meet&do: Meeting website for students and enthusiasts

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***Abstract*—meet&do is a website that aims to put people in touch who have similar interests and hobbies or need help with issues related to their studies. Enthusiasts can find each other through the website and share real-life activities together.**

I. Introduction

Nowadays, we are more connected than ever through social media and all kinds of internet-based services yet somehow people are still isolated from each other. Forming friendships and relationships has become challenging for some as it is easy and convenient to hide behind a social media profile. Everyone has an online presence. In this environment, many may find themselves looking for real-life interactions.

We want to create a website that aims at putting people in touch who have similar interests and hobbies or need help with issues related to their studies. Getting in touch online is easy but that is just the first step. After finding people with the same interests and making appointments, users of our website meet in real life. Meeting new people works best if you are already interested in similar fields and activities and we want to put people together who have those in common. Common interests to bond over and meet up again in the future or form new friendships.

Where already existing alternatives might take a more generic approach, we want to create a solution that gives users the opportunity to choose what they are looking for from the beginning. Therefore, the website will be divided into four main areas. That makes it less confusing and easy and intuitive to navigate.

II. Alternatives

A. Jodel

Jodel is a Social Media platform from Germany that aims particularly at university students and connecting people who are in the same area. User's can share content, however events as such can't be created. It is only available on mobile operating systems and has no website. Users in an area can't see posts other than those made locally. Posts are assigned colors which are chosen randomly. The platform is available in several languages and European countries.

B. Meetup.com

Meetup is the competitor with the most similarities to our project. The website offers a service used to organize online groups that host real life events for people with similar interests. Events of all kinds can be hosted which don't have to conform to certain categories. Also, event organizers have to pay a fee to host events. The website is available in many languages.

C. Others

Various other social networks like Facebook that also include the feature to create and host events. In essence, all social media platforms fulfill similar functions that aim at communication and gathering people. Some of them, like Facebook, have inbuilt Event Managers to create and host events. Others, like Instagram and Twitter, allow users to track events and participating people via hashtags.

Differentiating aspects of MeetnDo: While Jodel restricts the user's view to their local area and is not suitable to host events, our project aims at events that can be hosted anywhere the user chooses and offering a clear and user friendly interface which is color coded by event type for a more organized experience. Also, Meetup.com takes a wider and more generic approach which is something we want to avoid in order to make the service more accessible and less overwhelming. For that reason our service offers preset categories that make it easy for the user to determine whether they are potentially interested in an event.

III. Technical specification

A. Software used

The website will be built using Ruby 2.6 and the framework Ruby on Rails 6.0. We chose Ruby and Rails because we like the simplicity of the language and we want to expand our knowledge on this framework. Ruby on Rails allows us to save time for CRUD (Create, read, update and delete) operations and allows us to focus on feature that differentiate our website. Moreover, Ruby on Rails follows the MVC architecture (Model, View, Controller) which will help us keep our code clean and organized in a specific folder arborescence and separate our code depending on its use (models, controllers, routes, helpers, and so on.

Rails also enables us to implement a REST API which can be used if we use a front end Javascript framework like Vue.js or if we end up working on a mobile app. The REST API would use JSON and would be a layer above the CRUD operations.

For the version controlling system, we chose git hosted on the GitHub service. Our repository is public so we don't have any limitation and we are able to be four collaborators on it. We use GitHub's board feature called "Projects" to organize our project with a Kanban-like workflow management method. We have a board for this very paper called "Documentation" and an other one for the actual implementation which will help us keep track of what's been done when coding the website.

For the development environment half of our team is using macOS and the other half is using Windows 10. Our text editor of choice is VS Code.

B. Hosting

Our stack only requires Ruby and a DBMS (Database Management System) which is PostgreSQL. For this matter, we chose Heroku which is a hosting provider focusing on easing the deployment process for the developers. Thus, we will be able to deploy our code to a development environment or production environment via the command line using Heroku as a Git remote or via the Heroku CLI (Command Line Interface) client.

The deployment can also be made from GitHub using their new CI/CD system called GitHub actions, from which we can deploy to Heroku using the Heroku Action which is a wrapper for the CLI. This helps keeping track of the deployments made and ensures the code running is the one in the version control system.

For our initial release we don't expect a very high number of users, hence the choice of the free plan for Heroku as well as Heroku's managed service. The only cost for now would be the domain name which costs about $10/year.

IV. Role assignment

Role	Name	Task description and etc.
User	Marc-Antoine	Quality assurance, testing of the product as a normal user through multiple device
Customer	Simon	Ensuring requirements are the most precise possible, and that they stay up to date during the lifetime of the project
Software developer	Stanislas	Implementation of the requirements and technical feedback
Development manager	Stephane	Work distribution and time, deadline management. Communication management with the client.

V. Requirements

A. Sign-up page

The sign-up section should show these fields:

- First Name
- Name
- Gender
- Date of Birth
- Email
- Password
- Password confirmation
- Anti-robot Captcha verification
- Sign up button

When the user presses the sign-up button considering all the information given is valid, the user must click the verification link sent by email to create his account and have access to the home page.

B. Login page

The login section should show 2 fields: username and password fields as well as a login button.

C. Home page

Once the user created his account or correctly logged in, he should have access to the home page.

The website should be able to localize the user city precisely and state it on the Home page. It also should give the user the possibility to change his location from a list of registered cities in the world.

The user should be able to log in from a Login button at the top right of the home page (if not logged in). The login section should show 2 fields: username and password fields as well as a login button.

The user should be able to log out from a Logout button at the top right of the home page (if logged in).

If the user is not logged in and tries to access to logged in user sections (such as personal information) the access will be denied and Login section will be highlighted to inform the user to sign up or log in in order to access this section.

D. Feed section

A search bar allows the user to search for a particular meeting. The home page should show a feed of meetings. The feed should only show non-archived meetings, be sorted from the nearest upcoming date at the top of the page to the latest date at the bottom of the page. The feed should show all types of meetings.

The meeting cards should show:

1) Name and/or Type: Restaurant (Lunch/Dinner/Brunch...), Sport (Tennis/Football/Swimming...), Study Lesson (Chemistry/Mathematics/Economics...), Entertainment (Theater/Outdoor show/ Concert...), Art Practice (Painting/Music...)
2) Location: Precise location with exact address and redirection to google maps when address is clicked

3) Time and duration: Meeting time and expected duration of the activity
4) Price: Can be undefined if free activity or if the price is not equally shared
5) Current participant number, expected participant number, max participant number: expected and participant numbers are not mandatory information. Possibility to click on current participants to display the list of current participants and access to their profile
6) Details: Text field with additional details from the meeting organizer, the details should be expandable/collapsible if too long.
7) Visual: Most precise visual describing the meeting, it can be a promotional photo of a restaurant, the poster of a show, an illustration of Mathematics, ... Whatever visual that can describe the meeting type the most precisely possible
8) Ask to Join Button: This button will open a new window with a message to send to the meeting organizer for joining the meeting. A default message is proposed to the user, but he can make his own. Join and Cancel Buttons available.
9) Remove from feed button: A little cross at the top right of the card that removes the card from the feed

E. Search Filters

The filter section should give the user the possibility to filter the feed results considering:

1) The type of meetings
2) The Date/Time of meetings
3) The Duration of meetings
4) Number of participants
5) A location filter (km radius from his current location)
6) Reset all filters
7) Filter button
8) Restore removed meetings

F. User section

The user section should give the possibility to the user to access his personal profile page and settings. Each user has a public profile with a limited set of information such as their name, profile picture, location and past meetings they participated in. An edit page is available for them to update these public details.

Private information such as email, password, account deletion, etc. are available on a different page called account settings.

G. Chat section

This page should let a user talk to other users via private messages.

A left column should contain a list of people that the user has already contacted, and a right column should contain an opened chat between the current user and another user.

The user's list should display full names and user profile photos. Next to each users' names, something should let the current user know that a user has sent a new message that he/she has not seen already.

The opened chat should contain all messages sent by people included in the chat. The current user should be able to see his/her messages on the right side. Next to each message, a user should be able to see the time (hour format) of receipt of a message.

H. User's meeting section

From the user section, which is a menu on the homepage the user can select a page with all his personal meetings that he is participating in or has shown interest in participating in. This page is called My Meetings. It can be found under this name in the user section.

The basic structure of this page is a list of all the user's events. All events all displayed chronologically in a timeline format. The user is able to scroll through the timeline and search all content by keywords or different filters.

Other requirements for the My Meetings page:

1) A search bar on top of the site to search through all of the user's meetings (past and upcoming)
2) Meetings can be searched by keywords, location, type of meeting, tags of a meeting
3) Drop down menu next to the search bar to choose what type of content is displayed
4) Show all meetups
5) Timeframe (choose between past and future events)
6) Type of meeting (4 main categories)
7) Only show favorite meetups
8) Show archived meetups
9) On the right side of the bar there is a timeline that indicates dates of meetings, user can scroll through the timeline to navigate the page faster
10) Meetings are listed along the timeline with their individual dates as they occurred
11) All meetings are displayed in chronological order (the most recent first)
12) Different colors for different types of meetings, same as on the homepage
13) The user has the ability to highlight certain meetups which are then given a more prominent location on the page
14) Highlighted meetups are marked as favorites and pinned on top of the page, regardless of their dates
15) User's favorites can be past events as well as upcoming ones
16) The 'highlights' section on top of the page is visibly separated from the rest of the chronologically displayed events
17) Users have the ability to remove meetups from their personalized My Meetings page by "leaving" a meetup
18) In the same way meetups are added to the My Meetings page by 'joining' a meetup
19) Users have the ability to archive past events without leaving them, archived events don't show up on the My Meetings timeline

I. Page for an individual meeting

From the My Meetings page as well as the Home Feed users can access the page of each individual meeting by clicking on its card in the Feed or My Meetings page.

The page for a certain meeting displays all relevant information added by the creator of the meetings as well as a chatroom and list of people who joined.

1) All relevant information as well as a title picture are displayed on a blackboard on top of the page (type of meetup, description, location, date, for how many people is planned, etc)
2) Underneath there is a chatroom to which everyone who joined the event has access to
3) All users can access the event page and read information but only users who participate are able to join the chat
4) Users have to ability to ask questions to the creator of a meeting prior to joining
5) On the page of the meeting users have the ability to join the meeting, mark the meeting as "I am interested", or share a link to the event via social media
6) Users have to ability to hide an event from their home feed if they choose to

J. Create new meeting

This page should present a form to create a new meeting which the user will be the organizer of. Required information should be the name of the event (text field), the type of meeting (choose one from a list), the date of the meeting (normalized calendar date) and the meeting location (address from google maps, should be the most accurate possible).

Other information such as the duration of the meeting (numerical value in minutes), the price of the meeting (in local asset, undefined if not stated, otherwise numerical value), the expected and maximum number of participants (numerical values) and some additional details on the meeting (text field).

The form should have a create button as well as a cancel Button. The create button will trigger a confirmation window summing up all the given information and asking the organizer to confirm the meeting creation or go back to editing the meeting. If the organizer confirms the meeting creation, it will create the meeting and it will be uploaded to all the other users meeting feed (in the region). The cancel button should reset the form.

A visual for the new meeting card will be automatically uploaded from a bank of images, the chosen image will have to be the most accurate possible regarding the meeting. Once the meeting is created, a chat group for this meeting will be created in the chat section. The organizer is basically the administrator of this chat group and each time a new participant will ask to join the meeting, the organizer will have to either accept/deny his participation from this group chat. Once the meeting is created, a card will be added to the user's 'My meetings' page and only the organizer will be able to edit or delete the meeting.

VI. Specification

A. Create new meeting

On this page, the user has to fill a form with fields corresponding to the following:

1) Name (required): Text field, maximum 50 characters, only alphanumeric
2) Type (required): 2 Drop-down menus, 1 for the main category, can only select one item between (Sport, Outdoor, Entertainment, Culture, Food, Education), this selection is required
   The 2nd drop-down menu will be updated depending on the choice of the 1st drop-down menu, can only select one item, this selection is not required ('—-' if nothing is chosen)
   A 'Other' item is present in the 2nd drop-down menu list, if selected a new text field will appear (20 characters, only alphanumeric) with precision of the item written by the user, not required.
3) Date (required): A text field which is not editable by the user, next to it a button with a calendar icon, when the user clicks on the field or the calendar icon, a new calendar pops out with previous dates in gray (not selectable), user can navigate through the years, months and select the date, when selected, the calendars hides and the text field is filled with the selected date.
4) Time (required): Drop down menu, items are all daily hours in a 15 minutes separation, user has to select one item.
5) Location (required): Search bar coming from google locations API, user will type the location name and a list of locations known by google will appear (autocomplete), user has to select one, a button next to the text field with a map icon is also available, when clicked, a map will pop up and the user can drag a pointer to the location, if the given point doesn't correspond to any of the google API's location, the location will be updated as cardinal coordinates.
6) Duration: Text field with only numeric characters accepted, from 0 to 1440 (24 hours), if text field is not filled in, it is considered as 'undefined'.
7) Price: Price per participant, text field with only numeric characters accepted, from 0 to 99999999999999, if text field is not filled in, it is considered as 'undefined'. The asset used is the one from the country of the set location.
8) Expected participants:Text field with only numeric characters accepted, from 0 to 999999999, if text field is not filled in, it is considered as 'undefined'.
9) Maximum participants: Text field with only numeric characters accepted, from 0 to 999999999, if text field is not filled in, it is considered as 'undefined'.
10) Details: Text field, details are to be written from the organizer, 5 lines of text max, only alphanumeric characters.
11) Create Button: Opens a new page with all the form but the information are not editable (grayed areas), the only

editable field is the picture of the event (selected in the google bank of images depending on the type and location of the meeting). The user can select the graphic used from this bank of images that will appear in the meeting card. The user can then Confirm? Yes/No, if No, back to the form, the new page pops out, if yes meeting is created and back to home page.

12) Cancel Button: Resets the form after alerting the user with an alert box (Confirm? Yes/No) if confirmed

B. User's meetings section

1) Header with MeetnDo logo and MyMeetings title
2) White page background
3) Search bar
    a) Search bar on top of the page to search meetings by keywords
    b) Results are drawn from a database of all of the user's past and present meetings
    c) When executing a search results are displayed as a list on the MyMeetings page
    d) Users can click on the result to reach the page of the individual meeting
    e) Feature to to guess the user's search request by keywords, associated meetings are recommended (auto-complete for search requests)
4) Meetings can be searched by keywords, location, type of meeting, tags of a meeting
5) Ability to filter search result
    a) Drop down arrow next to the search bar to filter what results are displayed
    b) Implementation of checkbox selection filter (by clicking downward arrow user is taken to the checkbox selection)
        i) Show all meetings checkbox selected by default
        ii) Checkbox to select type of meeting (Food, Study, Sports, Activities)
        iii) Checkbox to filter by location (select nearby, my area, all)
        iv) Checkbox to select the timeframe (only show past meetings, only show future meetings)
        v) Checkbox to only show meetings marked as favorites
        vi) Checkbox to only show archived meetings
6) Timeline on the right side of the MyMeetings page
    a) User can move through the timeline by scrolling on the page
        i) Marker on the timeline indicates the current position/date
        ii) User's have the ability to navigate the page faster by clicking and dragging the marker across the timeline or scrolling directly on the timeline
    b) Buttons to show more/ show less (+ or -) on top of the timeline to select the scope of the timeline
        i) Enables the user to switch between Years/Months/Days to control the level of detail on the timeline
        ii) Purpose: more organized MyMeetings page in case multiple meetings for a specific date, more organized overall display for many meetings
    c) Meetings are listed along the timeline as they occurred
        i) Listed chronologically by default
7) Meetings on the MyMeetings page are displayed in boxes
    a) Box includes title of specific meeting in bold letters
    b) Short, general descriptions as preview that users choose when creating a meeting
    c) Location of meeting
    d) Indicator for rough amount of people attending/ interested in specific meeting e.g. ¡10, 10+
    e) Boxes feature slightly rounded corners
8) Different colored boxes for a well arranged layout and usability
    a) Distinguished by the 4 general types of meetings
        i) Red for Food
        ii) Yellow for Education
        iii) Light Green for Sports
        iv) Dark Green for Outdoor
        v) Orange for Culture
        vi) Blue for Entertainment
    b) Hex transparency 50%
9) 'Highlights' section pinned above the regular timeline view
    a) User has the ability to mark meetings as favorites
        i) Star symbol in the right corner of every meeting box
        ii) By default only outlines, by clicking the star is displayed yellow thus marked as favorite
    b) 'Highlights' section visibly divided from the rest of the timeline by light yellow background
10) Controls over content shown on MyMeetings page
    a) Ability to remove meetings from MyMeetings
        i) Leave specific meeting via right click or designated button on the page of the individual meeting
    b) Ability to add meeting to MyMeetings
        i) Via right click on homepage or designated button 'Join Meeting' on the page of the individual meeting
        ii) Mark meeting as 'I'm interested' on the individual page of the meeting
    c) Ability to archive past meetings without leaving
        i) By right click or designated button 'Archive' on the page of the individual meeting
        ii) Archived meetings are not shown on the timeline of MyMeetings but can still be searched for

iii) Archived meetings are displayed with grey background

C. Page of an individual meeting

The page of each individual meeting contains all relevant information about the event. Users can access the page from anywhere e.g. from the Home Feed, MyMeetings or a user's profile by simply clicking on the box or the title of a specific meeting. All users are able to access the page of a meeting.

1) Background of the page is shown in the same color as the meeting box but at 10% opacity

2) Title of the meeting on top of the page in bold letters

3) Contains all information about the meeting

a) Type of meeting (as bullet point beneath headline)

b) Description of the meeting as put in by the creator of the meeting as ‘Details’

i) Text field, Maximum 5 lines of text, alphanumeric characters only

c) General information displayed as

i) ‘ When: ”dddd, dd MMMM yyyy HH:mm” ‘ as chosen by the creator

ii) Approximate duration is stated underneath date and time, if the creator has provided a duration

iii) Location of the event displayed on the right of time, date and duration

A) Section of the map where the meeting will take place is embedded in the page through Google Maps API/HTML (small window)

B) Google Maps pin on the map marks the exact location

C) Written address/location is displayed beneath the Google Maps window

D) By clicking on the map the user is taken to Google Maps with the event location marked

iv) Price per participant is displayed underneath as ‘Price: Value’

A) If no price provided, ‘Price’ is not shown

B) If price is indicated as 0, it is displayed as ‘Price: Free’

C) If no specific price provided, price can also be displayed as an estimate as chosen by the creator ($/$$/$$$)

v) Expected participants as ‘Expected participants: Value’ if provided by creator

vi) Maximum participants as ‘Maximum participants: Value’ if provided by creator

vii) Beneath, the creator/host of the meeting is indicated by displaying a small, circular profile picture as well as the name

A) Users can click on the creator to be taken to the person's profile page

4) Underneath the information about the meetings there are buttons the user can click, those buttons are aligned

a) ‘Join’ button to join the meeting

b) ‘I'm interested’ button to mark as interested in

c) ‘Join Chat room’ button, only becomes visible once the user has joined the meeting

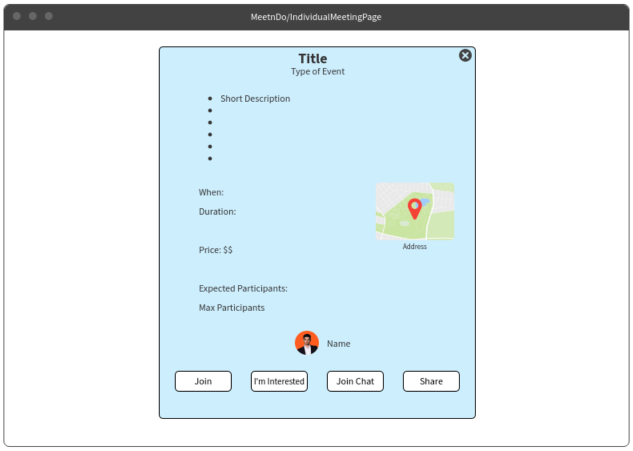
d) Links to a chat page of the individual meeting

e) ‘Share’ buttons from various social media plugins to share on social media platforms

f) ‘Not interested’ button, on the lower right corner and smaller than the other buttons

i) Meetings marked as ‘Not interested’ will not be suggested to the user again on the Home Feed

5) To exit the page of an individual meeting, click on the small Exit button in the upper right corner (X)



D. Sign-up page

1) With a Google Account

2) With an email

a) Name — Text field, 50 characters max, can't be empty

b) Email address — Text field, 255 characters max, unique and can't be empty

c) Password — Text field (password type), 255 characters max, can't be empty

d) Confirmation password — should match the password

e) Location — Text field which is auto-completed via an API (or a table in database)

E. Chat page

The chat section is divided in two columns. The left column contains an opened chat room. The right column contains a list of already started chat rooms (discussions) which contain at least one message.

1) Left column: open discussion

a) A header holding conversation partner's information

i) Rounded user profile picture. By clicking it redirects to this user profile page

        - ii) Full Name: clicking it redirects to this user profile page
    - b) A chat room when messages are displayed. Next to each message is displayed the send time.
        - i) Left side contains messages received from conversation partners.
        - ii) Right side contains messages sent by the user.
    - c) Area where a message is written. A message can contain text and/or a GIF. A message can not be empty.
        - i) Text field: alphanumeric and special caracters, no limitation
        - ii) GIF: the user can click a GIPHY button and search for a GIF by typing a keyword in a search box
        - iii) Submit button
- 2) Right column: chat rooms list. Each item are clickable and redirects to profile
    - a) Rounded user profile picture
    - b) Full Name

F. Profile page

The page contains all public information about a user.

1) Profile picture
2) Full name
3) Location
4) Description
5) Meetup list