.3.3 Attributi

3.26.3.4 Metodi

- index: indice delle thing;
- addThing: aggiunge una thing;
- editThing: modifica una thing;
- showThings: mostra le thing;
- deleteThing: rimuove una thing.

3.26.4 app :: controller :: superAdmin :: UserController

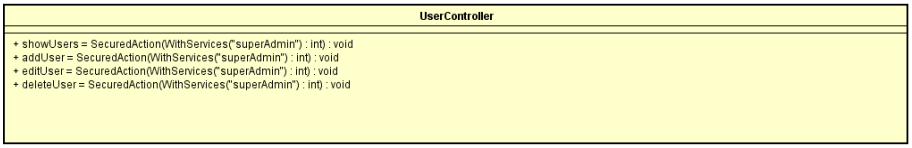

Figura 52: UserController

3.26.4.1 Descrizione

- Controller della classe User

3.26.4.2 Eredita da

3.26.4.3 Attributi

3.26.4.4 Metodi

- addUser: aggiunge uno user;
- editUser: modifica uno user;
- showUsers: mostra gli user;
- deleteUser: rimuove uno user.

3.27 app :: controller :: user

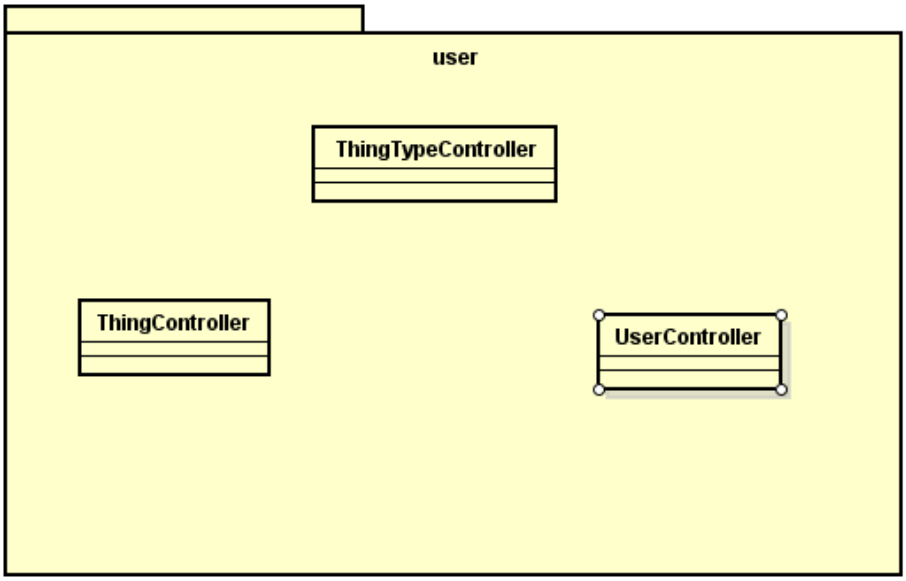

Figura 53: app :: controller :: User

3.27.1 app :: controller :: user :: ThingController

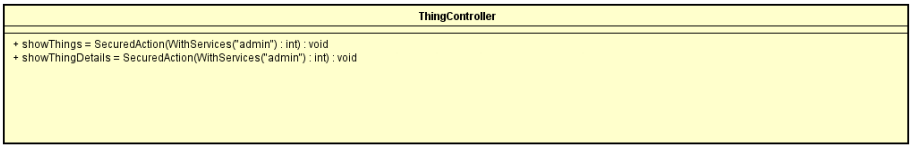

Figura 54: ThingController

3.27.1.1 Descrizione

- Controller della classe Thing

3.27.1.2 Eredita da

3.27.1.3 Attributi

3.27.1.4 Metodi

- showThings: mostra le thing;
- showThingDetails: mostra i dettagli di una thing.

3.27.2 app :: controller :: user :: ThingTypeController

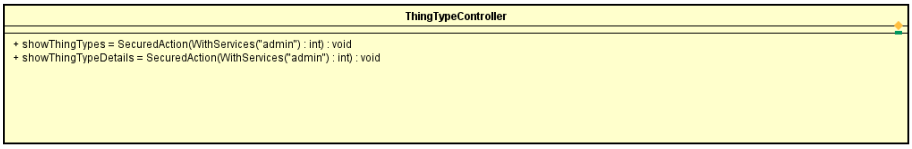

Figura 55: ThingTypeController

3.27.2.1 Descrizione

- Controller della classe ThingType

3.27.2.2 Eredita da

3.27.2.3 Attributi

3.27.2.4 Metodi

- showThingTypes: mostra i thingtype;
- showThingTypeDetails: mostra i dettagli di un thingtype.

3.27.3 app :: controller :: user :: UserController

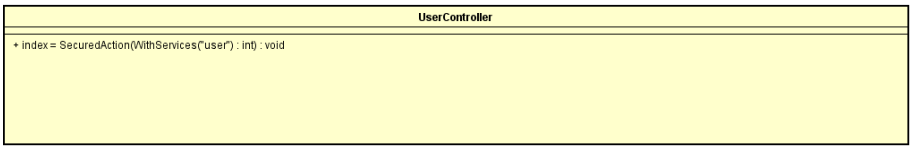

Figura 56: UserController

3.27.3.1 Descrizione

- Controller della classe User

3.27.3.2 Eredita da

3.27.3.3 Attributi

3.27.3.4 Metodi

- index: indice di users.

3.28 app :: controller :: ApplicationController

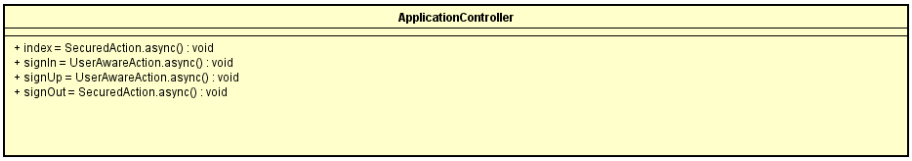

Figura 57: ApplicationController

3.28.1 Descrizione

- Controller della pagina principale

3.28.2 Eredita da

3.28.3 Attributi

3.28.4 Metodi

- signIn: login;
- signUp: registrazione;
- signOut: logout.

3.29 app :: controller :: CredentialsAuthController

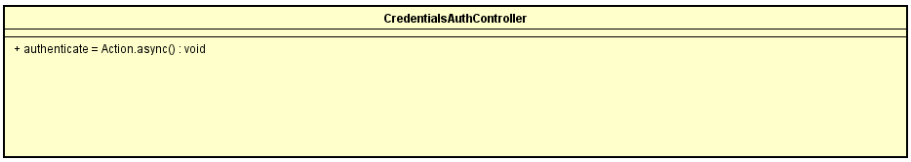

Figura 58: CredentialsAuthController

3.29.1 Descrizione

- Controller delle credenziali di accesso

3.29.2 Eredita da

3.29.3 Attributi

3.29.4 Metodi

- authenticate: credenziali di autenticazione.

3.30 app :: controller :: SingUpController

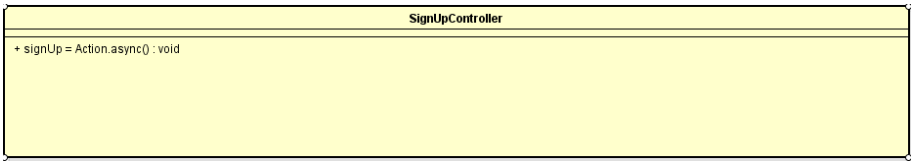

Figura 59: SingUpController

3.30.1 Descrizione

- Controller dell'iscrizione.

3.30.2 Eredita da

3.30.3 Attributi

3.30.4 Metodi

- signUp: registrazione;

3.31 app :: views

3.31.1 app :: views :: home

3.31.1.1 Descrizione

- Classe contenente il codice HTML che va a visualizzare la home page di ogni utente in base al ruolo con il quale è registrato nella piattaforma.

3.31.2 app :: views :: main

3.31.2.1 Descrizione

- Classe contenente il codice HTML che definisce la struttura di tutte le pagine web della piattaforma.

3.32 app :: views :: superAdmin

3.32.1 app :: views :: superAdmin :: home

3.32.1.1 Descrizione

- Classe che visualizza la homepage per un utente di tipo SuperAdmin.

3.33 app :: views :: superAdmin :: user

3.33.1 app :: views :: superAdmin :: user :: users

3.33.1.1 Descrizione

- Classe che visualizza la lista con tutti gli utenti iscritti alla piattaforma e la relativa interfaccia per lanciare le classiche operazioni CRUD.

3.33.2 app :: views :: superAdmin :: user :: addUser

3.33.2.1 Descrizione

- Classe che visualizza la form necessaria ad aggiungere un nuovo utente alla piattaforma.

3.33.3 app :: views :: superAdmin :: user :: editUser

3.33.3.1 Descrizione

- Classe che visualizza la form necessaria a modificare un utente presente nella piattaforma.

3.34 app :: views :: superAdmin :: company

3.34.1 app :: views :: superAdmin :: company :: companies

3.34.1.1 Descrizione

- Classe che visualizza la lista con tutte le company presenti nella piattaforma e le relative operazioni di CRUD disponibili.

3.34.2 app :: views :: superAdmin :: company :: addCompany

3.34.2.1 Descrizione

- Classe che visualizza la form per aggiungere una nuova company alla piattaforma.

3.34.3 app :: views :: superAdmin :: company :: editCompany

3.34.3.1 Descrizione

- Classe che visualizza la form per modificare i dati di una company già presente nella piattaforma.

3.35 app :: views :: superAdmin :: thing

3.35.1 app :: views :: superAdmin :: thing :: things

3.35.1.1 Descrizione

- Classe che visualizza la lista con tutte i thing presenti nella piattaforma e le relative operazioni di CRUD disponibili.

3.35.2 app :: views :: superAdmin :: thing :: addThing

3.35.2.1 Descrizione

- Classe che visualizza la form per aggiungere un nuovo oggetto alla piattaforma.

3.35.3 app :: views :: superAdmin :: thing :: editThing

3.35.3.1 Descrizione

- Classe che visualizza la form per modificare i dati di un thing già presente nella piattaforma.

3.36 app :: views :: superAdmin :: thingType

3.36.1 app :: views :: superAdmin :: thingType :: thingTypes

3.36.1.1 Descrizione

- Classe che visualizza la lista con tutte i tipi di thing presenti nella piattaforma e le relative operazioni di CRUD disponibili.

3.36.2 app :: views :: superAdmin :: thingType :: addThingType

3.36.2.1 Descrizione

- Classe che visualizza la form per aggiungere un nuovo tipo di thing alla piattaforma.

3.36.3 app :: views :: superAdmin :: thingType :: editThingType

3.36.3.1 Descrizione

- Classe che visualizza la form per modificare i dati di un tipo di thing già presente nella piattaforma.

3.37 app :: views :: superAdmin :: engine

3.37.1 app :: views :: superAdmin :: engine :: engine

3.37.1.1 Descrizione

- Classe che visualizza delle tabelle relative alle funzioni utilizzabili in fase di definizione di un modello di analisi e un interfaccia relativa a quali dati per ogni modello di oggetto sono effettivamente inoltrati alla company.

3.38 app :: views :: admin

3.38.1 app :: views :: admin :: home

3.38.1.1 Descrizione

- Classe che visualizza la homepage per un utente di tipo Admin.

3.39 app :: views :: admin :: thing

3.39.1 app :: views :: admin :: thing :: thingDetails

3.39.1.1 Descrizione

- Classe che visualizza una tabella contenente informazioni relative allo stato del Thing, ai grafici che lo interessano e all'invio di comandi e aggiornamento firmware degli oggetti dello stesso tipo.

3.40 app :: views :: admin :: thingType

3.40.1 app :: views :: admin :: thingType :: thingTypeDetails

3.40.1.1 Descrizione

- Classe che visualizza una tabella contenente informazioni relative allo stato del Thing, ai grafici che lo interessano e aggiornamento firmware per quella tipologia di oggetto.

3.41 app :: views :: admin :: chart

3.41.1 app :: views :: admin :: chart :: newChart

3.41.1.1 Descrizione

- Classe che visualizza una pagina con la procedura a passaggi che permette di creare dei grafici personalizzati per un particolare modello di oggetti selezionando le funzioni, il tipo di grafico, i dati e come relazionarli tra loro.

3.42 app :: views :: admin :: engine

3.42.1 app :: views :: admin :: engine :: editFunctions

3.42.1.1 Descrizione

- Classe che visualizza delle tabelle relative alle funzioni utilizzabili in fase di definizione di un modello di analisi.

3.42.2 app :: views :: admin :: engine :: editData

3.42.2.1 Descrizione

- Classe che visualizza delle tabelle relative ai dati visualizzabili e utilizzabili poi in fase di definizione di un modello di analisi.

3.43 app :: views :: admin :: user

3.43.1 app :: views :: admin :: user :: users

3.43.1.1 Descrizione

- Classe che visualizza la lista con tutti gli utenti iscritti alla piattaforma e la relativa interfaccia per lanciare le classiche operazioni CRUD.

3.43.2 app :: views :: admin :: user :: addUser

3.43.2.1 Descrizione

- Classe che visualizza la form necessaria ad aggiungere un nuovo utente alla piattaforma.

3.43.3 app :: views :: admin :: user :: editUser

3.43.3.1 Descrizione

- Classe che visualizza la form necessaria a modificare un utente presente nella piattaforma.

3.44 app :: views :: user

3.44.1 app :: views :: user :: home

3.44.1.1 Descrizione

- Classe che visualizza la homepage per un utente di tipo User.

3.45 app :: views :: user :: thing

3.45.1 app :: views :: user :: thing :: thingDetails

3.45.1.1 Descrizione

- Classe che visualizza una tabella contenente i dati di un particolare thing e i grafici relativi allo stesso.

3.45.2 app :: views :: user :: thingType :: thingTypeDetails

3.45.2.1 Descrizione

- Classe che visualizza una tabella contenente il riepilogo dei dati degli oggetti di un particolare modello e i grafici generici relativi al modello stesso.

3.46 app :: views :: shared :: adminUser

3.46.1 app :: views :: shared :: adminUser :: things

3.46.1.1 Descrizione

- Classe che visualizza la pagina con la lista dei things in uso dalla propria company.

3.46.2 app :: views :: shared :: adminUser :: thingTypes

3.46.2.1 Descrizione

- Classe che visualizza la pagina con la lista delle tipologie di things in uso dalla propria company.

3.46.3 app :: views :: shared :: adminUser :: notifications

3.46.3.1 Descrizione

- Classe che visualizza la pagina con la lista delle tipologie di things in uso dalla propria company.

3.46.4 app :: views :: shared :: adminUser :: addNotification

3.46.4.1 Descrizione

- Classe che visualizza la form necessaria ad aggiungere una nuova notifica per un thing o una loro tipologia.

3.46.5 app :: views :: shared :: adminUser :: editNotification

3.46.5.1 Descrizione

- Classe che visualizza la form necessaria a modificare una notifica impostata per un dato thing o una tipologia di esso.

3.47 app :: views :: shared :: authentication

3.47.1 app :: views :: shared :: authentication :: signIn

3.47.1.1 Descrizione

- Classe che visualizza la pagina di login con il form necessario ad autenticarsi.

3.47.2 app :: views :: shared :: authentication :: signOut

3.47.2.1 Descrizione

- Classe che visualizza gli esiti di un'operazione di logout.

3.47.3 app :: views :: shared :: authentication :: passwordRecover

3.47.3.1 Descrizione

- Classe che visualizza la pagina di recupero password e il form associato atto ad assolvere tale compito.

3.47.4 app :: views :: shared :: authentication :: resetPassword

3.47.4.1 Descrizione

- Classe che visualizza la pagina di reset password e il form associato atto ad assolvere tale compito.

3.48 app :: views :: shared :: account

3.48.1 app :: views :: shared :: account :: editAccount

3.48.1.1 Descrizione

- Classe che visualizza una pagina per la modifica del profilo contenente i form per la modifica delle varie informazioni, sia anagrafiche che di autenticazione.

3.49 app :: views :: shared :: layout

3.49.1 app :: views :: shared :: layout :: header

3.49.1.1 Descrizione

- Classe che permette la creazione dell'header delle varie view.

3.49.2 app :: views :: shared :: layout :: footer

3.49.2.1 Descrizione

- Classe che permette la creazione del footer delle varie view.

3.49.3 app :: views :: shared :: layout :: layout

3.49.3.1 Descrizione

- Classe che permette la creazione del layout delle varie view.

3.49.4 app :: views :: shared :: layout :: nav

3.49.4.1 Descrizione

- Classe che permette la creazione del menu di navigazione delle varie view. Ogni view riempirà il proprio menu a seconda dell'esigenza.

3.50 app :: views :: shared :: errors

3.50.1 app :: views :: shared :: errors :: 404

3.50.1.1 Descrizione

- Classe che visualizza la pagina di errore 404.

3.50.2 app :: views :: shared :: errors :: 502

3.50.2.1 Descrizione

- Classe che visualizza la pagina di errore 502.

4 Diagrammi di Sequenza

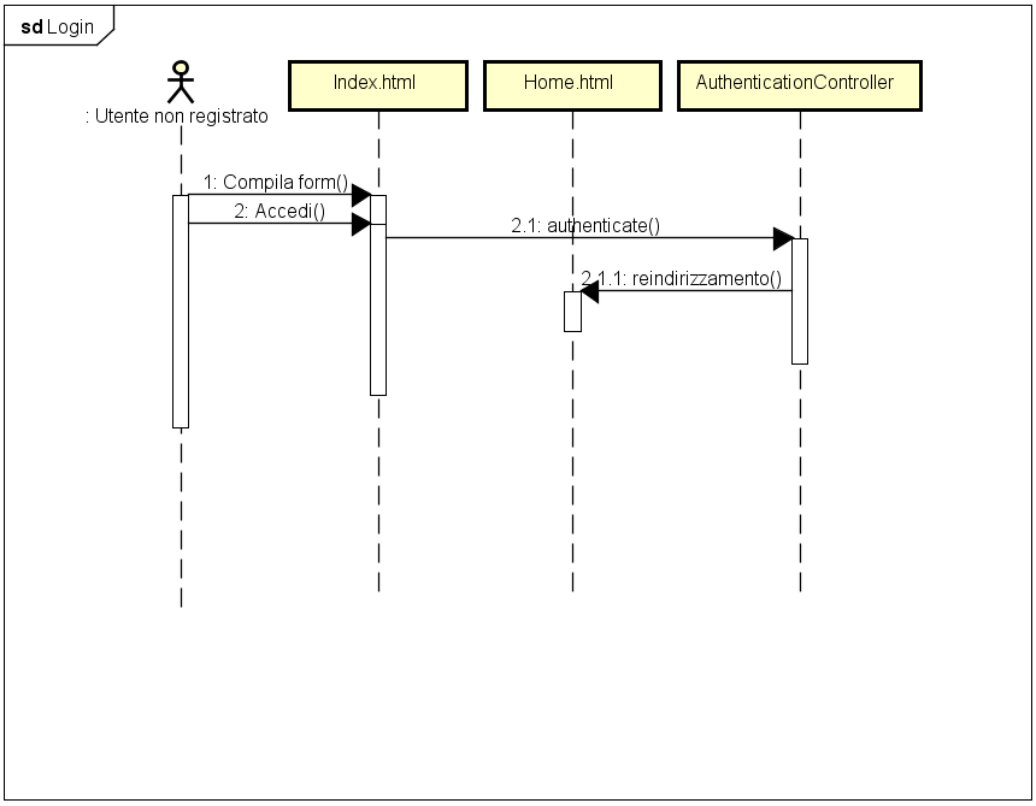

Figura 60: Login

4.1 Front end

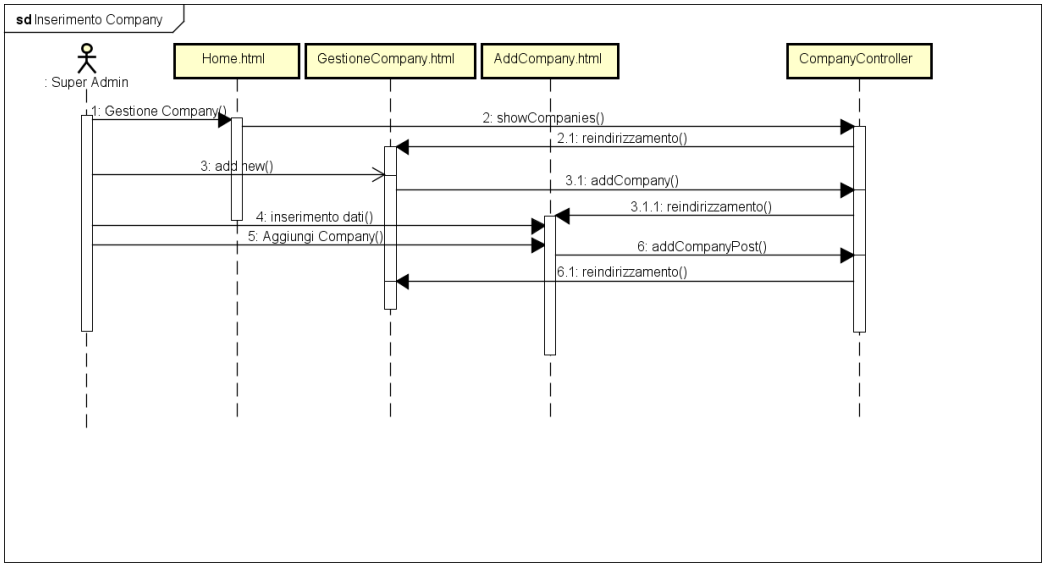

Figura 61: Inserimento Company

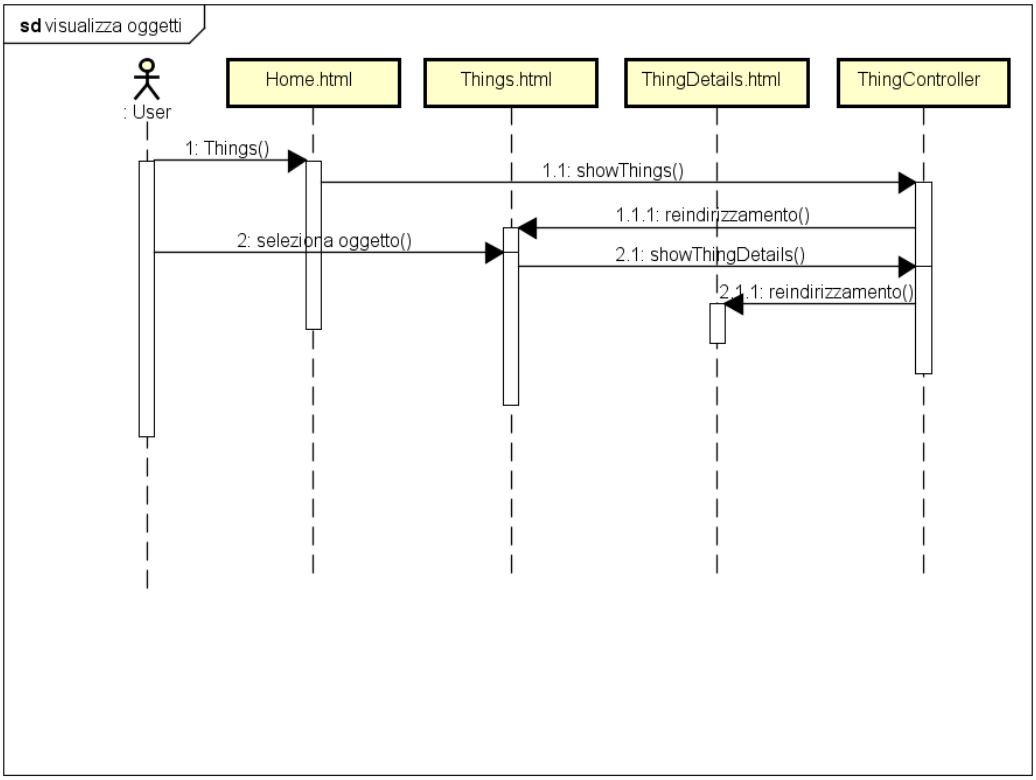

Figura 62: Visualizza Oggetti

4.2 Back end

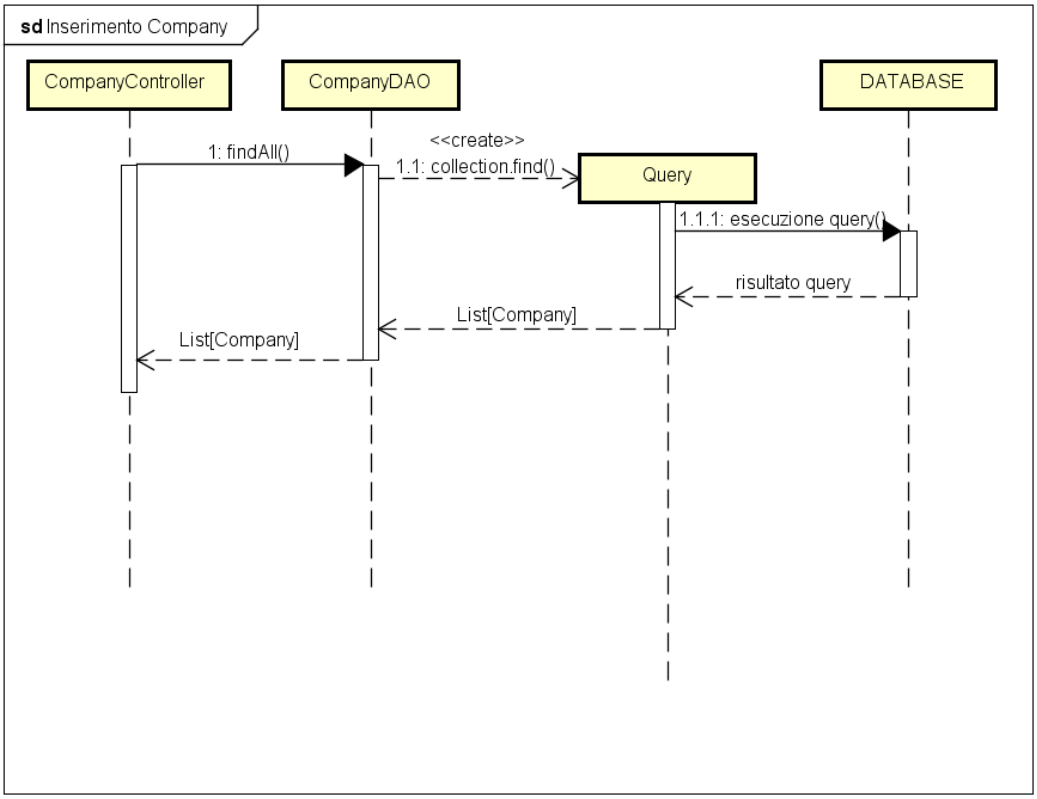

Figura 63: Inserimento Company

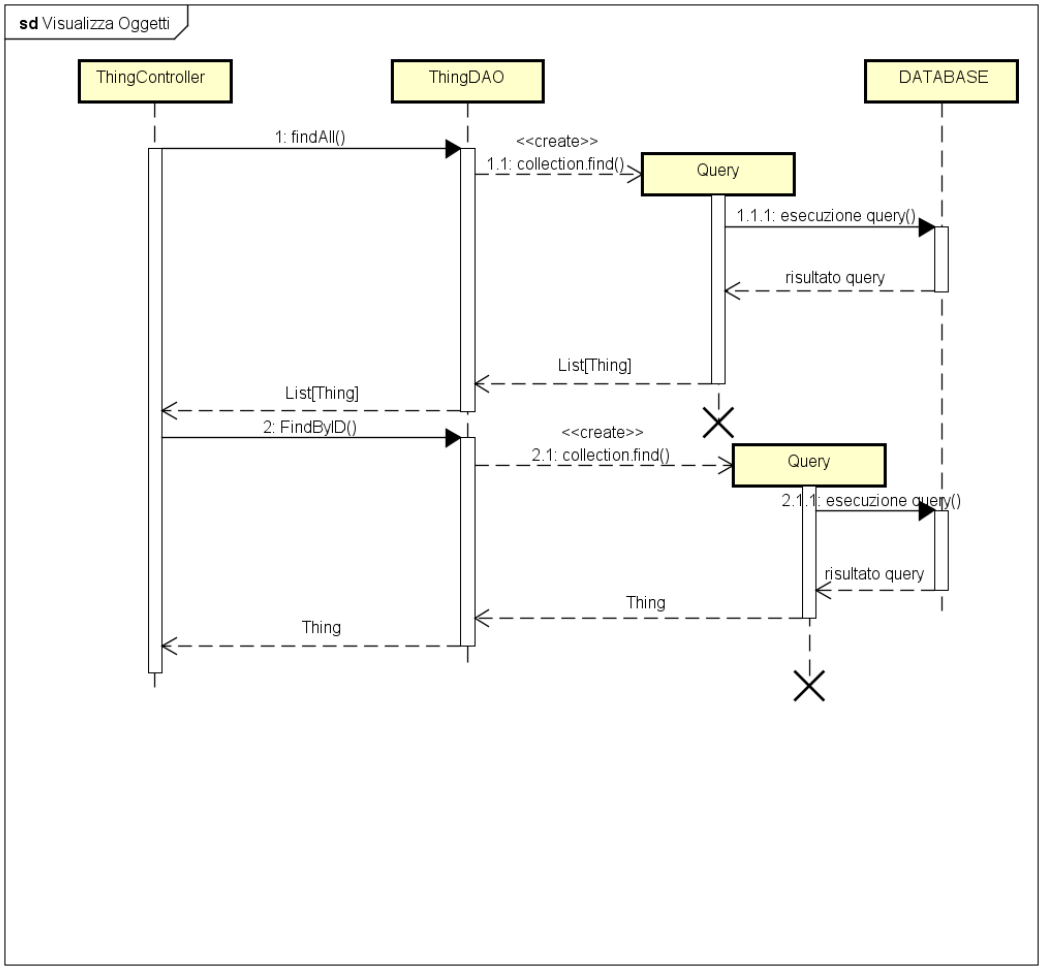

Figura 64: Visualizza Oggetti

5 Tracciamento

5.1 Tracciamento requisiti-componenti

Requisiti	Componenti
R0F1	app :: models :: User, app :: controllers :: shared :: account :: Account, app :: controllers :: shared :: authentication :: AuthController, app :: view :: shared :: authentication :: singIn.
R0F1.1	app :: models :: User, app :: controllers :: shared :: account :: Account, app :: controllers :: shared :: authentication :: AuthController, app :: view :: shared :: authentication :: singIn.
R0F1.1.1	app :: models :: User, app :: controllers :: shared :: account :: Account, app :: controllers :: shared :: authentication :: AuthController, app :: view :: shared :: authentication :: singIn.
R0F1.1.2	app :: models :: User, app :: controllers :: shared :: account :: Account, app :: controllers :: shared :: authentication :: AuthController, app :: view :: shared :: authentication :: singIn.
R0F1.1.3	app :: models :: User, app :: controllers :: shared :: account :: Account, app :: controllers :: shared :: authentication :: AuthController, app :: view :: shared :: authentication :: singIn.
R0F2	app :: models :: User, app :: controllers :: shared :: account :: Account, app :: controllers :: shared :: authentication :: AuthController, app :: view :: shared :: authentication :: singIn.
R1F2.1	app :: models :: User, app :: controllers :: shared :: account :: Account, app :: controllers :: shared :: authentication :: AuthController, app :: view :: shared :: authentication :: singIn.
R0F2.2	app :: models :: User, app :: controllers :: shared :: account :: Account, app :: controllers :: shared :: authentication :: AuthController, app :: view :: shared :: authentication :: singIn.
R0F2.2.1	app :: models :: User, app :: controllers :: shared :: account :: Account, app :: controllers :: shared :: authentication :: AuthController, app :: view :: shared :: authentication :: singIn.

R1F3	app :: models :: User, app :: controllers :: shared :: account :: Account, app :: view :: shared :: authentication :: passwordRecover.
R1F3.1	app :: models, app :: controllers :: shared :: account :: Account, app :: controllers :: shared :: authentication :: AuthController, app :: view :: shared :: authentication :: passwordRecover.
R1F3.1.1	app :: models :: User, app :: controllers :: shared :: account :: Account, app :: view :: shared :: authentication :: passwordRecover.
R1F3.2	app :: controllers :: shared :: account :: Account, app :: view :: shared :: authentication :: passwordRecover.
R1F3.3	app :: controllers :: shared :: account :: Account, app :: view :: shared :: authentication :: passwordReset.
R1F3.3.1	app :: controllers :: shared :: account :: Account, app :: view :: shared :: authentication :: passwordReset.
R0F3.4	app :: models :: daos :: company :: CompanyDAO, app :: models :: daos :: user :: UserDAO, app :: controllers :: shared :: authentication :: AuthController, app :: views :: shared :: authentication :: passwordRecover
R1F4	app :: controllers :: shared :: authentication :: AuthController, app :: views :: shared :: authentication :: singOut
R1F4.1	app :: controllers :: shared :: authentication :: AuthController.
R0F5	app :: models :: User, app :: models :: daos :: user :: UserDAO, app :: controllers :: shared :: account :: Account, app :: views :: shared :: account :: editAccount.
R2F5.1	app :: models :: User, app :: models :: daos :: user :: UserDAO, app :: controllers :: shared :: account :: Account, app :: views :: shared :: account :: editAccount.
R2F5.2	app :: models :: User, app :: models :: daos :: user :: UserDAO, app :: controllers :: shared :: account :: Account, app :: views :: shared :: account :: editAccount.

R0F5.3	app :: models :: User, app :: models :: daos :: user :: UserDAO, app :: controllers :: shared :: account :: Account, app :: views :: shared :: account :: editAccount.
R1F6	app :: models :: User, app :: models :: daos :: user :: UserDAO, app :: controllers :: shared :: account :: Account, app :: views :: shared :: account :: editAccount.
R0F7	app :: models :: User, app :: models :: Company, app :: model :: daos :: user :: Company, app :: model :: daos :: company :: Company, app :: controller :: user :: ThingTypeController, app :. view :: user :: thingType :: thingTypeDetails
R0F8	app :: models :: Company, app :: model :: daos :: company :: CompanyDAO, app :: controllers :: superAdmin :: CompanyController, app :: views :: superAdmin :: company :: companies app :: views :: superAdmin :: company :: addCompany app :: views :: superAdmin :: company :: editCompany
R0F8.1	app :: models :: Company, app :: model :: daos :: company :: CompanyDAO, app :: controllers :: superAdmin :: CompanyController, app :: views :: superAdmin :: company :: addCompany
R0F8.1.1	app :: models :: Company, app :: model :: daos :: company :: CompanyDAO, app :: controllers :: superAdmin :: CompanyController, app :: views :: superAdmin :: company :: addCompany
R0F8.1.2	app :: models :: Company, app :: model :: daos :: company :: CompanyDAO, app :: controllers :: superAdmin :: CompanyController, app :: views :: superAdmin :: company :: addCompany
R0F8.1.3	app :: models :: Company, app :: model :: daos :: company :: CompanyDAO, app :: controllers :: superAdmin :: CompanyController, app :: views :: superAdmin :: company :: addCompany
R0F8.1.4	app :: models :: Company, app :: model :: daos :: company :: CompanyDAO, app :: controllers :: superAdmin :: CompanyController, app :: views :: superAdmin :: company :: addCompany
R0F8.1.5	app :: models :: Company, app :: model :: daos :: company :: CompanyDAO, app :: controllers :: superAdmin :: CompanyController, app :: views :: superAdmin :: company :: addCompany

R0F8.1.6	app :: models :: Company, app :: model :: daos :: company :: CompanyDAO, app :: controllers :: superAdmin :: CompanyController, app :: views :: superAdmin :: company :: addCompany
R0F8.1.7	app :: models :: Company, app :: model :: daos :: company :: CompanyDAO, app :: controllers :: superAdmin :: CompanyController, app :: views :: superAdmin :: company :: addCompany
R0F8.1.8	app :: models :: Company, app :: model :: daos :: company :: CompanyDAO, app :: controllers :: superAdmin :: CompanyController, app :: views :: superAdmin :: company :: addCompany
R0F8.2	app :: models :: Thing, app :: models :: daos :: thing :: ThingDAO, app :: controllers :: superAdmin :: ThingController, app :: views :: superAdmin :: thing :: thing app :: views :: superAdmin :: thing :: addThing app :: views :: superAdmin :: thing :: editThing
R0F8.2.1	app :: models :: Thing, app :: models :: daos :: thing :: ThingDAO, app :: controllers :: superAdmin :: ThingController, app :: views :: superAdmin :: thing :: addThing
R0F8.2.1.1	app :: models :: Thing, app :: models :: daos :: thing :: ThingDAO, app :: controllers :: superAdmin :: ThingController, app :: views :: superAdmin :: thing :: addThing
R0F8.2.1.2	app :: models :: Thing, app :: models :: daos :: thing :: ThingDAO, app :: controllers :: superAdmin :: ThingController, app :: views :: superAdmin :: thing :: addThing
R0F8.2.1.3	app :: models :: Thing, app :: models :: daos :: thing :: ThingDAO, app :: controllers :: superAdmin :: ThingController, app :: views :: superAdmin :: thing :: addThing
R0F8.2.1.4	app :: models :: Thing, app :: models :: daos :: thing :: ThingDAO, app :: controllers :: superAdmin :: ThingController, app :: views :: superAdmin :: thing :: addThing
R0F8.2.1.5	app :: models :: Thing, app :: models :: daos :: thing :: ThingDAO, app :: controllers :: superAdmin :: ThingController, app :: views :: superAdmin :: thing :: addThing

R0F8.2.2	app :: models :: Thing, app :: models :: daos :: thing :: ThingDAO, app :: controllers :: superAdmin :: ThingController, app :: views :: superAdmin :: thing :: addThing
R0F8.2.3	app :: models :: Thing, app :: models :: daos :: thing :: ThingDAO, app :: controllers :: superAdmin :: ThingController, app :: views :: superAdmin :: thing :: editThing
R0F8.2.3.1	app :: models :: Thing, app :: models :: daos :: thing :: ThingDAO, app :: controllers :: superAdmin :: ThingController, app :: views :: superAdmin :: thing :: editThing
R0F8.2.3.2	app :: models :: Thing, app :: models :: daos :: thing :: ThingDAO, app :: controllers :: superAdmin :: ThingController, app :: views :: superAdmin :: thing :: editThing
R0F8.2.3.3	app :: models :: Thing, app :: models :: daos :: thing :: ThingDAO, app :: controllers :: superAdmin :: ThingController, app :: views :: superAdmin :: thing :: editThing
R0F8.2.3.4	app :: models :: Thing, app :: models :: daos :: thing :: ThingDAO, app :: controllers :: superAdmin :: ThingController, app :: views :: superAdmin :: thing :: editThing
R0F8.2.3.5	app :: models :: Thing, app :: models :: daos :: thing :: ThingDAO, app :: controllers :: superAdmin :: ThingController, app :: views :: superAdmin :: thing :: editThing
R0F8.2.4	app :: models :: Thing, app :: models :: daos :: thing :: ThingDAO, app :: controllers :: superAdmin :: ThingController, app :: views :: superAdmin :: thing :: thing
R0F8.2.4.1	app :: models :: Thing, app :: models :: daos :: thing :: ThingDAO, app :: controllers :: superAdmin :: ThingController, app :: views :: superAdmin :: thing :: thing
R0F8.2.5	app :: models :: Thing, app :: models :: daos :: thing :: ThingDAO, app :: controllers :: superAdmin :: ThingController, app :: views :: superAdmin :: thing :: addThing
R0F8.2.6	app :: models :: Thing, app :: models :: daos :: thing :: ThingDAO, app :: controllers :: superAdmin :: ThingController, app :: views :: superAdmin :: thing :: editThing

R1F8.3	app :: models :: Thing, app :: models :: daos :: thing :: ThingDAO, app :: controllers :: admin :: ThingController, app :: views :: admin :: thing :: thingDetails
R1F8.3.1	app :: models :: Thing, app :: models :: daos :: thing :: ThingDAO, app :: controllers :: admin :: ThingController, app :: views :: admin :: thing :: thingDetails
R1F8.3.1.1	app :: models :: Thing, app :: models :: daos :: thing :: ThingDAO, app :: controllers :: admin :: ThingController, app :: views :: admin :: thing :: thingDetails
R1F8.3.2	app :: models :: Thing, app :: models :: daos :: thing :: ThingDAO, app :: controllers :: admin :: ThingController, app :: views :: admin :: thing :: thingDetails
R0F8.4	app :: models :: User, app :: models :: daos :: company :: CompanyDAO, app :: models :: daos :: user :: UserDAO, app :: controllers :: superAdmin :: ThingController, app :: controllers :: admin :: ThingController, app :: views :: superAdmin :: user :: users app :: views :: admin
R0F8.4.1	app :: models :: User, app :: models :: daos :: user, app :: controllers :: superAdmin :: UserController, app :: controllers :: admin :: UserController, app :: views :: admin :: user :: addUser, app :: views :: admin :: user :: addUser
R0F8.4.1.1	app :: models :: User, app :: models :: daos :: user, app :: controllers :: superAdmin :: UserController, app :: controllers :: admin :: UserController, app :: views :: admin :: user :: addUser, app :: views :: admin :: user :: addUser
R0F8.4.1.2	app :: models :: User, app :: models :: daos :: user, app :: controllers :: superAdmin :: UserController, app :: controllers :: admin :: UserController, app :: views :: admin :: user :: addUser, app :: views :: admin :: user :: addUser
R0F8.4.1.3	app :: models :: User, app :: models :: daos :: user, app :: controllers :: superAdmin :: UserController, app :: controllers :: admin :: UserController, app :: views :: admin :: user :: addUser, app :: views :: admin :: user :: addUser

R0F8.4.1.4	app :: models :: User, app :: models :: daos :: user, app :: controllers :: superAdmin :: UserController, app :: controllers :: admin :: UserController, app :: views :: admin :: user :: addUser, app :: views :: admin :: user :: addUser
R0F8.4.1.5	app :: models :: User, app :: models :: daos :: user, app :: controllers :: superAdmin :: UserController, app :: controllers :: admin :: UserController, app :: views :: admin :: user :: addUser, app :: views :: admin :: user :: addUser
R0F8.4.1.6	app :: models :: User, app :: models :: daos :: user, app :: controllers :: superAdmin :: UserController, app :: controllers :: admin :: UserController, app :: views :: admin :: user :: addUser, app :: views :: admin :: user :: addUser
R0F8.4.2	app :: models :: User, app :: models :: daos :: user, app :: controllers :: superAdmin :: UserController, app :: controllers :: admin :: UserController, app :: views :: admin :: user :: editUser, app :: views :: admin :: user :: editUser
R0F8.4.2.1	models :: User, app :: models :: daos :: user, app :: controllers :: superAdmin :: UserController, app :: controllers :: admin :: UserController, app :: views :: admin :: user :: editUser, app :: views :: admin :: user :: editUser
R0F8.4.2.2	models :: User, app :: models :: daos :: user, app :: controllers :: superAdmin :: UserController, app :: controllers :: admin :: UserController, app :: views :: admin :: user :: editUser, app :: views :: admin :: user :: editUser
R0F8.4.2.3	models :: User, app :: models :: daos :: user, app :: controllers :: superAdmin :: UserController, app :: controllers :: admin :: UserController, app :: views :: admin :: user :: editUser, app :: views :: admin :: user :: editUser
R0F8.4.2.4	models :: User, app :: models :: daos :: user, app :: controllers :: superAdmin :: UserController, app :: controllers :: admin :: UserController, app :: views :: admin :: user :: editUser, app :: views :: admin :: user :: editUser
R0F8.4.3	models :: User, app :: models :: daos :: user, app :: controllers :: superAdmin :: UserController, app :: controllers :: admin :: UserController, app :: views :: admin :: user :: user, app :: views :: admin :: user :: user

R0F8.4.3.1	models :: User, app :: models :: daos :: user, app :: controllers :: superAdmin :: UserController, app :: controllers :: admin :: UserController, app :: views :: admin :: user :: user, app :: views :: admin :: user :: user
R0F8.4.3.2	models :: User, app :: models :: daos :: user, app :: controllers :: superAdmin :: UserController, app :: controllers :: admin :: UserController, app :: views :: admin :: user :: user, app :: views :: admin :: user :: user
R0F8.4.4	models :: User, app :: models :: daos :: user, app :: controllers :: superAdmin :: UserController, app :: controllers :: admin :: UserController, app :: views :: admin :: user :: user, app :: views :: admin :: user :: user
R1F8.4.5	models :: User, app :: models :: daos :: user, app :: controllers :: superAdmin :: UserController, app :: controllers :: admin :: UserController, app :: views :: admin :: user :: adduser, app :: views :: admin :: user :: addUser
R1F8.4.6	app :: models :: User, app :: models :: daos :: user, app :: controllers :: superAdmin :: UserController, app :: controllers :: admin :: UserController, app :: views :: admin :: user :: editUser, app :: views :: admin :: user :: editUser
R0F9	app :: models :: ThingType, app :: models :: daos :: thingType :: ThingTypeDAO, app :: controllers :: superAdmin :: ThingTypeController, app :: views :: superAdmin :: thingType :: addThingType
R0F9.1	app :: models :: ThingType, app :: models :: daos :: thingType :: ThingTypeDAO, app :: controllers :: superAdmin :: ThingTypeController, app :: views :: superAdmin :: thingType :: addThingType
R0F9.1.1 app :: models :: ThingType, app :: models :: daos :: thingType :: ThingTypeDAO, app :: controllers :: superAdmin :: ThingTypeController, app :: views :: superAdmin :: thingType :: addThingType	
R0F9.1.2	app :: models :: ThingType, app :: models :: daos :: thingType :: ThingTypeDAO, app :: controllers :: superAdmin :: ThingTypeController, app :: views :: superAdmin :: thingType :: addThingType

R0F9.1.2.1	app :: models :: ThingType, app :: models :: daos :: thingType :: ThingTypeDAO, app :: controllers :: superAdmin :: ThingTypeController, app :: views :: superAdmin :: thingType :: addThingType
R0F9.1.2.2	app :: models :: ThingType, app :: models :: daos :: thingType :: ThingTypeDAO, app :: controllers :: superAdmin :: ThingTypeController, app :: views :: superAdmin :: thingType :: addThingType
R0F9.2	app :: models :: ThingType, app :: models :: daos :: thingType :: ThingTypeDAO, app :: controllers :: superAdmin :: ThingTypeController, app :: views :: superAdmin :: thingType :: editThingType
R0F9.2.1	app :: models :: ThingType, app :: models :: daos :: thingType :: ThingTypeDAO, app :: controllers :: superAdmin :: ThingTypeController, app :: views :: superAdmin :: thingType :: editThingType
R0F9.2.2	app :: models :: ThingType, app :: models :: daos :: thingType :: ThingTypeDAO, app :: controllers :: superAdmin :: ThingTypeController, app :: views :: superAdmin :: thingType :: editThingType
R0F9.2.2.1	app :: models :: ThingType, app :: models :: daos :: thingType :: ThingTypeDAO, app :: controllers :: superAdmin :: ThingTypeController, app :: views :: superAdmin :: thingType :: editThingType
R0F9.2.2.2	app :: models :: ThingType, app :: models :: daos :: thingType :: ThingTypeDAO, app :: controllers :: superAdmin :: ThingTypeController, app :: views :: superAdmin :: thingType :: editThingType
R0F9.3	app :: models :: ThingType, app :: models :: daos :: thingType :: ThingTypeDAO, app :: controllers :: superAdmin :: ThingTypeController, app :: views :: superAdmin :: thingType :: addThingType
R0F9.4	app :: models :: ThingType, app :: models :: daos :: thingType :: ThingTypeDAO, app :: controllers :: superAdmin :: ThingTypeController, app :: views :: superAdmin :: thingType :: editThingType
R0F9.5	app :: models :: ThingType, app :: models :: daos :: thingType :: ThingTypeDAO, app :: controllers :: superAdmin :: ThingTypeController, app :: views :: superAdmin :: thingType :: thingType
R0F9.6	app :: models :: ThingType, app :: models :: daos :: thingType :: ThingTypeDAO, app :: controllers :: superAdmin :: ThingTypeController, app :: views :: superAdmin :: thingType :: thingType

R0F9.7	app :: models :: ThingType, app :: models :: daos :: thingType :: ThingTypeDAO, app :: controllers :: superAdmin :: ThingTypeController, app :: views :: superAdmin :: thingType :: thingType
R0F9.7.1	app :: models :: ThingType, app :: models :: daos :: thingType :: ThingTypeDAO, app :: controllers :: superAdmin :: ThingTypeController, app :: views :: superAdmin :: thingType :: thingType
R0F10	app :: controllers :: shared :: administrator :: EngineController, app :: views :: superAdmin :: engine :: engine, app :: views :: admin :: engine :: engine
R0F10.1	app :: controllers :: shared :: administrator :: EngineController, app :: views :: superAdmin :: engine :: engine, app :: views :: admin :: engine :: editFunction
R0F10.2	app :: controllers :: shared :: administrator :: EngineController, app :: views :: superAdmin :: engine :: engine, app :: views :: admin :: engine :: engine
R0F10.3	app :: models :. dao :: thingType :: ThingTypeDAO app :: controllers :: shared :: administrator :: EngineController, app :: views :: superAdmin :: engine :: engine, app :: views :: admin :: engine :: engine
R0F10.4	app :: models :. dao :: company :: CompanyDAO app :: controllers :: shared :: administrator :: EngineController, app :: views :: superAdmin :: engine :: engine, app :: views :: admin :: engine :: engine
R0F11	app :: models :: chart, app :: models :: dao :: thing :: ThingDAO, app :: controllers :: shared :: administrator :: EngineController, app :: controllers :: admin :: ChartController , app :: views :: admin :: chart :: newChart
R0F11.1	app :: models :: chart, app :: models :: dao :: thing :: ThingDAO, app :: controllers :: shared :: administrator :: EngineController, app :: controllers :: admin :: ChartController , app :: views :: admin :: chart :: newChart
R0F11.2	app :: models :: chart, app :: models :: dao :: thing :: ThingDAO, app :: controllers :: shared :: administrator :: EngineController, app :: controllers :: admin :: ChartController , app :: views :: admin :: chart :: newChart

R0F11.3	app :: models, app :: controllers :: shared :: administrator, app :: controllers :: admin, app :: views :: admin :: chart
R0F11.3.1	app :: models, app :: controllers :: shared :: administrator, app :: controllers :: admin, app :: views :: admin :: chart
R0F11.3.2	app :: models, app :: controllers :: shared :: administrator, app :: controllers :: admin, app :: views :: admin :: chart
R0F11.3.3	app :: models, app :: controllers :: shared :: administrator, app :: controllers :: admin, app :: views :: admin :: chart
R0F12	app :: models :: Thing, app :: models :: daos :: thing :: Thing, app :: controllers :: user :: ThingController app :: views :: user :: thing :: thing
R0F13	app :: models :: Thing, app :: models :: daos :: thing :: Thing, app :: controllers :: user :: ThingController app :: views :: user :: thing :: thing
R0F13.1	app :: models :: Thing, app :: models :: daos :: thing :: Thing, app :: controllers :: user :: ThingController app :: views :: user :: thing :: thing
R0F14	app :: models :: Thing, app :: models :: daos :: thing :: Thing, app :: controllers :: user :: ThingController app :: views :: user :: thing :: thing
R0F14.1	app :: models :: Thing, app :: models :: daos :: thing :: Thing, app :: controllers :: user :: ThingController app :: views :: user :: thing :: thingee
R0F15	app :: models, app :: models :: daos :: notification app :: controllers :: shared :: adminUser, app :: views :: shared :: adminUser :: notifications
R0F15.1 app :: models, app :: models :: daos :: notification app :: controllers :: shared :: adminUser, app :: views :: shared :: adminUser :: notifications	
R0F15.1.1	app :: models, app :: models :: daos :: notification app :: controllers :: shared :: adminUser, app :: views :: shared :: adminUser :: notifications
R0F15.1.2	app :: models, app :: models :: daos :: notification app :: controllers :: shared :: adminUser, app :: views :: shared :: adminUser :: notifications

R0F15.1.3	app :: models, app :: models :: daos :: notification app :: controllers :: shared :: adminUser, app :: views :: shared :: adminUser :: notifications
R0F15.1.4	app :: models, app :: models :: daos :: notification app :: controllers :: shared :: adminUser, app :: views :: shared :: adminUser :: notifications
R0F15.1.5	app :: models, app :: models :: daos :: notification app :: controllers :: shared :: adminUser, app :: views :: shared :: adminUser :: notifications
R0F15.1.6	app :: models, app :: models :: daos :: notification app :: controllers :: shared :: adminUser, app :: views :: shared :: adminUser :: notifications
R0F15.2	app :: models, app :: models :: daos :: notification app :: controllers :: shared :: adminUser, app :: views :: shared :: adminUser :: notifications
R0F15.2.1	app :: models, app :: models :: daos :: notification app :: controllers :: shared :: adminUser, app :: views :: shared :: adminUser :: notifications
R0F15.2.2	app :: models, app :: models :: daos :: notification app :: controllers :: shared :: adminUser, app :: views :: shared :: adminUser :: notifications
R0F15.2.3	app :: models, app :: models :: daos :: notification app :: controllers :: shared :: adminUser, app :: views :: shared :: adminUser :: notifications
R0F15.2.4	app :: models, app :: models :: daos :: notification app :: controllers :: shared :: adminUser, app :: views :: shared :: adminUser :: notifications
R0F16	app :: models, app :: models :: daos :: thing, app :: controllers :: shared ::authentication
R0F16.1	app :: models, app :: models :: daos :: thing, app :: controllers :: shared ::authentication
R0F16.2	app :: models, app :: models :: daos :: thing, app :: controllers :: shared ::authentication
R0F17	app :: models, app :: models :: daos :: thing, app :: controllers :: shared ::authentication
R0F18	app :: models, app :: models :: daos :: thing, app :: controllers :: shared ::authentication

R1F19	app :: models, app :: models :: daos :: thing, app :: controllers :: admin :: thing, app :: controllers :: admin :: thingType, app :: views :: admin :: thing :: thingthingTypeDetails, app :: views :: admin :: thingType
R0F20	app :: views :: SuperAdmin :: Company :: CompanyManagement, app :: views :: SuperAdmin :: Thing :: ThingsSuperAdminManagement, app :: views :: SuperAdmin :: Thing :: NewModelSuperAdminManagement, app :: views :: SuperAdmin :: Thing :: EditModelSuperAdminManagement, app :: views :: SuperAdmin :: Engine :: EngineSuperAdminManagement, app :: views :: SuperAdmin :: User :: UserSuperAdminManagement, app :: views :: Admin :: Thing :: ThingsManagementDetails, app :: views :: Admin :: ThingModel :: ThingsModelManagementDetails, app :: views :: Admin :: Chart :: ChartsModelsManagement, app :: views :: Admin :: Engine :: EngineManagement, app :: views :: Admin :: Account :: UserManagement, app :: views :: User :: Thing :: ThingDetails, app :: views :: User :: ModelThing :: ThingsModelDetails, app :: views :: Shared :: AdminUser :: Things, app :: views :: Shared :: AdminUser :: ThingsModels, app :: views :: Shared :: AdminUser :: Notifications, app :: views :: Shared :: Authentication :: index, app :: views :: Shared :: Authentication :: logout, app :: views :: Shared :: Authentication :: PasswordRecover, app :: views :: Shared :: Authentication :: ResetPassword, app :: views :: Shared :: Account :: account, app :: views :: Shared :: Layout :: header, app :: views :: Shared :: Layout :: footer, app :: views :: Shared :: Layout :: layout, app :: views :: Shared :: Layout :: nav, 4.4.26 app :: views :: Shared :: Errors :: 404, app :: views :: Shared :: Errors :: 502
R0F21	app :: views :: admin :: chart :: newChart
R0F22	app :: controllers :: shared ::administrator::EngineController
R0F23	app :: models :: daos :: chart :: ChartDAO; app :: models :: daos :: company :: CompanyDAO; app :: models :: daos :: thing :: ThingDAO; app :: models :: daos :: thingType :: ThingTypeDAO; app :: models :: daos :: user :: UserDAO; app :: models :: daos :: services :: user :: UserService.

R0F23.1	app :: models :: daos :: chart :: ChartDAO; app :: models :: daos :: company :: CompanyDAO; app :: models :: daos :: thing :: ThingDAO; app :: models :: daos :: thingType :: ThingTypeDAO; app :: models :: daos :: user :: UserDAO; app :: models :: daos :: services :: user :: UserService.
R0F23.2	app :: models :: daos :: chart :: ChartDAO; app :: models :: daos :: company :: CompanyDAO; app :: models :: daos :: thing :: ThingDAO; app :: models :: daos :: thingType :: ThingTypeDAO; app :: models :: daos :: user :: UserDAO; app :: models :: daos :: services :: user :: UserService.
R0F24	app :: models :: Roles; app :: controllers :: shared :: authentication :: AuthenticationController; app :: controllers :: shared :: account :: AccountController.
R0F25	app :: models :: ThingType; app :: models :: daos :: thingType :: ThingTypeDAO; app :: controllers :: admin :: ThingTypeController; app :: controllers :: user :: ThingTypeController; app :: views :: admin :: thingType :: thingTypeDetails.
R0F26	app :: models :: ThingType; app :: models :: daos :: thingType :: ThingTypeDAO; app :: models :: daos :: chart :: ChartDAO; app :: controllers :: admin :: ThingTypeController; app :: controllers :: user :: ThingTypeController; app :: views :: admin :: thingType :: thingTypeDetails.
R0F27	app :: models :: Thing; app :: models :: daos :: thing :: ThingDAO; app :: controllers :: admin :: ThingController; app :: views :: admin :: thing :: thingDetails.
R0F27.1	app :: models :: Thing; app :: models :: daos :: thing :: ThingDAO; app :: controllers :: admin :: ThingController; app :: views :: admin :: thing :: thingDetails.
R0F28	app :: models :: ThingType; app :: models :: daos :: thingType :: ThingTypeDAO; app :: controllers :: admin :: ThingTypeController; app :: views :: admin :: thingType :: thingTypeDetails.
R0F28.1	app :: models :: ThingType; app :: models :: daos :: thingType :: ThingTypeDAO; app :: controllers :: admin :: ThingTypeController; app :: views :: admin :: thingType :: thingTypeDetails.

R0F28.1.1	app :: models :: ThingType; app :: models :: daos :: thingType :: ThingTypeDAO; app :: controllers :: admin :: ThingTypeController; app :: views :: admin :: thingType :: thingTypeDetails.
R0F29	app :: models :: Company; app :: controllers :: daos :: company :: CompanyDAO; app :: controllers :: superAdmin :: CompanyController; app :: views :: superAdmin :: company :: companies; app :: views :: superAdmin :: company :: editCompany.
R0F29.1	app :: models :: Company; app :: controllers :: daos :: company :: CompanyDAO; app :: controllers :: superAdmin :: CompanyController; app :: views :: superAdmin :: company :: companies; app :: views :: superAdmin :: company :: editCompany.
R0F29.2	app :: models :: Company; app :: controllers :: dao :: company :: CompanyDAO; app :: controllers :: superAdmin :: CompanyController; app :: views :: superAdmin :: company :: companies; app :: views :: superAdmin :: company :: editCompany.
R0F29.3	app :: models :: Company; app :: controllers :: daos :: company :: CompanyDAO; app :: controllers :: superAdmin :: CompanyController; app :: views :: superAdmin :: company :: companies; app :: views :: superAdmin :: company :: editCompany.
R0F29.4	app :: models :: Company; app :: controllers :: daos :: company :: CompanyDAO; app :: controllers :: superAdmin :: CompanyController; app :: views :: superAdmin :: company :: companies; app :: views :: superAdmin :: company :: editCompany.
R0F29.5	app :: models :: Company; app :: controllers :: daos :: company :: CompanyDAO; app :: controllers :: superAdmin :: CompanyController; app :: views :: superAdmin :: company :: companies; app :: views :: superAdmin :: company :: editCompany.
R0F29.6	app :: models :: Company; app :: controllers :: daos :: company :: CompanyDAO; app :: controllers :: superAdmin :: CompanyController; app :: views :: superAdmin :: company :: companies; app :: views :: superAdmin :: company :: editCompany.
R0F29.7	app :: models :: Company; app :: controllers :: daos :: company :: CompanyDAO; app :: controllers :: superAdmin :: CompanyController; app :: views :: superAdmin :: company :: companies; app :: views :: superAdmin :: company :: editCompany.

R0F30	app :: models :: Company; app :: controllers :: daos :: company :: CompanyDAO; app :: controllers :: superAdmin :: CompanyController; app :: views :: superAdmin :: company :: companies.
R0F31	app :: models :: Company; app :: controllers :: daos :: company :: CompanyDAO; app :: controllers :: superAdmin :: CompanyController; app :: views :: superAdmin :: company :: companies.
R0F31.1	app :: models :: Company; app :: controllers :: daos :: company :: CompanyDAO; app :: controllers :: superAdmin :: CompanyController; app :: views :: superAdmin :: company :: companies.
R0F32	app :: models :: Company; app :: controllers :: daos :: company :: CompanyDAO; app :: controllers :: superAdmin :: CompanyController; app :: views :: superAdmin :: company :: companies; app :: views :: superAdmin :: company :: addCompany.
R0F33	app :: models :: Company; app :: controllers :: daos :: company :: CompanyDAO; app :: controllers :: superAdmin :: CompanyController; app :: views :: superAdmin :: company :: companies; app :: views :: superAdmin :: company :: editCompany.
R0F34	app :: models :: Thing; app :: models :: daos :: thing :: ThingDAO; app :: controllers :: admin :: ThingController; app :: controllers :: user :: ThingController; app :: views :: shared :: adminUser :: things.
R0F34.1	app :: models :: Thing; app :: models :: daos :: thing :: ThingDAO; app :: controllers :: admin :: ThingController; app :: controllers :: user :: ThingController; app :: views :: shared :: adminUser :: things.
R0F35	app :: models :: ThingType; app :: models :: daos :: thingType :: ThingTypeDAO; app :: controllers :: admin :: ThingTypeController; app :: controllers :: user :: ThingTypeController; app :: views :: shared :: adminUser :: thingsType.
R0F35.1	app :: models :: ThingType; app :: models :: daos :: thingType :: ThingTypeDAO; app :: controllers :: admin :: ThingTypeController; app :: controllers :: user :: ThingTypeController; app :: views :: shared :: adminUser :: thingsType.

R0F36	app :: models :: Notification; app :: controllers :: shared :: adminUser :: NotificationController; app :: views :: shared :: adminUser :: notifications.
R0F36.1	app :: models :: Notification; app :: controllers :: shared :: adminUser :: NotificationController; app :: views :: shared :: adminUser :: notifications.
R0F37	app :: models :: Company; app :: models :: daos :: company :: CompanyDAO; app :: controllers :: shared :: administrator :: EngineController; app :: views :: superAdmin :: engine :: engine.
R0F38	app :: models :: ThingType; app :: models :: daos :: chart :: ThingTypeDAO; app :: controllers :: user :: ThingTypeController; app :: views :: user :: thingType :: thingTypeDetails.
R0F38.1	app :: models :: ThingType; app :: models :: daos :: chart :: ThingTypeDAO; app :: controllers :: user :: ThingTypeController; app :: views :: user :: thingType :: thingTypeDetails.
R0F39	app :: models :: Charts; app :: models :: daos :: ChartDAO; app :: controllers :: shared :: administrator :: EngineController; app :: views :: admin :: engine :: editFunctions; app :: views :: admin :: engine :: editData.
R0F39.1	app :: models :: Charts; app :: models :: daos :: ChartDAO; app :: controllers :: shared :: administrator :: EngineController; app :: views :: admin :: engine :: editFunctions.
R0F39.2	app :: models :: Charts; app :: models :: daos :: ChartDAO; app :: controllers :: shared :: administrator :: EngineController; app :: views :: admin :: engine :: editFunctions; app :: views :: admin :: engine :: editData.
R0F39.3	app :: models :: Charts; app :: models :: daos :: ChartDAO; app :: controllers :: shared :: administrator :: EngineController; app :: views :: admin :: engine :: editData.
R0F40	app :: controllers :: shared :: administrator :: EngineAdministrator; app :: views :: SuperAdmin :: engine ::engine.

Tabella 2: Tracciamento requisiti-componenti.

5.2 Tracciamento componenti-requisiti

Componenti	Requisiti
Requisiti	
app :: models :: User	R0F1, R0F1.1, R0F1.1.1, R0F1.1.2, R0F1.1.3, R0F2, R0F2.1, R1F3, R1F3.1, R1F3.1.1, R0F5, R0F5.1, R0F5.2, R0F5.3, R1F6
app :: models :: Company	R0F8, R0F8.1, R0F8.1.1, R0F8.1.2, R0F8.1.3. R0F8.1.4, R0F8.1.5, R0F8.1.6, R0F8.1.7, R0F8.1.8
app :: models :: daos:: user :: UserDAO	R1F3.4, R0F5, R0F5.1, R0F5.2, R0F5.3, R1F6
app :: models :: daos:: company :: CompanyDAO	R1F3.4, R0F8, R0F8.1, R0F8.1.1, R0F8.1.2, R0F8.1.3. R0F8.1.4, R0F8.1.5, R0F8.1.6, R0F8.1.7, R0F8.1.8
app :: controllers :: shared :: account :: Account	R0F1, R0F1.1, R0F1.1.1, R0F1.1.2, R0F1.1.3, R0F2, R0F2.1, R1F3, R1F3.1, R1F3.1.1, R1F3.2, R1F3.3, R1F3.3.1, R0F5, R0F5.1, R0F5.2, R0F5.3, R1F6
app :: controllers :: shared :: authentication :: AuthController	R0F1, R0F1.1, R0F1.1.1, R0F1.1.2, R0F1.1.3, R0F2, R0F2.1, R1F3.4, R1F4, R1F4.1,
app :: controllers :: superAdmin :: CompanyController	R0F8, R0F8.1, R0F8.1.1, R0F8.1.2, R0F8.1.3. R0F8.1.4, R0F8.1.5, R0F8.1.6, R0F8.1.7, R0F8.1.8
app :: controllers :: shared :: administrator :: EngineController	R0F10, R0F10.1, R0F10.2, R0F10.3, R0F10.4, R0F11, R0F11.1, R0F11.2
app :: views :: superAdmin :: engine :: engine	R0F10, R0F10.1, R0F10.2, R0F10.3, R0F10.4
app :: views :: admin :: engine :: engine	R0F10, R0F10.2, R0F10.3, R0F10.4
app :: view :: shared :: authentication :: signIn	R0F1, R0F1.1, R0F1.1.1, R0F1.1.2, R0F1.1.3, R0F2, R0F2.1
app :: view :: shared :: account :: editAccount	R0F5,R0F5.1, R0F5.2, R0F5.3, R1F6
app :: view :: shared :: authentication :: signOut	R1F4
app :: view :: shared :: authentication :: passwordRecover	R1F3, R1F3.1, R1F3.1.1, R1F3.2, R1F3.4
app :: view :: shared :: authentication :: restPassword	R1F3.3, R1F3.3.1
app :: views :: superAdmin :: company :: companies	R0F8
app :: views :: superAdmin :: company :: addCompany	R0F8, R0F8.1, R0F8.1.1, R0F8.1.2, R0F8.1.3. R0F8.1.4, R0F8.1.5, R0F8.1.6, R0F8.1.7, R0F8.1.8
app :: views :: superAdmin :: company :: editCompany	R0F8

app :: models	R0F1, R0F1.1, R0F1.1.1, R0F1.1.2, R0F1.1.3, R0F2, R0F2.1, R1F3, R1F3.1, R1F3.1.1, R1F4, R0F5, R2F5.1, R2F5.2, R0F5.3, R0F5.4, R1F6, R0F7, R0F8, R0F8.1, R0F8.1.1, R0F8.1.2, R0F8.1.3, R0F8.1.4, R0F8.1.5, R0F8.1.6, R0F8.1.7, R0F8.1.8, R0F8.2, R0F8.2.1, R0F8.2.1.1, R0F8.2.1.2, R0F8.2.1.3, R0F8.2.1.4, R0F8.2.1.5, R0F8.2.2, R0F8.2.3, R0F8.2.3.1, R0F8.2.3.2, R0F8.2.3.3, R0F8.2.3.4, R0F8.2.4.1, R0F8.2.5, R0F8.2.6, R1F8.3, R1F8.3.1, R1F8.3.1.1, R1F8.3.2, R0F8.4, R0F8.4.1, R0F8.4.1.1, R0F8.4.1.2, R0F8.4.1.3, R0F8.4.1.4, R0F8.4.1.5, R0F8.4.1.6, R0F8.4.2, R0F8.4.2.1, R0F8.4.2.2, R0F8.4.2.3,R0F8.4.2.4, R0F8.4.3, R0F8.4.3.1, R0F8.4.3.2, R0F8.4.4, R1F8.4.5, R1F8.4.6, R0F9, R0F9.1.1, R0F9.1.2, R0F9.1.2.1, R0F9.1.2.2, R0F9.2, R0F9.2.1, R0F9.2.2, R0F9.2.2.1, R0F9.2.2.2, R0F9.3, R0F9.4, R0F9.5, R0F9.6, R0F9.7, R0F9.7.1, R0F11, R0F11.1, R0F11.2, R0F11.3, R0F11.3.1, R0F11.3.2, R0F11.3.3, R0F12, R0F13, R0F13.1, R0F14, R0F14.1, R0F15, R0F15.1, R0F15.1.1, R0F15.1.2, R0F15.1.3, R0F15.1.1.4, R0F15.1.1.5, R0F15.1.1.6, R0F15.2, R0F15.2.1, R0F15.2.2, R0F15.2.3, R0F15.2.4, R0F16, R0F16.1, R0F16.2, R0F17, R0F18, R1F19, R0F24, R0F25, R0F26, R0F27, R0F27.1, R0F28, R0F28.1, R0F28.1.1, R0F29, R0F29.1, R0F29.2, R0F29.3, R0F29.4, R0F29.5, R0F29.6, R0F29.7, R0F30, R0F31, R0F31.1, R0F32, R0F33
app :: models :: daos :: user	R0F5, R2F5.1, R2F5.2, R0F5.3, R0F5.4, R2F6, R0F8.4, R0F8.4.1, R0F8.4.1.1, R0F8.4.1.2, R0F8.4.1.3, R0F8.4.1.4, R0F8.4.1.5, R0F8.4.1.6, R0F8.4.2, R0F8.4.2.1, R0F8.4.2.2, R0F8.4.2.3,R0F8.4.2.4, R0F8.4.3, R0F8.4.3.1, R0F8.4.3.2, R0F8.4.4, R1F8.4.5, R1F8.4.6
app :: model :: daos :: company	R0F7, R0F8, R0F8.1, R0F8.1.1, R0F8.1.2, R0F8.1.3, R0F8.1.4, R0F8.1.5, R0F8.1.6, R0F8.1.7, R0F8.1.8, R0F8.4, R0F8.4.1, R0F8.4.1.1, R0F8.4.1.2, R0F8.4.1.3, R0F8.4.1.4, R0F8.4.1.5, R0F8.4.1.6, R0F8.4.2, R0F8.4.2.1, R0F8.4.2.2, R0F8.4.2.3,R0F8.4.2.4, R0F8.4.3, R0F8.4.3.1, R0F8.4.3.2, R0F8.4.4, R1F8.4.5, R1F8.4.6, R0F29, R0F29.1, R0F29.2, R0F29.3, R0F29.4, R0F29.5, R0F29.6, R0F29.7, R0F30, R0F31, R0F31.1, R0F32, R0F33

app :: models :: daos :: thing	R0F8.2, R0F8.2.1, R0F8.2.1.1, R0F8.2.1.2, R0F8.2.1.3, R0F8.2.1.4, R0F8.2.1.5, R0F8.2.2, R0F8.2.3, R0F8.2.3.1, R0F8.2.3.2, R0F8.2.3.3, R0F8.2.3.4, R0F8.2.4.1, R0F8.2.5, R0F8.2.6, R1F8.3, R1F8.3.1, R1F8.3.1.1, R1F8.3.2, R0F9, R0F9.1.1, R0F9.1.2, R0F9.1.2.1, R0F9.1.2.2, R0F9.2, R0F9.2.1, R0F9.2.2, R0F9.2.2.1, R0F9.2.2.2, R0F9.3, R0F9.4, R0F9.5, R0F9.6, R0F9.7, R0F9.7.1, R0F12, R0F13, R0F13.1, R0F14, R0F14.1, R0F16, R0F16.1, R0F16.2, R0F17, R0F18, R1F19, R0F27, R0F27.1
app :: models :: daos	R0F23, R0F23.1, R0F23.2, R0F28, R0F28.1, R0F28.1.1
app :: models :: daos :: chart	R0F26
app :: models :: daos :: thingType	R0F25, R0F26
app :: models :: daos :: notification	R0F15, R0F15.1, R0F15.1.1, R0F15.1.2, R0F15.1.3, R0F15.1.1.4, R0F15.1.1.5, R0F15.1.1.6, R0F15.2, R0F15.2.1, R0F15.2.2, R0F15.2.3, R0F15.2.4
app :: controllers :: shared :: account	R0F1, R0F1.1, R0F1.1.1, R0F1.1.2, R0F1.1.3, R0F2, R0F2.1, R0F2.2, R0F2.2.1, R1F3, R1F3.1, R1F3.1.1, R1F3.2, R1F3.3, R0F5, R2F5.1, R2F5.2, R0F5.3, R0F5.4, R1F6, R0F24
app :: controllers :: shared :: adminUser	R0F15, R0F15.1, R0F15.1.1, R0F15.1.2, R0F15.1.3, R0F15.1.1.4, R0F15.1.1.5, R0F15.1.1.6, R0F15.2, R0F15.2.1, R0F15.2.2, R0F15.2.3, R0F15.2.4
app :: controllers :: shared :: authentication	R0F1, R0F1.1, R0F1.1.1, R0F1.1.2, R0F1.1.3, R0F2, R0F2.1, R0F2.2, R0F2.2.1, R1F3, R1F3.1, R1F4, R1F4.1,R0F16, R0F16.1, R0F16.2, R0F17, R0F18, R0F24
app :: controllers :: shared :: administrator	R0F10, R0F10.1, R0F10.2, R0F10.3, R0F11, R0F11.1, R0F11.2, R0F11.3, R0F11.3.1, R0F11.3.2, R0F11.3.3, R0F22, R0F24

app :: controllers :: superAdmin	R0F7, R0F8, R0F8.1, R0F8.1.1, R0F8.1.2, R0F8.1.3, R0F8.1.4, R0F8.1.5, R0F8.1.6, R0F8.1.7, R0F8.1.8, R0F8.2, R0F8.2.1, R0F8.2.1.1, R0F8.2.1.2, R0F8.2.1.3, R0F8.2.1.4, R0F8.2.1.5, R0F8.2.2, R0F8.2.3, R0F8.2.3.1, R0F8.2.3.2, R0F8.2.3.3, R0F8.2.3.4, R0F8.2.4.1, R0F8.2.5, R0F8.2.6, R0F8.4, R0F8.4.1, R0F8.4.1.1, R0F8.4.1.2, R0F8.4.1.3, R0F8.4.1.4, R0F8.4.1.5, R0F8.4.1.6, R0F8.4.2, R0F8.4.2.1, R0F8.4.2.2, R0F8.4.2.3,R0F8.4.2.4, R0F8.4.3, R0F8.4.3.1, R0F8.4.3.2, R0F8.4.4, R1F8.4.5, R1F8.4.6, R0F9, R0F9.1.1, R0F9.1.2, R0F9.1.2.1, R0F9.1.2.2, R0F9.2, R0F9.2.1, R0F9.2.2, R0F9.2.2.1, R0F9.2.2.2, R0F9.3, R0F9.4, R0F9.5, R0F9.6, R0F9.7, R0F9.7.1, R0F29, R0F29.1, R0F29.2, R0F29.3, R0F29.4, R0F29.5, R0F29.6, R0F29.7, R0F30, R0F31, R0F31.1, R0F32, R0F33
app :: controllers :: user	R0F12, R0F13, R0F13.1, R0F14, R0F14.1, R0F25, R0F26
app :: controllers :: admin	R1F8.3, R1F8.3.1, R1F8.3.1.1, R1F8.3.2, R0F8.4, R0F8.4.1, R0F8.4.1.1, R0F8.4.1.2, R0F8.4.1.3, R0F8.4.1.4, R0F8.4.1.5, R0F8.4.1.6, R0F8.4.2, R0F8.4.2.1, R0F8.4.2.2, R0F8.4.2.3,R0F8.4.2.4, R0F8.4.3, R0F8.4.3.1, R0F8.4.3.2, R0F8.4.4, R1F8.4.5, R1F8.4.6, R0F11, R0F11.1, R0F11.2, R0F11.3, R0F11.3.1, R0F11.3.2, R0F11.3.3, R0F12, R0F13, R0F13.1, R0F14, R0F14.1, R0F25, R0F26, R0F27, R0F27.1, R0F28, R0F28.1, R0F28.1.1
app :: controllers :: admin :: thing	R1F19
app :: controllers :: admin :: thingType	R1F19, R0F25, R0F26
app :: view :: shared :: authentication	R0F1, R0F1.1, R0F1.1.1, R0F1.1.2, R0F1.1.3, R0F2, R0F2.1, R0F2.2, R0F2.2.1, R1F3, R1F3.1, R1F3.1.1, R1F3.2, R1F3.3, R1F4
app :: view :: shared :: notification	R0F15, R0F15.1, R0F15.1.1, R0F15.1.2, R0F15.1.3, R0F15.1.1.4, R0F15.1.1.5, R0F15.1.1.6, R0F15.2, R0F15.2.1, R0F15.2.2, R0F15.2.3, R0F15.2.4
app :: view :: shared :: account	R0F5, R2F5.1, R2F5.2, R0F5.3, R0F5.4, R1F6

app :: view :: superAdmin	R0F7, R0F8, R0F8.1, R0F8.1.1, R0F8.1.2, R0F8.1.3, R0F8.1.4, R0F8.1.5, R0F8.1.6, R0F8.1.7, R0F8.1.8, R0F8.2, R0F8.2.1, R0F8.2.1.1, R0F8.2.1.2, R0F8.2.1.3, R0F8.2.1.4, R0F8.2.1.5, R0F8.2.2, R0F8.2.3, R0F8.2.3.1, R0F8.2.3.2, R0F8.2.3.3, R0F8.2.3.4, R0F8.2.4.1, R0F8.2.5, R0F8.2.6, R0F8.4, R0F8.4.1, R0F8.4.1.1, R0F8.4.1.2, R0F8.4.1.3, R0F8.4.1.4, R0F8.4.1.5, R0F8.4.1.6, R0F8.4.2, R0F8.4.2.1, R0F8.4.2.2, R0F8.4.2.3,R0F8.4.2.4, R0F8.4.3, R0F8.4.3.1, R0F8.4.3.2, R0F8.4.4, R1F8.4.5, R1F8.4.6
app :: views :: superAdmin :: thingType	R0F9, R0F9.1.1, R0F9.1.2, R0F9.1.2.1, R0F9.1.2.2, R0F9.2, R0F9.2.1, R0F9.2.2, R0F9.2.2.1, R0F9.2.2.2, R0F9.3, R0F9.4. R0F9.5, R0F9.6, R0F9.7, R0F9.7.1
app :: views :: superAdmin :: company	R0F29, R0F29.1, R0F29.2, R0F29.3, R0F29.4, R0F29.5, R0F29.6, R0F29.7, R0F30, R0F31, R0F31.1, R0F32, R0F33
app :: view :: admin	R1F8.3, R1F8.3.1, R1F8.3.1.1, R1F8.3.2, R0F8.4, R0F8.4.1, R0F8.4.1.1, R0F8.4.1.2, R0F8.4.1.3, R0F8.4.1.4, R0F8.4.1.5, R0F8.4.1.6, R0F8.4.2, R0F8.4.2.1, R0F8.4.2.2, R0F8.4.2.3,R0F8.4.2.4, R0F8.4.3, R0F8.4.3.1, R0F8.4.3.2, R0F8.4.4, R1F8.4.5, R1F8.4.6, R0F27, R0F27.1
app :: view :: superAdmin :: engine	R0F10, R0F10.1, R0F10.2, R0F10.3
app :: view :: admin :: engine	R0F10, R0F10.1, R0F10.2, R0F10.3
app :: view :: admin :: chart	R0F11, R0F11.1, R0F11.2, R0F11.3, R0F11.3.1, R0F11.3.2, R0F11.3.3, R0F21
app :: view :: admin :: thing :: thingTypeDetails	R1F19
app :: view :: admin :: thingType	R1F19, R0F28, R0F28.1, R0F28.1.1
app :: view :: user :: thing	R0F12, R0F13, R0F13.1, R0F14, R0F14.1
app :: models :: chart	R0F11, R0F11.1, R0F11.2
app :: models :: dao :: thing :: ThingDAO	R0F11, R0F11.1, R0F11.2
app :: controllers :: admin :: ChartController	R0F11, R0F11.1, R0F11.2
app :: views :: admin :: chart :: newChart	R0F11, R0F11.1, R0F11.2

Tabella 3: Tracciamento componenti-requisiti.