|  |
| --- |
| << abstract>>  User |
| - username : String  - password : String  - ownedCalendars: List<String>  - viewableCalendars: List<String>  - editableCalendars: List<String> |
| + User(username : String, password : String)  + getUsername() : String  + getPassword() : String  + setUsername(username : String) : void  + setPassword(password : String) : void  + authenticate(username : String , password : String) : Boolean  + toString() : String  + *isAdmin(): boolean*  + ownsCalendar (calendarID : String) : boolean  + getOwnedCalendarsID() : List<String>  + getEditableCalendarsID() : List<String>  + getViewableCalendarsID() : List<String>  + canEditCalendar(calendarID : String) : boolean  + canViewCalendar(String calendarID) : boolean  + clearSharedCalendars() : void  + editSharingPermission(calendarID : String, editAccess : boolean) : void  + addOwnedCalendar(calendarID : String) : void  + removeCalendar(calendarID : String) : void |

UML Model

Entities:

|  |
| --- |
| AdminUser |
| + AdminUser(username : String, password : String)  + AdminUser()  + isAdmin() : boolean |

|  |
| --- |
| RegularUser |
| - isBanned : boolean |
| + RegularUser(username : String, password : String)  + RegularUser()  + setIsBanned(banned: boolean) : void  + getIsBanned() : boolean  + isAdmin() : boolean |

|  |
| --- |
| Comment |
| - text : String  - username : String  - id : String  - posted : LocalDateTime  - updated : LocalDateTime  - replies : List<Comment> |
| + Comment(text : String, username : String)  + Comment()  + getText() : String  + setText(text : String) : void  + toString() : String  - toNestedString() : String  + getUsername() : String  + setUsername(username : String) : void  + addReply(c : Comment) : void  + removeReply(c : Comment) : void  + getReplies() : List<Comment>  + getId() : String  + setId(id : String) : void  + containsReplyId(id : String) : boolean |

|  |
| --- |
| <<abstract>>  NameDuplicatable |
| + assignID(name : String, ids : Iterable<String>, username : String) |

|  |
| --- |
| Calendar |
| - calendarID : String  - name : String  - description : String |
| + Calendar(name : String, description : String)  + setName(name : String) : void  + setDescription(description String) : void  + getName() : String  + getDescription() : String  + getCalendarID () : String  + setCalendarID(CalendarID : String) : void  + toString() : String |

|  |
| --- |
| TimeParser |
| + parseTime(time : String) : LocalDateTime  - YYYYMMDDHHMM(time : String) : LocalDateTime  - DDHHMM(time : String) : LocalDateTime  - MMDDHHMM(time : String) : LocalDateTime  - YYYYMMDDHH(time : String) : LocalDateTime  - YYYYMMDD(time : String) : LocalDateTime  - MMDD(time : String) : LocalDateTime  - DD(time : String) : LocalDateTime  - intSlice(text : String, i : int, j : int) : int  - tomorrow() : LocalDateTime  - nextDat(time : String) : LocalDateTime |

|  |
| --- |
| <<abstract>>  Plan |
| - planID : String  - name : String  - description : String  - subplans : List<Plan>  - endTime : LocalDateTime |
| + Plan(name : String, description : String)  + getName() : String  + getDescription() : String  + setName(newName : String) : void  + setDescription(newDescription : String) : void  + getPlanID() : String  + setPlanID(planID String) : void  + getAllSubPlans() : List<Plan>  + getSubplan(subPlanID : String) : Plan  + isChildOf(plan : Plan) : Boolean  + addSubPlan(child : PLan) : void  + removeSubPlan(child : Plan) : void  *+ isTask() : boolean*  + toStringSubplan() : String  + getEndTime() : LocalDateTime  + setEndTime(endTime : LocalDateTime) : void  + compareTo(other Plan) : int |

|  |
| --- |
| <<abstract>>  NameDuplicatable |
| + assignID(name : String, ids : Iterable<String>, username : String) |

|  |
| --- |
| Label |
| - name : String |
| + Label(name : String, isThematic : boolean):  + getName() : String  + setName(name : String) : void  + toString() : String |

|  |
| --- |
| <<enumeartion>>  ProgressLabels |
| IN\_PROGRESS  COMPLETE  NOT\_STARTED  STALLED |

|  |
| --- |
| History |
| - action : Action(enum)  - username : String  - time : LocalDateTime |
| + History(username : String, action : String)  + getAction() : Action(enum)  + getUsername() : String  + getTime() : LocalDateTime  + toString() : String |

|  |
| --- |
| Event |
| - startTime : LocalDateTime |
| + Event(name : String, description : String)  + setStartTime(startTime : LocalDateTime) :  + getStartTime() : LcoalDateTime  + toString : String  + isTask() : boolean |

|  |
| --- |
| Task |
| + Task(name : String, description : String)  + toString() : String  + isTask() : boolean |

|  |
| --- |
| <<abstract>>  Saveable |
| - saver : InterfaceSaver |
| + setSaver(saver : InterfaceSaver) : void  + setAll() : void  # getSaver() : InterfaceSaver  + *save()* : void  + *load() : void*  + makechange() : void |

|  |
| --- |
| CalendarManager |
| - calendars : Map<String, Calendar>  - currCalendarID : String |
| + CalendarManager()  + getCalendar(calendarID : String) : Calendar  + createCalendar(name : String, description : String, username : String) : String  + deleteCalendar(calendarID : String) : String  + changeCalendarName(newName : String, calendarID : String) : void  + changeCalendarDescription(description : String, calendarID : String) : void  + setCurrCalendarID(currCalendarID : String) : boolean  + viewAllOwnedCalendars(ownedCalendarIDs : List<String>) : String  + viewSharedCalendars(editableCalednarsIDs : List<String>, viewabelCalendarIDs : List<String>) : String  + containCalendar(calendarID : String) : boolean  + deleteCalendars(calendarIDs : List<String>) : void  + getCurrCalendarID() : String  + getCalendarName(calendarID : String) : String  + getCalendarDescription(calendarID : String) : Strin  + save() : void  + load() : void  - viewEditableCalendars(editableCalendarIDs : List<String>) : String  - viewViewableCalendars(viewableCalendars : List<String>) : String  - addCalendar(c : Calendar) : void |

Use Case Class:

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| --- |
| LoggingManager |
| - currUser : User |
| + getCurrUsername() : String  + getCUrrPassword() : String  + loggedOut() : boolean  + userLoggedIn() : boolean  + adminUserLoggedIn() : boolean  + logIn(user : User) : String  + logOut() : String |

|  |
| --- |
| HistoryManager |
| - histories : Map<LocalDateTime, History> |
| + HistoryManager()  + addHistory(username : String, action : String) : void  + getHistories() : String  + getHistoriesByUser(username : String) : String  + clearHistoriesByUser(username) : void  + handleChangeUsername(username : String, newUsername : String) : void  + getHistoryPropertyAsList(username : String, property : String) : List<String>  + save() : void  + load() :void  - getHistoriesByUserAsList(username : String) : List<History> |

|  |
| --- |
| UserManager |
| - users : Map<String, User> |
| + getUser(username : String) : User  + setPassword(username : String, newPassword : String) : void  + setUsernam(username : String, newUsername : String) : void  + getAllRegularUsernames() : List<String>  + getAllUsernames() : List<String>  + authenticateUser(username : String, password : String) : User  + isBanned(username : String) : Boolean  + createUser(username : String, password : String) : void  + createAdminUser(username : String, password : String) : void  + deleteUser(username : String, deleteSelf : boolean) : void  + banUser(username : String) : void  + unbanUser(username : String) : void  + addCalendar(calendarID : String, username : String) : void  + deleteCalendar(calendarID : String, username : String) : void  + clearCalendars(username : String) : void  + shareCalendar(calendarID : String, targetUser: String, calOwner: String, access : boolean)  + deleteOrRemoveAccess(calendarID : String, username : String) : void  + getOwnedCalendars(username : String) : List<String>  + getEditableCalendars(username : String) : List<String>  + getViewableCalendars(username : String) : List<String>  + validateCalendarForEditAccess(username : String, calendarID : String) : boolean  + save() : void  + load() : void  - addUser(newUser : User) : void |

|  |
| --- |
| CommentManager |
| - comments : Map<String, Map<String, Comment>> |
| + addReply(planID : String, commentID : String, username : String, text : String) : void  + addComment(planID : String, username : String, text : String) : String  + editComment(planID : String, commentID : String, text : editComment) : void  + deleteComment(planID : String, commentID : String) : void  + clearComments(planID : String) : void  + getComment(planID : String, commentID : String) : Comment  + getComments(planID : String) : Map<String, Comment>  + toString(planID : String) : String  + handleClearUserPlans(planIDs : List<String>) : void  + handleNewPlan(planID : String) : void  + handleDeletePlan(planID : String) : void  + handleSetPlanName(oldID : String, newID : String) : void  + save() : void  + load() : void  + containsPlanID(planID : String)  - getAllReplyIDs(planID : String, commentID : String) : List<String> |

|  |
| --- |
| PlanManager |
| - allPlans : Map<String, List<Plan>>  - timeParser : TimeParser  - currPlanID : String  - planDisplayer |
| + PlanManager()  + getAllPlanIDs(calendarID : String) : List<String>  + handlecreateCalendar(calendarID : String) : void  + createTask(name : String, description : String, calendarID : String) : String  + createEvent(name : String, description : String, calendarID : String) : String  + getAllPlans(calendarID String) : List<Plan>  + getPlan(planID : String, calendarID : String) : Plan  + getAllPlanWithPlanIDs(planIDs : Set<String>, calendarID : String) : List<Plan>  + removePlan(planID : String, calendarId : String) : void  + changePlanName(name : String, planID : String, calendarID : String) : String  + changePlanDescription(description : String, planID : String, calendarID : String) : void  + nest(parentPlanID : String, subPlanID : String, calendarID : String) : void  + unnest(parentID : String, subPlanID : String, calendarID : String) : void  + clearTasks(calendarID : String) : void  + clearEvents(calendarID : String) : void  + clearAllPlans(calendarID : String) : void  + handleclearCalendar(calendarID : String) : void  + setCurrPlanId(planID : String, calendarID : String) : void  + getCurrPlanID() : String  + isEvent(planID : String, calendarID : String) : boolean  + setTime(eventID : String, startTime : String, endTime : String, calendarID : String) : void  + setDeadline(taskID : String, deadline : String, calendarID : String) : void  + viewSchedule(calendarID : String) : String  + viewScheduleByLabel(planIDs : Set<String> , String : calendarID) : String  + viewUpcoming(calendarId : String) : String  + viewAllEvents(calendarID : String) : String  + viewAllTasks(calendarID : String) : String  + save() : void  + load() : void  - setDisplayer(PlanDisplayer planDisplayer) : void |

|  |
| --- |
| <<abstract>>  Saveable |
| - saver : InterfaceSaver |
| + setSaver(saver : InterfaceSaver) : void  + setAll() : void  # getSaver() : InterfaceSaver  + *save()* : void  + *load() : void*  + makechange() : void |

|  |
| --- |
| LabelManager |
| - thematicLabels : Map<String, Map<String, Label>>  - progressLabels : Map<String, Label.ProgressLabels> |
| + addThematicLabel(labelName : String, planID : String) : void  + setProgressLabel(labelName : Label.ProgressLabels, planID : String) : void  + setThematicLabel(labelName1 : String, labelName2 : String, planID : String) : void  + deleteThematicLabel(labelName : String, planID : String)  + clearLabels(planID : String) : void  + toString(planID : String) : String  + handleClearUserPlans(planIDs : List<String> ) : void  + handleNewPlan(planID : String, newEvent : boolean) : void  + handleDeletePlan(planID : String) : void  + handleSetPlanName(oldID : String, newID : String) : void  + containsPlanID(planID : String) : boolean  + getPlanIDsWithLabels(labels : Set<String>) : Set<String>  + save() : void  + load() : void  - getThematicLabel(planID : String, labelName : String) : Label  - getThematicLabels(planID : String) : Map<String, Label> |

|  |
| --- |
| <<Interface>>  PlanDisplayer |
| + display(plans : List<Plan>) : String |

|  |
| --- |
| AllTasksPlanDisplayer |
| + display(plans : List<Plan>) : String |

|  |
| --- |
| AllEventsPlanDisplayer |
| + display(plans : List<Plan>) : String |

|  |
| --- |
| AllUpComingPlansPlanDisplayer |
| + display(plans : List<Plan>) : String |

|  |
| --- |
| AllPlansPlanDisplayer |
| + display(plans : List<Plan>) : String |

|  |
| --- |
| <<enumeration>> MenuState |
| LOG\_OUT  USER\_MENU  ADMIN\_USER\_MENU EDIT\_CALENDAR EDIT\_LABEL\_EVENT EDIT\_LABEL\_TASK EDIT\_COMMENT |

Controller:

|  |
| --- |
| <<abstract>>  ShellMenu |
| + commands : Map<String, Runnable>  - menu State : MenuState |
| # setMenuState(menuState : MenuState) : void  # getMenuState() : MenuState  # handelInput(data : ShellData, input : String) : void  *+ run(presenter : ShellPresenter) : void* |

|  |
| --- |
| ShellController |
| - cals : CalenarManager  - plans : PlanManager  - labs : LabelManager  - comms : CommentManager  - hists : HistoryManager  - users : UserManager  - logs : LoggingManager  - s : InterfaceSaver  - p : ShellPresenter  - menus : Map<MenuState, ShellMenu> |
| + ShellController()  + run() : void  - load() : void |

|  |
| --- |
| ShellMenuLoggedOut |
| + ShellMenuLoggedOut(p : ShellPresenter, users : UserManager, logs : LoggingManager, hists : HistoryManager)  + run(p : ShellPresenter) : void  - logIn(p : ShellPresenter, users : UserManager, logs : LoggingManager, hists : HistoryManager): void  - newUser(p : ShellPresenter, users : UserManager, hists : HistoryManager) : void |

|  |
| --- |
| ShellMenuEditCalendar |
| +ShellMenuEditCalendar(p : ShellPresenter, plans : PlanManager, cals : CalendarManager, users : UserManager, logs : LoggingManager, labs : LabelManager, hists : HistoryManager, comms : CommentManager)  + run(p : ShellPresenter) : void  - back(logs : LoggingManager) : void  - viewSchedule(p : ShellPresenter, plans : PlanManager) : void  - viewScheduleByLabel(p : ShellPresenter, plans : PlanManager, labs : LabelManager) : void  - viewUpcoming(p : ShellPresenter, plans : PlanManager) : void  - createCalendar(p : ShellPresenter, cals : CalendarManager, users : UserManager, logs : LoggingManager, plans : PlanManager, hists : HistoryManager ) : void  - deleteCalendar( p : ShellPresenter, cals : CalendarManager, users : UserManager, plans : PlanManager, labs : LabelManager, logs : LoggingManager, hists : HistoryManager, comms : CommentManager) : void  - clearCalendars( p : ShellPresenter, cals : CalendarManager, users : UserManager, plans : PlanManager, logs : LoggingManager, labs : LabelManager, hists : HistoryManager, comms : CommentManager): void  -editDescription(p : ShellPresenter, users : UserManager, cals : CalendarManager, hists : HistoryManager. Logs : LoggingManager) : void  - editName(p : ShellPresenter, users : UserManager, cals : CalendarManager, hists : HistoryManager, logs : LoggingManager) : void  - editSharePermission(p : ShellPresenter, users : UserManager, logs : LoggingManager) : void  - viewAllCalednars(p : ShellPresenter, cals : CalendarManager, users : UserManager, logs : LoggingManager) : void  - viewSharedCalendars(p : ShellPresenter, cals : CalendarManager, users : UserManager, logs : LoggingManager) : void  - editPlans(p : ShellPresenter, cals : CalendarManager, users : UserManager, logs : loggingManager) : void |

|  |
| --- |
| ShellMenuEditPlan |
| + ShellMenuEditPlan(p : ShellPresenter, cals : CalendarManager, plans : PlanManager, labs : LabelManager, comms : CommentManager)  + run( p : ShellPresenter) : void  - back() : void  - addEvent(p : ShellPresenter, cals : CalendarManager, plans : PlanManager, labs : LabelManager, comms : CommentManager ) : void  - addTask(p : ShellPresenter, cals : CalendarManager, plans : PlanManager, labs : LabelManager, comms : CommentManager) : void  - addSubevent(p : ShellPresenter, cals : CalendarManager, plans : PlanManager, labs : LabelManager, comms : CommentManager ) : void  - addSubtask(p : ShellPresenter, cals : CalendarManager, plans : PlanManager, labs : LabelManager, comms : CommentManager ) : void  - editname(p : ShellPresenter, cals : CalendarManager, plans : PlanManager, labs : LabelManager, comms : CommentManager ) : void  - editDescription(p : ShellPresenter, cals : CalendarManager, plans : PlanManager) : void  - editLabels(p : ShellPresenter, cals : CalendarManager, plans : PlanManager) : void  - editTime(p : ShellPresenter, cals : CalendarManager, plans : PlanManager ) : void  - nestPlan(p : ShellPresenter, cals : CalendarManager, plans : PlanManager ) : void  - unnestPlan(p : ShellPresenter, cals : CalendarManager, plans : PlanManager) : void  - deletePlan(p : ShellPresenter, cals : CalendarManager, plans : PlanManager, labs : LabelManager, comms : CommentManager ) : void  - clearTasjs(p : ShellPresenter, cals : CalendarManager, plans : PlanManager) : void  - clearEvents(p : ShellPresenter, cals : CalendarManager, plans : PlanManager) : void  - viewEvents(p : ShellPresenter, cals : CalendarManager, plans : PlanManager) : void  - viewTasks(p : ShellPresenter, cals : CalendarManager, plans : PlanManager ) : void  - editComments(p : ShellPresenter, cals : CalendarManager, plans : PlanManager) |

|  |
| --- |
| ShellMenuUser |
| + ShellMenuUser(p : ShellPresenter, s : InterfaceSaver, plans : PlanManager, cals : CalednarManager, logs : LoggingManager, labs :LabelManager, hists : HistoryManager)  + run(p : ShellPresenter)  # viewHistory(p : ShellPresenter, logs : LoggingManager, hists : HistoryManager)  # logOut( p : ShellPresenter, s : InterfaceSaver, logs : LoggingManager, hists : HistoryManager ) : void  # deleteOwnAccount(p : ShellPresenter, logs : LoggingManager, hists : HistoryManager, cals : CalednarManager, plans : PlanManager, labs : LabelManager, users : UserManager, comms : CommentManager) : void  # editCalendars() : void  # changeUsername( p : ShellPresenter, users : UserManager, logs : LoggingManager, hists : HistoryManager) : void  # changePassword(p : ShellPresenter, users : UserManager, logs : LoggingManager, hists : HistoryManager) : void  # save( p : ShellPresenter, cals : CalednarManager, plans : PlanManager, labs : LabelManager, users : UserManager, hists : HistoryManager, comms : CommentManager) : void |

|  |
| --- |
| ShellMenuEditLabelEvent |
| + ShellMenuEditLabel( p : ShellPresenter, s : InterfaceSaver, cals : CalendarManager, plans : PlanManager, labs : LabelManager, logs : LoggingManager, hists : HistoryManager)  + run(p : ShellPresenter, s : InterfaceSaver, hists : HistoryManager, logs : LoggingManager, cals : CalendarManager ) : void  - back(p : ShellPresenter) : void  - editLabel(p : ShellPresenter, plans : PlanManager, labs : LabelManager) : void  - deleteLabel(p : ShellPresenter, plans : PlanManager, labs : LabelManager) : void  - clearLabels(p : ShellPresenter, plans : PlanManager, labs : LabelManager) : void  - addThematicalLabel(p : ShellPresenter, plans : PlanManager, labs : LabelManager) : void  - viewLabels(p : ShellPresenter, plans : PlanManager, labs : LabelManager) : void |

|  |
| --- |
| <<abstract>>  ShellMenu |
| + commands : Map<String, Runnable>  - menu State : MenuState |
| # setMenuState(menuState : MenuState) : void  # getMenuState() : MenuState  # handelInput(data : ShellData, input : String) : void  *+ run(presenter : ShellPresenter) : void* |

|  |
| --- |
| ShellMenuUserAdmin |
| + ShellMenuAdminUser(p : ShellPresenter, s : InterfaceSaver, plans : PlanManager, cals : CalendarManager, logs : LoggingManager, labs : LabelManager, users : UserManager, hists : HistoryManager, comms : CommentManager)  + run(p : ShellPresenter) : void  - newAdminUser(p : ShellPresenter, users : UserManager, plans : PlanManager, cals : CalendarManager, logs : LoggingManager) : void  - banUser( p : ShellPresenter, users : UserManager, logs : LoggingManager, hists : HistoryManager ) : void  - unbanUser( p : ShellPresenter, users : UserManager, logs : LoggingManager, hists : HistoryManager ) : void  - deleteNonAdminAccount( p : ShellPresenter, users : UserManager, plans : PlanManager, cals : CalendarManager, labs : LabelManager, hists : HistoryManager, logs : LoggingManagercomms : CommentManager ) : void |

|  |
| --- |
| ShellMenuEditLabelTask |
| + ShellMenuEditLabelTask(p : ShellPresenter, s : InterfaceSaver, cals : CalendarManager, plans : PlanManager, labs : LabelManager, logs : LoggingManager, hists : HistoryManager)  + run(p : ShellPresenter)  - setProgressLabel(p : ShellPresenter, plans : PlanManager, labs : LabelManager) |

|  |
| --- |
| ShellMenuEditComment |
| + ShellMenuEditComment(p : ShellPresenter, plans : PlanManager, comms : CommentManager, logs : LoggingManager)  + run(p : ShellPresenter) : void  - back() : void  - viewComments(p : ShellPresenter, plans : PlanManager, comms : CommentManager) : void  - addComment(p : ShellPresenter, logs : LoggingManager, plans : PlanManager, comms : CommentManager) : void  - editComment(p : ShellPresenter, plans : PlanManager, comms : CommentManager) : void  - deleteComment(p : ShellPresenter, plans : PlanManager, comms : CommentManager) : void  - reply(p : ShellPresenter, plans : PlanManager, comms : CommentManager, logs : LoggingManager) : void  - clearComments(p : ShellPresenter, plans : PlanManager, comms : CommentManager) : void |

Presenter

|  |
| --- |
| ShellPresenter |
| + getInput() : String  + displayResult(result : String) : void  + getArguments(allowEmpty : String, args : String…) : String[]  + getArguments(allowEmpty : boolean, args : String…) : String[]  + heyArguments(allowed : List<String>, args : String…)  + prompter(firstLine : String, args : String…) : String |

GateWay

|  |
| --- |
| <<Interface>>  InterfaceSaver |
| + changesMade() : boolean  + makeChange() : void  + saveAll() : void  +save(saveable : Serizable, fileName : String) : void  + load(item : T, fileName : String ) : T |

|  |
| --- |
| Saver |
| - changesMade : boolean  - path : String |
| + save(saveable : Serializable, fileName : String) : void  + saveAll() : void  + changesMade() : boolean  + makeChange() : void  + load(item : T, fileName : String) : T |