



**MIDDLE EAST TECHNICAL  
UNIVERSITY**



**Software Engineering**

**SE560 Software Engineering Studio**

**Meeting Scheduler for a Company**

**ANALYSIS REPORT**

**Barış GÖKBUDAK - 1469790**  
**Koray BAŞTUĞ - 1470053**

# Index

1.	Introduction .....	3
1.1.	Project Definition .....	3
1.2.	Goals and Scope .....	4
1.3.	Constraints .....	4
2.	Market Research .....	4
3.	Requirements .....	9
3.1.	Functional Requirements .....	9
3.2.	Non Functional Requirements .....	10
3.3.	Hardware .....	11
3.4.	Software .....	11
4.	Usage Scenarios .....	11
5.	Diagrams .....	12
6.	Project Plan .....	14

# 1. Introduction

Meetings are carried out widely in many organizations such as offices, schools, libraries, companies, community associations. As the meeting numbers increase in these organizations, managing the meetings can come up with a chaos. Nowadays people use some useful systems to pass over problems encountered while managing meeting scheduling.

This document describes the requirements for the Meeting Scheduler that will be developed according to the requirements analysis phase.

The purpose of this document is to define the requirements gathering process used to elicit requirements from the product stakeholders here who are course advisor and assistant to define the overall vision and goals of this new product, and to list requirements that are essential to the success of product.

A meeting scheduler system can offer below objectives :

Reduce effort and frustration in scheduling meetings, especially by reducing telephone- and email-tag.

Reduce frequency of unavailable resources needed for meetings (e.g. A/V equipment, projection).

Reduce stress of rushing from one place to another.

Minimize fragmentation of the working day and unnecessary interruptions.

Increase the effective availability of individuals for collaborative activities.

Increase awareness among those concerned of meeting information such as schedule updates and preparation requirements.

Maximize room utilization during the work day.

Preserved individuals' privacy concerning aspects of their schedules that they did not want published.

## 1.1. Project Definition

In this project, we will develop a web-based application to keep track of and assist scheduling the meetings in a company where :

- there is a hierarchy of workgroups;
- an individual employee may be member of some number of workgroups;
- every workgroup has a leader that manages its users;
- someone may use this system to schedule a meeting for individuals, workgroups,workgroups of workgroups, etc.

As it is mentioned above it is a flexible system in which workgroup hierarchies can be defined and managed. Also meetings can be arranged by using directly individuals, workgroups or workgroups of workgroups according to the user's wish.

Main stakeholders in the problem domain are defined as below :

- Meeting initiator
- Participants

Also a person with administrator privileges is required in order to maintain the system as a superuser.

There will be a exclusion set which will describe the date range in which a participant is not suitable for attending a meeting.

There will be a preference set which will describe the date range in which a participant is suitable for attending a meeting.

A meeting can be defined as a name which should include information about the date and time period. Also there can be additional properties which will be useful in the future.

## **1.2. Goals and Scope**

Meeting Scheduler System shall manage the meetings rather than behaving like an intelligent system. System shall automatize several tasks which are achieved while scheduling a meeting.

The purpose of a meeting scheduler is to support the organization of meetings - that is, to determine, for each meeting request, a meeting date, subject and location so that most of the intended participants will effectively participate. The meeting date and location should thus be as convenient as possible to all participants.

Support for user authentication and authorization of features such as delegation to an administrative assistant or secretary

It will provide appropriate level of security as deemed necessary by the organization. Meeting initiator role will be available only for the defined people who are in the charge of workgroups. Participants' exclusion sets may be violated by the workgroup leader if it is needed.

Users in the system will use calendars in order to publish their available time periods which will be tracked by the meeting initiator when scheduling a meeting.

Reminders may be implemented in order to inform participants for a meeting. Reminder time is given in meeting request.

The meeting requests can be established in a parallel way in which several concurrent issues should be considered. Meeting requests can be competing by overlapping in time or space. Concurrency must be managed.

Meetings may be scheduled as giving an option indicating the frequencies such as one time, daily, weekly or monthly.

The meeting date should be as convenient as possible, and available as early as possible, to all (potential) participants.

Users can be able to see meetings, available times and busy times from their calendars.

## **1.3. Constraints**

*Project Schedule:* We have to finish the project until third week of December 2006 so this is one of the main major constraints. We have to design, build and test the project during this period.

## **2. Market Research**

There are a lot of system in the problem domain dealing with meeting scheduling. There systems in general have similar functionalities in which some of them are departed from the others by giving extra exciting capabilities to the users.

## **CyberMatrix Meeting Manager™: Office Meeting Scheduler**

<http://www.cyber-matrix.com/cmm.html>

CyberMatrix Meeting Manager is an easy to use multi-user application for scheduling meetings and meeting room resource scheduling. There are several benefits indicated by the product web site :

**Easy to use** - Start scheduling immediately using our attractive easy to use interface. You won't get lost in a multitude of screens or confused by too many unnecessary options.

**Powerful** - Don't let the simple interface fool you. Meeting Manager uses a powerful scheduling engine with sophisticated recurring events having daily, weekly and monthly options. There are also search functions to allow you to locate obscure bookings quickly.

**Convenient** - Drag and drop bookings between different resources, dates and times. Adjust booking times by dragging the edges of the bookings.

**Shareable** - Share schedule data over your network (Standard version) or over your intranet or the Internet (C/S or Web version). Exchange schedule data with other programs via the CSV import/export feature. Access data from other database applications using the ODBC driver.

**Flexible** - See bookings of a single resource in daily, weekly or monthly views. You can also view the bookings of all resources in a single day or even an entire week.

**Highly configurable** - There are many useful settings you can change to make Meeting Manager suit your needs. You can even edit the included reports or create new ones. If you are from a non-English speaking country, you can easily convert the software text into your own language equivalents.

**Dependable** - Uses solid record-locking database engine.

**Secure** - By using the security features you can restrict who can edit bookings, who can book certain resources and who can access the configuration tools.

**Internet ready** - The software can automatically e-mail meeting attendees or resource contacts when a booking has been changed. The Client/Server or Web-based versions can share your schedule data over an Internet connection.

This system has below features for meeting scheduling :

Adding a New Booking, Booking an Entire Day, Approving and Rejecting Bookings, Deleting an Existing Booking, Editing an Existing Booking, Copying a Booking, Week at a Glance, Resources at a Glance, Month at a Glance, Viewing Resource Details, Viewing Booking Reports, Viewing Schedule Report, Searching for Available Resources at Given Time, Searching for Bookings, Searching for an Available Time slot, Searching for an Available Time Period, Requesting, Approving and Rejecting Bookings, Resolving Booking Conflicts, Meeting Manager Security, Meeting Manager Data and Making your own Reports.

## **MeetingWizard**

<http://www.meetingwizard.com/>

MeetingWizard arranges and schedules meetings and other events. As a productivity tool it makes the planning process easier and more effective. MeetingWizard automatically does the following:

- sends invitations to participants proposing alternate times
- summarizes their responses
- updates you on the results
- sends confirmations
- sends optional reminders prior to meetings

MeetingWizard requires only that you and your participants have access to e-mail and a browser. It uses the simplest technologies possible, ensuring that all of your guests will be able to use the system.

MeetingWizard has been designed to be effective in more than 90% of meeting planning situations, and does not try to fulfill every possible need. However, it allows for enough flexibility to make changes, add personalized notes, make cancellations and handles most other situations that might arise.

MeetingWizard is designed for the modern workplace. It is friendly but professional.

**How MeetingWizard Works :**

The system typically works in a 3-step process.

1. You invite participants providing a number of optional dates/times.
2. Participants respond to invitations by indicating when they are available.
3. You confirm the meeting or event after reviewing responses.

In addition, there are many other features that ensure you don't forget important details, and that all participants receive complete information about meetings. Best of all, our basic free service allows you to schedule as many meetings or events as you like.

MeetingWizard is an lighter system according to the CyberMatrix's product. Its features are limited as indicated above but it is a simple one.

**Meeting Maker**

<http://www.meetingmaker.com/products/meetingmaker/>

Meeting Maker contains several features and benefits designed to improve productivity by saving you one of your most valuable assets - your time. It does so by simplifying and streamlining your personal and group scheduling into a single, collaborative work environment. In fact, there are so many features, we had to break them up into categories :

- Group Scheduling
- Personal Calendaring
- Mobility & PIMs
- IT
- Optional Modules

<b>Group Scheduling Features &amp; Benefits</b>	
<b>Email Integration</b>	Provides the ability to contact attendees and send them attachments using your own email client
<b>Group Views</b>	View the availability and schedules of teams or groups of people from a single window
<b>iCalendar Support</b>	Send meeting invitations to people and calendars outside of your organization using iCalendar
<b>Meeting Auto Selector</b>	Automatically select the next timeslot when all attendees are available
<b>Proxy Access</b>	View coworker calendars in a side-by-side view with your own
<b>Real-time Meeting Invitations</b>	Schedule meetings in real-time - you request a meeting and the attendees are notified immediately

<b>Recurring Meetings</b>	Schedule customized recurring meetings - daily, weekly, bi-weekly, monthly, etc.
<b>Resource Scheduling</b>	Reserve conference rooms, A/V equipment or other shared resources for your meeting
<b>Share Availability</b>	Share your free and busy time with others, vastly simplifying the group scheduling process
<b>Simplified Scheduling</b>	Eliminates the complex hassle of scheduling meetings – no more juggling other people’s schedules, telephone tag or email delays and subsequent rescheduling

<b>Personal Calendaring Features &amp; Benefits</b>	
<b>Calendar Navigator</b>	Quickly and easily select a date to view
<b>Customized Views</b>	Customize your calendar with colors and labels, various layouts, and numerous viewing options
<b>Direct Event Editing</b>	Edit your activities and meetings directly in the daily view
<b>Ease-of-Use</b>	Intuitive GUI and functionality makes it easy to learn
<b>Email Reduction</b>	Doesn't contribute to email "inbox overload" when scheduling meetings because you're doing it straight in the Meeting Maker environment
<b>European Date/Time Formats</b>	View dates and times within your calendar using the standard European formats
<b>Event Calendar Integration</b>	Integrate the WebEvent View event calendaring solution with Meeting Maker to add published events directly into your personal calendar.
<b>Event Creation</b>	Create activities, banners (i.e. vacation, birthdays, etc.) and to-do items for yourself
<b>Font Customization</b>	Adjust the font type and size based on your preference in the main calendar view
<b>Multiple Calendar Views</b>	View your calendar in day, week, month or text views
<b>Pencil-in Events</b>	Proposed meetings automatically populate your calendar where they can be directly accepted or declined
<b>Printable Formats</b>	Print your calendar out using common printout forms
<b>Private Events</b>	Mark events private so they can't be seen by others
<b>Recurring Banners</b>	Set standard banners to display on a daily, weekly or monthly basis
<b>Time Zone Support</b>	Adjusts automatically to any of the 319 time zones around the world

<b>Mobility and PIM Features &amp; Benefits</b>	
<b>HTML Client</b>	Provides Web access for remote users that need quick access to their calendar

<b>Mobile Device Connectivity</b>	Synchronize meeting invitations and reminders to mobile phones, pagers, and wireless PDAs (Palm, PocketPC & Blackberry) with the Intellisync for Meeting Maker module
-----------------------------------	---

<b>IT Features &amp; Benefits</b>	
<b>Email Virus Immunity</b>	Doesn't fall victim to email-born viruses or go down if your email system fails, so it's a smart way to manage your IT systems risk
<b>Hubbed Environment</b>	Multi-server (hubbed) environment support, which provides collaborative scheduling capabilities to tens of thousands of users within an organization. It also offers the flexibility for different departments within the same organization to be administered separately.
<b>Limited IT Overhead</b>	Doesn't soak up network or system resources the way messaging-based calendaring and scheduling systems do
<b>Multi-Language Support</b>	Available in English, French & German
<b>Multi-Platform Support</b>	Runs on all major platforms - Windows, Macintosh, Linux, and Solaris -- even in your enterprise portal using the Arrival SDK
<b>Scaleable</b>	Doesn't constrain organizational growth in any way - it scales from ten to tens of thousands of users
<b>Simple Administration</b>	Easy to install, adopt and administer

<b>Add-On Modules for Even More Functionality</b>	
<b>Outlook Connectivity</b>	Integrate Microsoft Outlook users to form a collaborative work environment with the Meeting Maker Connector for Outlook module
<b>Wireless Calendar and Email Connectivity</b>	Using Meeting Maker Mobile Powered by Intellisync, you can access your calendar, view, accept and propose new meetings while sending, receiving, reading and deleting email directly from your mobile device at any time from anywhere.
<b>Mobile Device Synchronization</b>	Take your Meeting Maker calendar with you wherever you go using the Intellisync for Meeting Maker module to sync your calendar with Pocket PCs, Win CE, Blackberry devices and more.
<b>Enhanced Security</b>	The LDAP Gateway module improves security by validating user accounts against an LDAP server without the need to create user accounts in Meeting Maker
<b>Simplified Administration</b>	The Administration API/CLI module helps IT administrators automate certain administration tasks such as adding/deleting users, changing passwords and retrieving account information

As described above this is the most detailed meeting scheduler system observed in the market search stage.

#### **Google Calendar**

<http://calendar.google.com/>

We may consider using Google Calendar. It will allow you to enter in your schedule and subscribe to calendars of other users. Features of Google Calendar can be summarized as below :

**Calendar Sharing:** Set up a calendar for your company softball team, and share it with the whole roster. (Your shortstop will never forget about practice again.) Or share with friends and family so you can view each other's schedules side by side.

**Invitations:** Create event invitations, send them to friends, and keep track of people's responses and comments, all in one place. Your friends can receive your invitation and post responses even if they don't use Google Calendar themselves.

**Quick Add:** Click anywhere on your calendar where an event belongs (or use the Quick Add link), and start typing. Google Calendar understands whole phrases like "Brunch with mom at Java Cafe 11am on Saturday," and will pop new events right into your agenda.

**Gmail Integration:** Add your friend's Super Bowl party to your calendar without ever leaving your Gmail inbox. Gmail now recognizes events mentioned in emails.

**Search:** Find the date of the Baxter family BBQ (you knew it was sometime this summer). Or, search public calendars to discover new events you're interested in and add them to your own calendar.

**Mobile Access:** Receive event reminders and notifications on your mobile phone.

**Event Publishing:** Share your organization's events with the world.

Our last market research which is Google Calendar is a simple but useful tool in order to manage meetings but it is limited according to the above systems such as Meeting Maker.

### 3. Requirements

#### 3.1. Functional Requirements

A meeting initiator shall initiate a meeting by deciding on a meeting topic, by selecting a list of potential meeting participants by individually, workgroups or workgroups of workgroups and by selecting a date range, duration for the meeting and a place.

A meeting initiator shall be one of the potential meeting participants by default but may have option to remove himself/herself as a potential meeting participant.

A meeting initiator shall confirm the meeting and the system shall change the time slots of accepting meeting participants from a temporary reservation to a scheduled meeting, once all potential meeting participants have responded to the meeting proposal or given time period for the proposal has ended.

A meeting initiator may cancel the meeting and the system shall change the time slots from being temporarily reserved to be freed once the meeting is canceled.

A meeting initiator shall reschedule the meeting and the system reschedule the meeting by releasing the temporary reservations and selecting a different data range, duration and starting the process over.

A meeting initiator may cancel the meeting or reschedule the meeting at any time prior to the start of the meeting.

Meeting scheduler system may provide the meeting initiator a summary of the scan of potential meeting participants showing available time slots and schedule conflicts as a means of informing the meeting initiator of the overall results of the system.

The meeting proposal may include an agenda or list of topics for discussion during the meeting.

Meeting scheduler system will scan all the list of potential meeting participants to determine a time slot of the required duration exists among all potential meeting participants once a meeting proposal is entered to the system.

Meeting scheduler system will inform the meeting initiator that no time slot exists for all potential meeting participants and may optionally suggest an alternative date range, duration which is available.

Meeting scheduler system will temporarily reserve the time slots for the proposed meeting and inform the potential meeting participant of the meeting and request input as accept or refuse, if a time slot exists.

A potential meeting participant may accept or refuse the meeting. If accepting, the potential meeting participant becomes a confirmed meeting participant. If refusing, the potential meeting participant may provide a reason for his refusal.

Meeting scheduler system shall monitor and report meetings according to the user requests by proving user security privileges.

Meeting scheduler system shall be accessed from the Web.

A meeting initiator may initiate a meeting by specifying frequency as one time, daily, weekly or monthly.

Meeting scheduler system may remind the participants for a meeting before a time period (defined in the meeting request) the meeting will start.

Meeting scheduler system shall notify all the participants according to a cancellation of a meeting or a change to a meeting in which the participants are involved.

Meeting scheduler system shall provide user authentication.

Meeting scheduler system shall user privileges according to the levels that are necessary such as workgroup leader, admin.

An administrator security level shall be defined in order to achieve several tasks such as creating users, modifying users and deleting users with user profile informations and security levels.

Administrator shall create workgroups, modify workgroups and delete workgroups.

Administrator shall add new individuals to the workgroups, remove individuals from the workgroups and define workgroup leaders.

Workgroup leaders shall add new individuals to the workgroup, remove individuals from the workgroup.

Users shall modify his/her profile.

Meeting scheduler system shall provide the flexibility in order to define workgroups by recursive composition relations.

Meeting scheduler system shall provide capability for every user to define and track their calenders with their preference set and exclusion set which are used in scheduling meetings.

Meeting scheduler system shall provide for every user to see meeting details from their calendars.

### **3.2. Non Functional Requirements**

Any physical change to the place information of the meeting shall be kept up-to-date.

Optimized implementation in terms of computational and network resources, human involvement and interaction, and rapid response times shall be considered.

The system shall be secure to protect the privacy of its users and the integrity of its information.

The user interface of the system should be easily usable by non-experts.

Privacy rules should be enforced a meeting participant should not be aware of constraints stated by other meeting participants if he/she is does not have enough security priveleges over the indicated meeting participant.

All users and administrators will be verified before access is granted.

Meeting scheduler system shall be used by any web browser with standart capabilities.

Meeting scheduler system shall serve simultaneous requests.

Messages and user intafaces used by the meeting scheduler system should be clear and easy to understand/use.

### **3.3. Hardware**

Meeting schedular system is a web based automation project, we are planning a platform independent design. The hardware requirements of the server will be:

- Network and/or Internet Connection.
- Intel Pentium III or 100% compatible platforms, or above.
- Main memory must be high enough to handle the workload of the server's workload (Minimum of 512 MB main memory).
- Free disk space for installation.

### **3.4. Software**

We intend to develop this project about platform independent. We will use IBM Websphere Application Developer (WSAD) as development environment. For the database, we decide to keep the meeting and users information through the MySQL. Beyond all, we will use the following programs:

- For web applications, Apache Tomcat 5.0 Application Server;
- For development web server, IBM Websphere Application Server Test Environment (built in WSAD)
- For programming, Java
- For configuration management, CVS
- For image editing, Adobe Photoshop, MS Windows Paint tool;

## **4. Usage Scenarios**

A meeting initiator would use the Meeting Scheduler system to propose a meeting by providing the meeting topic, date range, duration and meeting participants as indicating the individuals, workgroups or workgroups of workgroups.

Potential meeting participants are identified by a unique identifier that relates to a profile containing the person's name, address, telephone and email, other organizational information.

The meeting proposal may include an agenda or list of topics for discussion during the meeting and may include a list of required equipment.

Upon entry of the meeting proposal to the scheduler, the scheduler will scan the list of potential meeting participants to determine if a time slot of the required duration exists among all potential meeting participants.

If no time slot exists, the scheduler will inform the meeting initiator that no time slot exists for all potential meeting participants and may optionally suggest an alternative date range and duration which is available.

The meeting scheduler may provide the meeting initiator a summary of the scan of potential meeting participants depicting available time slots and schedule conflicts as a means of informing the meeting initiator of the overall results of the scan.

If a time slot exists, the scheduler will temporarily reserve the time slot for the proposed meeting and inform the potential meeting participant of the meeting and request input as to accept or refuse for a defined time period especially via email.

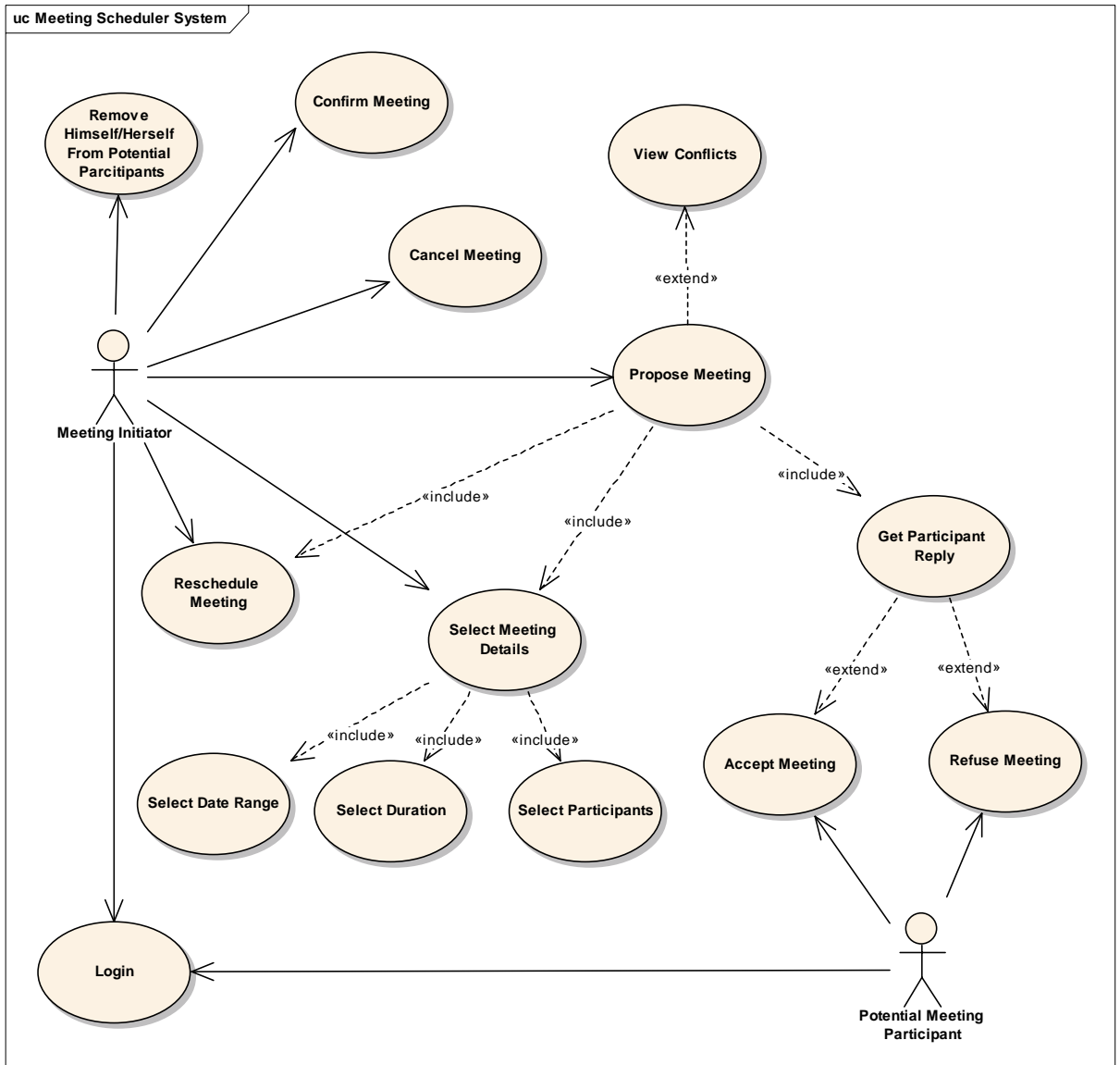
Potential meeting participant may either accept the meeting (will attend) or refuse the meeting (will not attend). When accepting a meeting, the potential meeting participant becomes a confirmed meeting participant. When refusing a meeting, the potential meeting participant may provide a reason for the refusal.

Once all potential meeting participants have responded to the meeting proposal, the meeting initiator shall confirm the meeting which will result in the time slots of accepting participants to be changed from a temporary reservation to a scheduled meeting, or cancel the meeting which will result in the time slots being temporarily reserved to be freed, or to re-plan the meeting by releasing the temporary reservations and selecting a different date range, duration and starting the process over.

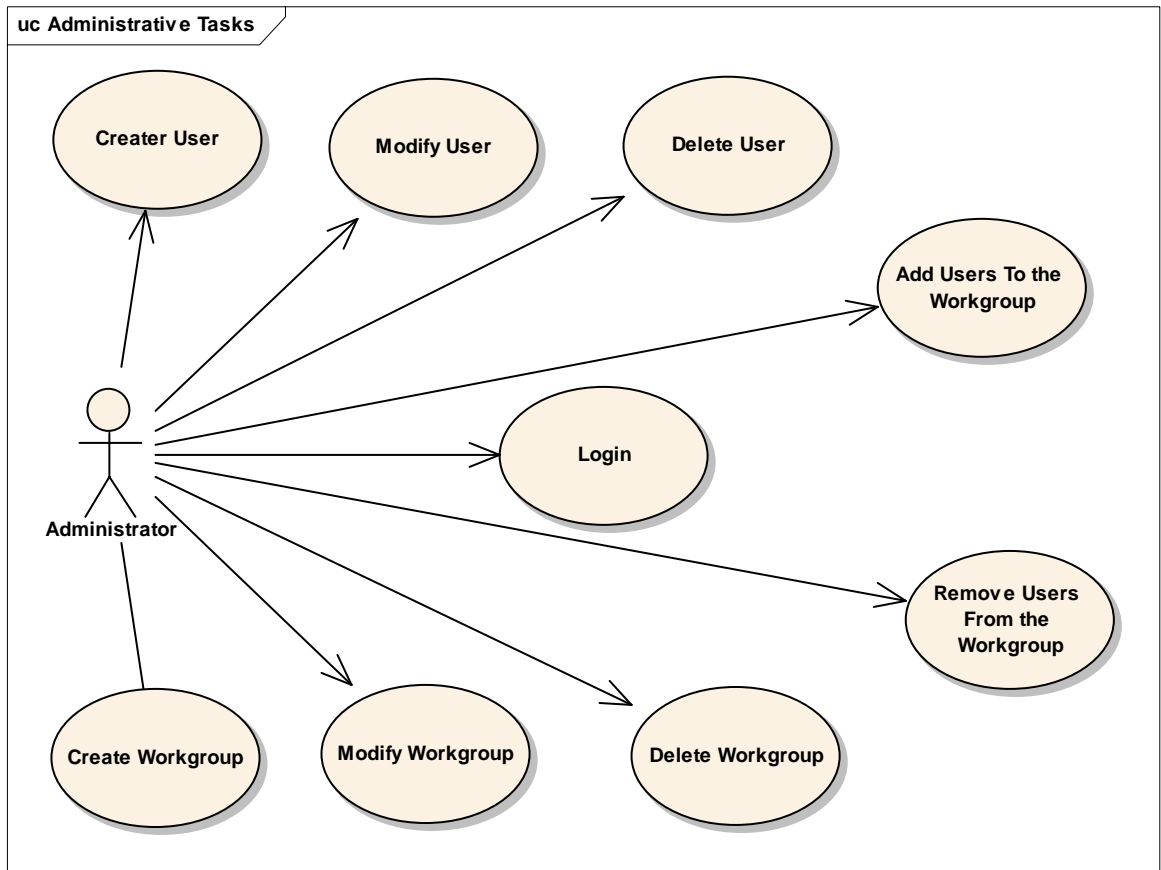
At any time prior to the start of the meeting, the meeting initiator may cancel the meeting or re-plan the meeting.

## **5. Diagrams**

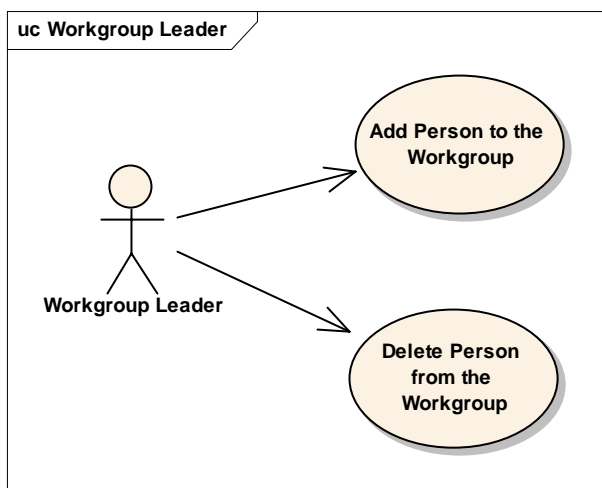
Meeting scheduler system has several capabilities which are defined above in the functional and non functional requirements. These can be modeled in 3 use case diagrams simply as stated below :



Administrator Tasks :



Workgroup Leader :



## 6. Project Plan

Project plan which shows the progress of the project is shown below in the Gantt Chart :

