1. Introduction
   1. Description of the problem
   2. Goal
   3. Glossary
2. Assumptions and considerations| Our Vision
3. Proposed system
4. Domain
   1. Jackson-Zave model
   2. Identifying stakeholders
   3. Identifying actors
   4. Entities
   5. Relations

# Introduction

## Problem description

The main scope of the project is to create a web application using JavaEE platform which informs the registered users about the incoming events, helping them to avoid bad weather conditions in case of outdoors activities.

This web application will permit to the registered users to create, update and invite people to the events. The organizer is able to create, update and cancel the arrangements. The calendar permits to the creator of the event to invite other registered users.

In fact the software will allow to organizer to specify more details about the future event like: place, date and whether it will be indoor or outdoor appointment. Furthermore, only registered users can create, delete, update these events and they will have the possibility to invite other people, which can only accept or decline the invitation.

Once the event has been committed every participating user will be informed about forecast condition and other important details.

In case of incoming bad weather conditions the system will notify users participating to outdoor events one day before.

## Scope

In order to to guarantee the main functions here below are listed the most important features:

* The system permits only to the owner of the event the creation, deletion, update of the schedule;
* Each registered user can create an event;
* The system is able to send invitations and receive responses from the users;
* The organizer has the complete list of the users that has committed to the event;
* In case of incoming bad weather conditions the system has to notify the forecast situation for outdoor events one day before;
* Only on invitation people can view the details of the event;
* The system provides the forecast for all upcoming events;
* The system has to guarantee access only to the registered users;us
* Only when users are logged in can view own notifications and personal schedule;
* The system has to provide a registration form.

# Glossary

User: a person already registered in the system who is able view notifications, create new events, reply to invitations, view details of own events.

Organizer: is a registered user who arranges an activity, which is the only one who can update and delete an event. Also is known as owner.

Event: is a planned activity with a specific date and place.

Indoor: all activities happening inside a building or under a covered structure.

Outdoor: opposite of indoor.

Invitation: a notification with a specific request to join an event that can be either accepted or declined.

Notification: is an official message sent by the system to the registered user.

Registered user: is a person who has compiled a registration form and is acknowledged by the system.

# Vision

The initial document of the project presents some not well defined point. In order to avoid ambiguities and misunderstandings in the project, we will give our vision to some crucial points from our point of view:

Bad weather condition– in nature there is a large set of bad weather conditions, therefore for humans it is a subjective point of view, i.e. something related to their planned activities, mood, or other sort of factors. Considering these premises the application shall provide to user when creating an event the opportunity to define what bad weather conditions are.

One day before – usually for people this concept is perceived as 24 hours before a given event, this concept will be used in this project as well.

Event creation – a registered user can create an event at least 24 hours before its occurrence.

Notification – are sent immediately after the event creation and no further invitations can be added.

Place: to avoid ambiguities in this case the owner will provide unique identification of the event's location, e.g. zip code.

Modification of the event – in case of one of important fields have been modified (e.g. location, date), the notification shall be sent to all originally participants.

Overlapped events – an user can create an event only if he isn't participating to any other scheduled event at that precise time, i.e. creation only of synchronously disjointed events are permitted.

Acceptance of the event – once an invitation has been either accepted or declined no additional modification is possible.

Calendar – Gregorian.

# Proposed System

As has been stated in the introduction and in assumptions our web application is conceived to be able to allow people to see their personal calendar and the incoming arrangements.

Each new user shall to register through a very simple registration form, in order to be acknowledged by the system. Every user, after logging into the application, will be able to:

* In first place to interact with the personal calendar creating, updating or deleting their personal event through a simple user interface;
* Secondly to retrieving information about forecast conditions in the period of incoming event;
* Eventually to see the invitation notifications
* Finally thanks to this system users will be able easily to link other people to programmed events.

# Domain

As start point for gathering requirements and creating specifications, Jackson-Zave model has been chosen. This approach helps to identify the main interactions between the world and the machine, in our case registered users or weather forecast and the web application respectively.

The intersection of two domains will give an idea of the shared phenomena, e.g. personal account

Identifying stakeholders

The main stakeholders of the project is Politecnico of Milan which is represented by internal committee of professors. The main needs of this project is to fulfill all requested requirements respecting all deadlines. Furthermore we have to exhibit all stages of the project throughout of the development process.

The other stakeholder is our development team which is focused on (is really into/ be concerned) delivering a high-quality web application. In addition we are concerned with acquiring main soft engineering techniques. Besides what has been stated before, our team is interested especially to get a good mark for the university career.

Finally the main intention is to provide an ease-to-use software, that will accommodate user experience and fulfill all requested needs.

Identifying actors

In this system under consideration, there are basically two main actors:

* Registered user: a person acknowledged by the system, has access to all application's features such as creation, deletion, update events and check up signed up arrangements and their relative weather forecast.
* Weather forecast: an external service which provides an analysis of the state of the weather in certain area and date.

# Requirements

Requirements engineering includes two main activities;

requirements elicitation, which results in the specification of the system that the client

understands, and analysis, which results in an analysis model that the developers can

unambiguously interpret.

Non functional: he system functionality, the interaction between the user and the system, the errors

that the system can detect and handle, and the environmental conditions in which the system

functions are part of the requirements.

* Identify actors
* Scenarios: during this activity, developers observe users and develop a set of detailed scenarios for typical functionality provided by the future system. Scenarios are concrete examples of the future system in use. Developers use these scenarios to communicate with the user and deepen their understanding of the application domain.
* Use cases
* Relationship among use cases
* Non functional requirements: During this activity, developers, users, and clients agree on aspects that are visible to the user, but not directly related to functionality. These include constraints on the performance of the system, its documentation, the resources it consumes, its security, and its quality.

## Functional requirements

* User
  + Any interaction with the calendar, is possible only when user is logged into the system;
  + Each registered user can create, update, delete an event.
  + The organizer can invite register users for own event.
  + During the creation of an event the user has to fill in mandatory information fields, otherwise it won't be possible to proceed with the creation;
  + Any created event has to be accessed by its organizer;
  + Updates and cancellation of event can be performed by the organizer at any time.
  + Any member of the event can view event summary;
  + Each event has a summary log with some details: weather forecast, date, place, name of activity, and type e.g. indoor vs outdoor;
  + User can decline or accept the invitation before its deadline, once expired no possible actions can be performed;
  + User defines the meaning of “bad weather”;
* Calendar
  + Permits view notifications;
  + Is a web application based on local time and on Gregorian calendar;
  + Has to manage overlapped events; A user can only create not overlapped events;
  + Any created event is acknowledged as “saved event” by the system otherwise the user has to repeat the creation procedure or fulfill missing requirements.
  + Once the event has been committed the notifications are automatically sent to all involved members.
  + To the organizer is allowed to delete, update and add more invitations.
  + If any updates or modifications are submitted new invitations and details should be sent again to original guests.
  + The system is synchronized to a weather forecast system;
  + Each event has a deadline for subscription;
  + All expired invitations are considered as declined.
  + Weather forecast for next 14 days is considered trustworthy otherwise is not available;
  + In case of upcoming not suitable weather conditions a reminder has to be sent to the organizer.
  + Only for outdoors activities the reminder can be sent to the organizer.
* user: a user it's a person that have compiled the registration form. Here are his features:
  + during the registration the user has to register into the system with an email not yet registered;
  + during the registration the user has to create a unique username, that will allow the system to identify him;
  + once user is logged in he is able to receive new notifications, to see his calendar with all incoming event and to create new events;
  + when a user creates a new event, the organizer has to compile the event creation form with location, date, details of the event and what he means for bad weather condition for that event;
  + when a user creates a new event, the system will check if the creation of the event will occur at least 24 hours before the real event
  + when a user creates a new event, the system will check if there is another event created by the same username and if it's overlapping that event;
  + after created the event, the organizer has the possibility to invite other users through their username. This users will receive an invitation notification with the possibility either to accept or decline, wich will expire 24 hours before the event occurrence;
  + if a user it's also the organizer, he has the possibility to update and delete an event that will be notified to the other participating users;
  + when a user update an event, for instance changing the location or the date, a new invitation notification will be sent to all users that have been invited whether or not they accepted the invitation to the original event;
  + the system assume that the invited users belong all to the same time zone of the organizer;
* calendar:
  + the system adopt gregorian calendar for all users
  + a calendar gives a twice-monthly vision of incoming arrangements so users can schedule their activities more easily;
  + a calendar shows two weeks before and a weeks after the event the forecast information
  + 24 hours before, the system will notify the forecast situation to all participating user in case of bad weather condition of the day of the event