

SERVER SIDE PROGRAMMING  
FIRST TERM ASSIGNMENT

# DW2E

# MESSAGING APP

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# THE PROJECT

This is responsive instant messaging single page application to talk about topics in chat rooms with other people, something similar to WhatsApp or Telegram. This project has been done as an assignment of Server Side Programming module.

## Features

- Access the application with your e-mail and password.
- If you don't have an account, you can create it. E-mail verification needed (disabled by default).
- If you don't remember your password, you can reset it by e-mail (disabled by default).
- Request friendship to other users with their e-mails.
- Create chat rooms and add some of your friends.
- Send messages to chat rooms with other users.
- Messages can contain attachment files or images.
- You can accept or decline friendship or block a friend.
- You can send messages to non-friends users if your are in the same chat room (but you can't see their avatars).
- You can modify your profile: name, e-mail, password and avatar.
- Uploaded avatars will be resized to a square image of maximum 200x200.

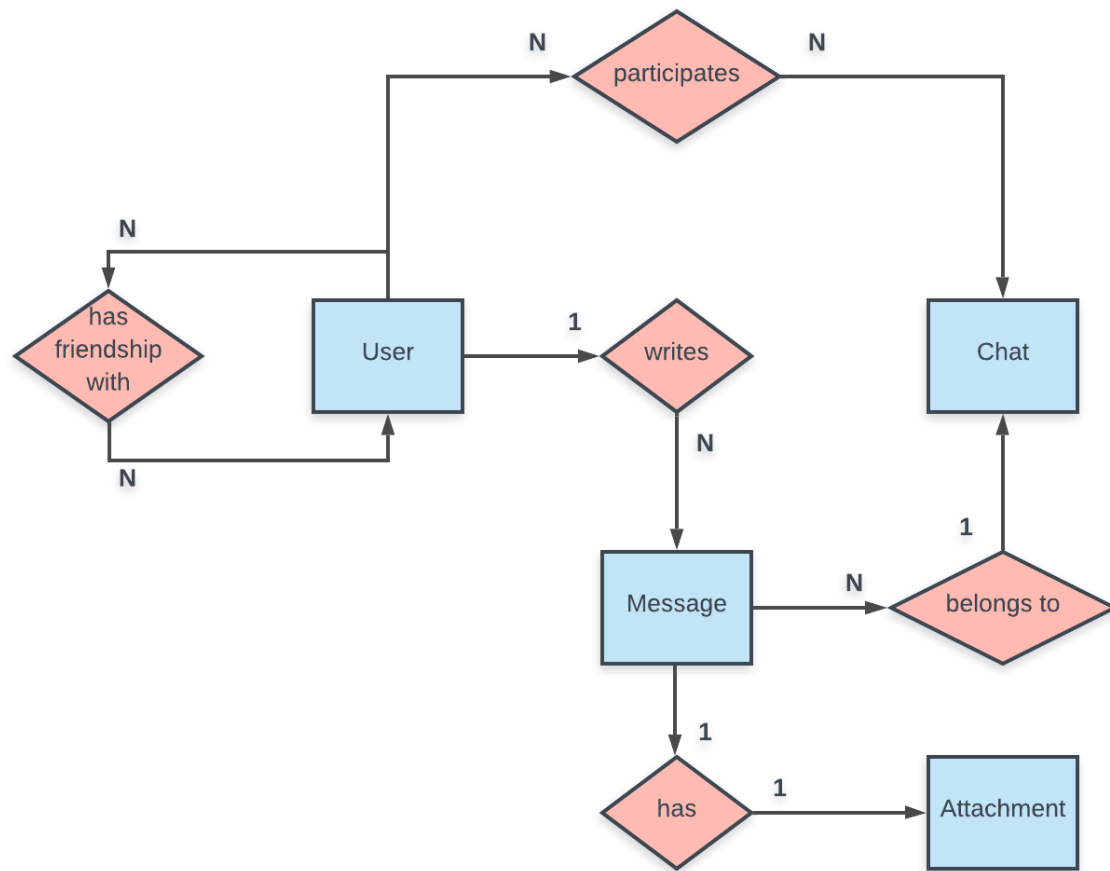
## Requeriments

- PHP >= 7.1
- Composer
- MySQL

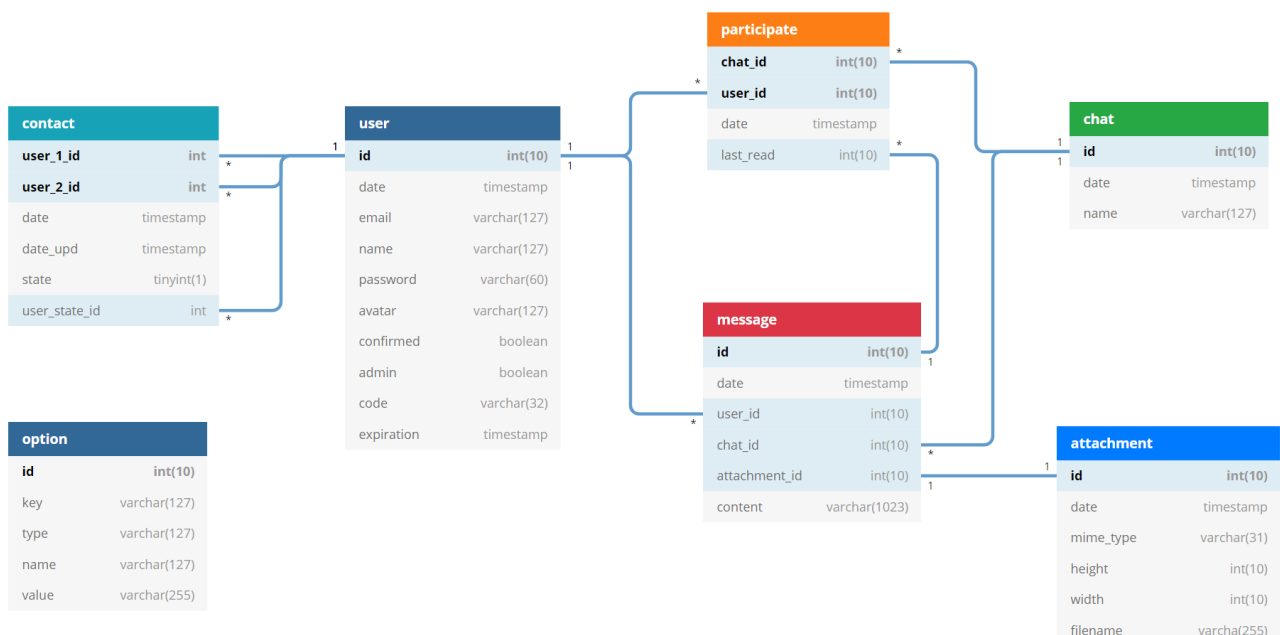
## Implemented extensions

<b>A1 - Self-registration</b>	Yes, with a register form and a confirmation e-mail
<b>A2 - Password recovery</b>	Yes, with a reset password e-mail
<b>A3 - Several recipients</b>	Yes, by sending messages to a chat room
<b>A4 - Encrypted password</b>	Yes, passwords are hashed before stored
<b>A5 - User avatar</b>	Yes, users can upload their avatars
<b>A6 - User profile</b>	Not sure, edit profile option exists to change avatar, email or name
<b>A7 - Friendship</b>	Yes, you can request friendship with anyone by e-mail
<b>A8 - Groups</b>	Yes, by adding people to a chat room
<b>A9 - Admin zone</b>	Yes, single admin user can edit some main application settings
<b>A10 - Attached files</b>	Yes, you can attach a file to a message
<b>A11 - Images</b>	Yes, if attached file is an image, it will be displayed directly
<b>A12 - AJAX</b>	Yes, once logged-in all the actions occur without page loading

## E/R Scheme



## Logical model





# MAIN DESCRIPTION

This application uses MVC pattern. There is a **init.php** file in project root folder that defines all constants needed in the application and requires the rest of the files.

## Config folder

Contains configuration files. By default only an **install.sql** file is here, which has the code to create all database tables and store main settings in **option** table.

Once application was installed, a **database.json** file will appear here with credentials to connect to the database.

## Controller folder

Contains controllers of the application, they attend http request, call models if needed, do certain actions and finally call the view to echo the result (or send an email). Controllers are:

- **MainController** - Handle requests of the whole app. It takes requests data, calls the models needed, manage the actions to perform and returns json response or calls the view to echo html content or send an email.
- **MailController** - Handle email communications. It requires PHPMailer to work.
- **SessionController** - Handle sessions in order to login, logout or check if there is a logged user and if he is admin or not.
- Rest of the files here are traits to be used by MainController: **AdminController**, **ChatController**, **FriendController**, **UserController**.

## Core folder

Contains several files with general uses which will be used all along the code. These files are:

- **Database** - Abstract class to be extended by models in order to connect and make operations over the database.
- **Helper** - Class that contains useful static functions for several general purpose uses.
- **Install** - Class to install the application for the first time use.
- **Text** - Class with text relative uses. Here you can find all the texts of the whole web application in order to make it easy to translate to another languages.

## Model folder

Contains model classes that represent each of the database structure entity, previously explained.

These models are:

- **Option**
- **User**
- **Contact** (this is only a trait to be used by User model)
- **Chat**
- **Message**
- **Attachment**

## Public folder

This will be the public accesible folder. It contains files that calls the appropriate controller or returns a file. Also, here is the folder with needed assets like js script, stylesheet or fonts.

- **index.php** - Where the main action goes. It simply loads init.php file and calls the main controller main method to handle the request.
- **ajax.php** - Where ajax requests from front page go. It simply loads init.php file and calls the main controller ajax method to handle the request.
- **attachment.php** - Check if logged user can view an attachment and force him to download the file. If the file is an image, it will show it instead force to download. Attached files are outside public folder due to security reasons.
- **avatar.php** - Check if logged user can view an avatar and shows it. Avatar files are outside public folder due to security reasons.

## Upload folder

Simply holds avatar images and message attached files. This folder is outside public folder in order to prevent direct file access.

## View folder

This folder contains all html code of pages and e-mails. It also contains the **View** class, which is in charge of load all that html code and echoes it (or return it if it is an e-mail). Methods of this class uses strtr function to replace {{KEYWORDS}} by real content.

Public methods of View class are related directly with each of the pages and e-mails this application can generate. These are:

- **install** - Installation options form to be displayed when the application hasn't been installed.
  - **login** - Login/Register screen
  - **option** - Main application settings to be updated by admin.
  - **main** - Main page of the application with all functionality
  - **recover** - Destination page of the reset password e-mail
  - **error** - Hopefully this page will never be displayed. It shows a critical unexpected error.
- 
- **emailConfirm** - Returns the confirm account e-mail
  - **emailReset** - Return the reset password e-mail

## Full code documentation

Full code documentation available at **[docs.dw2e.online](https://docs.dw2e.online)**

This contains full code with comments, and all classes and methods description.

For more info and updated code, check out my github repository:

**[github.com/bgonp/msg.dw2e](https://github.com/bgonp/msg.dw2e)**

## Installation

- Create in your server a MySQL **database** with a user who can use it.
- In the target folder **clone** this project:  

```
$ git clone https://github.com/bgonp/msg.dw2e.git .
```
- Ensure the folders **config/upload/attachment/** and **upload/avatar/** have write permissions.
- **Install** needed packages (required packages are PHPMailer, jQuery, font-awesome and bootstrap):  

```
$ composer install
```
- **Visit** the url where the app has been installed to see the installation menu (Img.1).
- Here you have to **introduce** your e-mail and password in order to create the admin user.
- In addition you need to introduce the information to **access** the database.
- Once you saved this data, you can access the **admin panel** through your email and password (Img.2).
- In the admin panel you can configure more **settings** (Img.3, see settings section).
- **That's all**. Now people can sign up and use the app.

The image displays three screenshots of the DW2E Messaging App interface:

- Install:** A form for initial setup with fields for Admin e-mail, Admin Password, Admin Password (repeat), Database host, Database name, Database user, and Database password. An "Install" button is at the bottom.
- Login/Register:** A form with tabs for "Login" and "Register". The "Login" tab is active, showing fields for E-mail and Password, and a "Login" button.
- Options:** A settings page with various configuration options:
  - Page title: DW2E Messaging App
  - Password conditions: (?=.\*[0-9]+)(?=.\*[A-Z])(?=.\*[a-z]).{6,16}
  - Name conditions: \w{2,32}\w
  - E-mail conditions: [^@]+\@[^\@]+\.[a-zA-Z]{2,}
  - Main color: A color picker showing a dark blue color.
  - Auxiliary color: A color picker showing a light blue color.
  - Max avatar weight (KB): 1024
  - Max attachment file weight (KB): 2048
  - E-mail confirmation required: 0
  - E-mail host:
  - E-mail user:
  - E-mail password:
  - E-mail from address:
  - E-mail from name:



## Settings

The admin user can modify some settings from the control panel:

- Password requisites with a regex for security reasons.
- Name of users and chats requisites with a regex.
- E-mail conditions with a regex to, for example, limit registration to a certain domain.
- Colors of the app (main and auxiliary colors).
- Max file size of avatars and messages attachments.
- Enable e-mail confirmation at register and set e-mail credentials.

### Options

Page title

DW2E Messaging App

Password conditions

(?=.\*[0-9]+)(?=.\*[A-Z]+)(?=.\*[a-z]+).{6,16}

Name conditions

\w{2,32}\w

E-mail conditions

[^@]+\@[^@]+\.[a-zA-Z]{2,}

Main color

Auxiliary color

Max avatar weight (KB)

1024

Max attachment file weight (KB)

2048

E-mail confirmation required

0

E-mail host

E-mail user

E-mail password

E-mail from address

E-mail from name

## Usage

### REGISTER

- Click on Registration tab.
- Enter your name, e-mail and password (twice). Optionally, you can also upload an avatar.
- If e-mail confirmation is enabled, you will receive an email with a button to confirm your account.
- If not, you will be automatically logged in.

### LOGIN

- Simply write your e-mail and password in the Login box.
- If you don't remember your password you can request a new one by clicking on the link below password box. This functionality will be available only if e-mail confirm option is enabled (see settings section).

### LOGOUT

- Simply click on Logout button in the upper menu and confirm.

### PROFILE

- In the upper menu, you can click on My profile button to edit your personal info.
- If you change your e-mail and e-mail confirm option is enabled, you will have to re-confirm your account. Otherwise you won't be able to login again once you logout.

## FRIENDS

- In the left sidebar, click on Friends tab button to see your friends list.
- Here you can request friendship with someone by introducing your friend's e-mail and clicking on Add button.
- In the left sidebar, click on Requests tab button to see your received friendship requests.
- If someone requests your friendship here you can Accept or Decline it.
- Once you accept a request or someone accept your request, you can see this friend in the friends-list.
- If you want to block a friend, click on the forbidden icon at the bottom-right corner of your friend box. A blocked friend won't be able to send you friendship requests or create chat rooms with you. But you will continue receiving their message in any chat room already created with both of you.

## CHATS

- If you want to create a chat room you must first select one or more friends in your friends list by clicking on the checkbox of each one. Then you have to introduce in the inbox below the new chat room name and click on New chat button.
- You will be redirected to chats list and here you can see the new chat room. Click on it and you can start writing here.
- If you want to add a friend to the current chat room, select him it in the Add a friend... box and click on the + icon.
- If you want to leave a chat room, click on the forbidden icon at the right of the chat room and confirm.
- You can also filter chat rooms by using the filter input here. This is useful if you belongs to several chat rooms.

## MESSAGES

- Once you are in a chat room you can see at the left who are in this room and will be able to see all the messages here. Also, you can see their avatars in the upper side of the messages section (if someone in the room is not your friend, you won't see his avatar, but you can see his messages and viceversa).
- To write a message simply write it in the text box below and click on Send button. Max 1000 characters.
- Additionally, you can attach a file to your message by clicking on the paperclip button. If this file is an image you will see a preview of it once you send the message. If it isn't an image, you will see an icon in your message to download the file.
- You can't upload a file if you don't write anything in the message box. A message text will be always needed.

Login

Register

E-mail

Password

I don't remember my password

Login

Login

Register

Name

Borja

E-mail

borja@ejemplo.com

Password

.....

Password (repeat)

.....|

Avatar

Upload avatar

Register

Login

Register

Name

E-mail

Password

Password (repeat)

A confirmation e-mail was sent

Register


Reset your password

Password

Password (repeat)

Reset your password

Hello, Borja!

 My profile Logout


Chats

**Friends**

Requests


Add friends by e-mail...

Add

 **Hector Tubilleja**  
hector@ejemplo.com


☒

☐

 **Alejandro**  
alejandro@ejemplo.com


☒

☐

 **Andrea**  
andrea@ejemplo.com

☒

☐

 **Pedro**  
pedro@ejemplo.com

☐

☐


Pedro's birthday

New chat

 Write your message...

Send

Hello, Borja!

 My profile Logout

ChatsFriendsRequests


Filter chats...


Talking about DAW

**Borja**  
borja@ejemplo.com

**Hector Tubilleja**  
hector@ejemplo.com

**Manuel Blanco**  
manuel@ejemplo.com

Add a friend... 

Pedro's birthday 

12:11 01/12/2019


Borja joins the chat

Borja

I just read all your messages...

19:21 01/12/2019

Borja



O\_O

19:23 01/12/2019

Hector Tubilleja


XD

19:23 01/12/2019

Hector Tubilleja

I know. In addition, check this attachment...

19:24 01/12/2019

 Write your message...

Send