
Software Requirements Specification

for

Teverola Times Journal

Version 1.0 approved

Prepared by Paolo Formola

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1. Introduction

1.1 Purpose

The purpose of this document is to present a detailed description of the Teverola Times Journal web application. It will explain the purpose and features of the web app, the interfaces and what it will do.

1.2 Document Conventions

This Document was created based on the IEEE template for System Requirement Specification Documents.

1.3 Intended Audience and Reading Suggestions

- *Typical Users, also students who want to use the application for networks*
- *Programmers who are interested in working on the project by further developing it or fix existing bugs*

1.4 Product Scope

Teverola Times Journal is a web application that people can use to interact with an online newspaper. Users, Journalists and Administrators can consult the website, and journalists could also publish articles online, which will be available to everyone.

1.5 References

Github Repository :
<https://github.com/Formola/Teverola-Times-Journal>

IEEE Template for System Requirement Specification Documents:
<https://goo.gl/nsUFwy>

2. Overall Description

2.1 Product Perspective

Teverola Times Journal is developed for managing an online newspaper , so for everyone who is interested in online-reading news, and also for journalists who want to show off by publishing articles. It is an open source project.

2.2 Product Functions

Common features :

- Allow any users to signup
- Allow any users to login
- Allow any users to logout

Normal Users features :

- Edit profile
- Read the articles (only for registered account)
- Search articles by keyword

Journalists features :

- Edit profile
- Search articles by keyword
- Publish an article
- Modify their own articles
- Delete their own articles

Admin features :

- Edit profile
- Search articles by keyword
- Users Management (including role changes)

2.3 User Classes and Characteristics

Only registered users can access the website. They can be divided into three categories :

- Common User , who wants to read articles
- Journalist , who wants to read articles and also publish or modify them
- Admin of the newspaper , who wants to manage other users

2.4 Operating Environment

- Windows 10
- Mac OS X
- Linux

2.5 Design and Implementation Constraints

- *Languages: JSX, PHP, Javascript*
- *Database: MySQL PhpMyAdmin*
- *Communication Protocol: HTTP*
- *Server-Side technology: PHP*

2.6 User Documentation

Refer to guide.txt

2.7 Assumptions and Dependencies

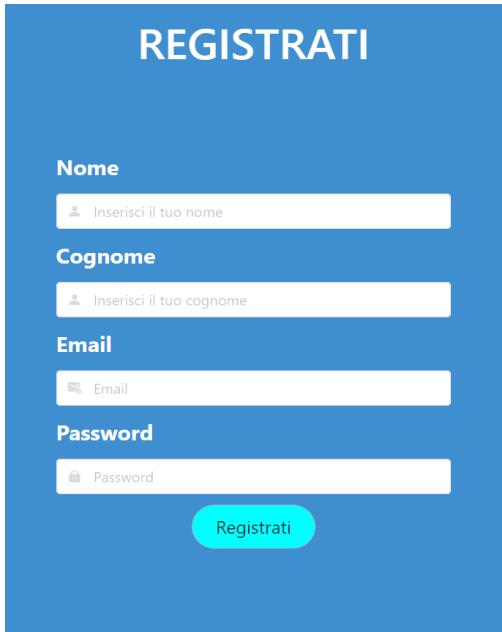
Teverola Times Journal is developed in Javascript and PHP mainly, using ReactJS for the front-end, which is a Javascript library for building user interfaces. It requires to be runned locally

- *Download ox XAMPP on : <https://www.apachefriends.org/it/index.html>*
- *Download of Nodejs : <https://nodejs.org/it/download/>*
- *Download Composer for PHP ; <https://getcomposer.org/download/>*

3. External Interface Requirements

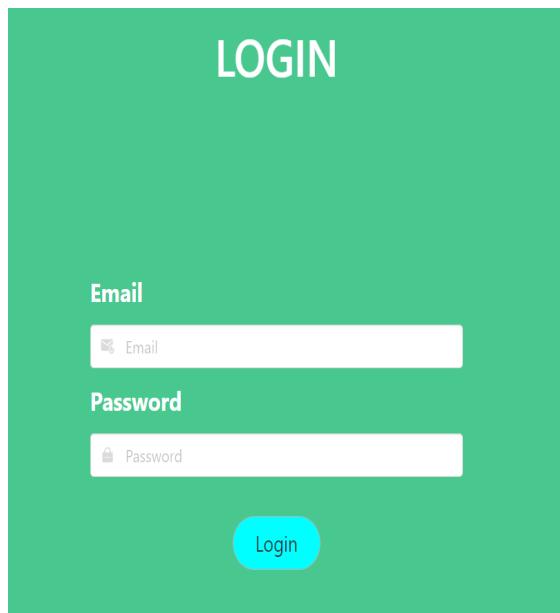
3.1 User Interfaces

1. SIGN-UP INTERFACE



The image shows a registration form titled "REGISTRATI" (Register) in large white capital letters at the top. The form has a blue background. It contains four input fields: "Nome" (Name), "Cognome" (Surname), "Email", and "Password". Each field has a placeholder text and a small icon indicating the type of input. Below the fields is a teal-colored button labeled "Registrati" (Register).

2. LOGIN INTERFACE



3. HomePage (for ADMIN user)

TEVEROLA TIMES

Il Tuo Profilo Gestisci Utenti

Cerca Articolo

Cerca Articolo per @Argomento...

Sei Loggato come : ADMIN

COME USARE CORRETTAMENTE UN
OSCILLOSCOPIO
@Science

L'Oscilloscopio è lo strumento più noto e importante nell'uso quotidiano all'interno di un laboratorio. Esso ha ottenuto un così notevole successo nel passato poiché permette di visualizzare come sono

2022-07-11 13:57:05

[Read More](#)

Vita Su Marte
@Terraformazione

vita su marte??? A questa domanda non sappiamo ancora dare una risposta vera e propria ma si spera che in futuro la situazione possa cambiare. In che modo?? Rendendolo più simile possibile alla terra

2022-07-09 22:05:09

[Read More](#)

Il Ritorno Di Pogba!
@Calcio

A Torino è esplosa la febbre per Paul Pogba. A distanza di 6 anni, il centrocampista francese riabbraccia il popolo della Juventus, nonostante l'ufficialità debba ancora arrivare. Il suo sbarco in Ita

2022-07-10 18:17:13

[Read More](#)

Software Requirements Specification for Teverola Times Journal

Page 5

4. HomePage (for Journalist user)

The screenshot shows the Teverola Times website interface for journalists. At the top, there is a header with the logo 'TEVEROLA TIMES', a search bar labeled 'Cerca Articolo' with placeholder text 'Cerca Articolo per @Argomento...', and a 'Log Out' button. The main content area displays three news items:

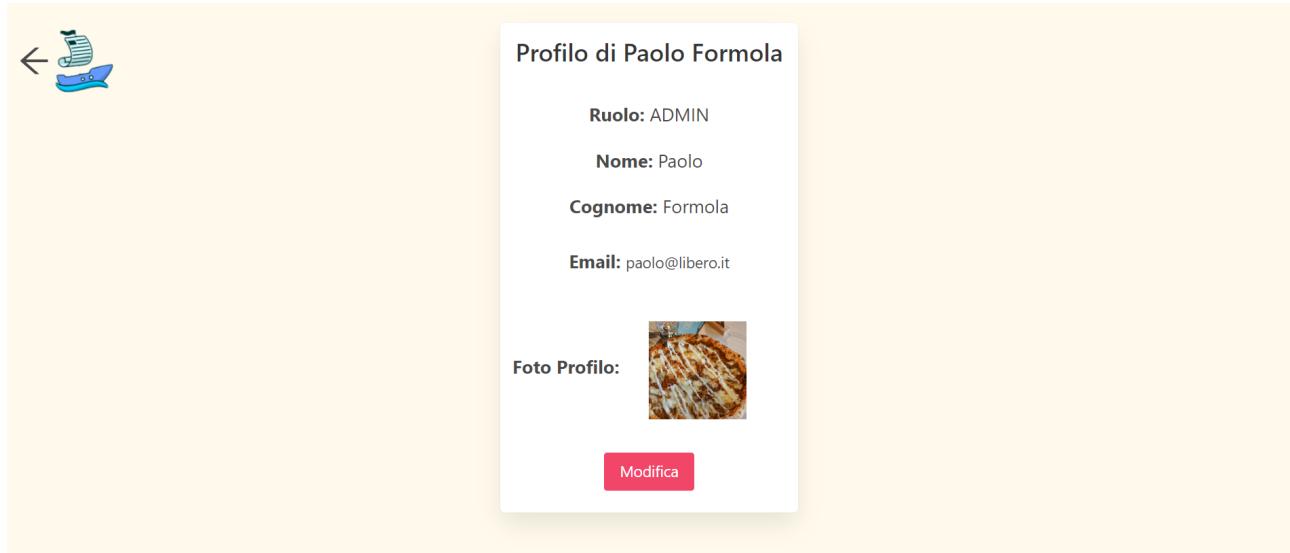
- Il Ritorno Di Pogba!** **@Calcio**
A Torino è esplosa la febbre per Paul Pogba. A distanza di 6 anni, il centrocampista francese riabbraccia il popolo della Juventus, nonostante l'ufficialità debba ancora arrivare. Il suo sbarco in Ita
2022-07-10 18:17:13
[Read More](#)
- LUKAKU ALL'INTER !!!** **@Calcio**
MILANO - 321 giorni dopo, Romelu Lukaku è tornato all'Inter. Un desiderio fortissimo quello dell'attaccante belga, che oggi si è finalmente realizzato. Nel suo secondo primo giorno in nerazzurro Big R
2022-07-10 18:33:48
[Read More](#)
- Totti Da L'addio Al Calcio Giocato** **@Calcio**
"Maledetto tempo. Purtroppo è arrivato questo momento che speravo non arrivasse mai. Spegnerne la luce non è facile, adesso ho paura e questa volta sono io che ho bisogno di voi e del vostro calore". E
2022-07-10 23:00:06
[Read More](#)

5. HomePage (for common users)

The screenshot shows the Teverola Times website interface for common users. At the top, there is a header with the logo 'TEVEROLA TIMES', a search bar labeled 'Cerca Articolo' with placeholder text 'Cerca Articolo per @Argomento...', and a 'Log Out' button. The main content area displays two food-related articles:

- PIZZA MARGHERITA FACILE** **@Cibo**
È la pizza per antonomasia, creata, secondo tradizione, a Napoli nel 1889 dal pizzaiolo Raffaele Esposito per l'allora regina d'Italia, Margherita di Savoia. Ve la propongo in una ricetta "facile" e v
2022-07-10 21:58:23
[Read More](#)
- CASATIELLO** **@Cibo**
Qualcosa che sul tavolo della colazione di Pasqua non può mancare: il casatiello napoletano. Fragrante e saporito si accompagna ottimamente con salumi e formaggi ma se la cava benissimo anche da solo.
2022-07-10 22:05:08
[Read More](#)

6. ProfilePage



7. WriteArticle Page (only for journalists)



8. ArticlePage

The screenshot shows a web-based article page. At the top left is a back arrow icon with a small sailboat icon next to it. The main title of the article is "Il Ritorno Di Pogba!" followed by the subtitle "@calcio". The article text discusses Paul Pogba's return to Juventus. Below the text is the publication date "2022-07-10 18:17:13" and the author "Pubblicato da : Lele Adani". To the right of the text is a thumbnail image of a man with a beard, identified as the author Lele Adani. To the right of the author's image is a larger image of a soccer player from behind, wearing a Juventus jersey with the name "POGBA" and the number "10". At the bottom of the article section are two buttons: a green "Modifica Articolo" button and a red "Elimina Articolo" button.

9. Modify Article Page (only for the journalist who published them)

The screenshot shows a modification form for an article. The title of the form is "Ciao Lele...modifica il tuo articolo...". The form fields include:

- Titolo:** A text input field containing "Modifica Test".
- Argomento:** A text input field containing "calcio".
- Immagine:** A text input field containing a URL: "https://i.imgur.com/Yd5xZei.png".
- Body:** A rich text editor containing the text: "sto modificando articolo pogba...
A Torino è esplosa la febbre per Paul Pogba. A distanza di 6 anni, il centrocampista francese riabbraccia il popolo della Juventus, nonostante l'ufficialità debba ancora arrivare. Il suo sbarco in Italia delle ultime ore".

At the bottom is a blue "Invia Modifiche" button.

10. Modify Profile Page (for everyone)

...Modifica il tuo profilo...

Nome
Lele

Cognome
Adani

Immagine Profilo
https://i.imgur.com/lppMfvs.png

Invia Modifiche

11. Users Management Page (only for ADMIN)

User_ID	UserType	Nome	Cognome	Email	Salary	DataInizioAbbonamento	DataFineAbbonamento	Modifica	Cancella
0	ADMIN	Paolo	Formola	paolo@libero.it					
4	GIORNALISTA	Daniele	Gallo	daniele@gallo.it	400				
33	GIORNALISTA	Michele	Ciaramella	mikele@ciaramella.it	1000				
42	UTENTE	Antonio	Guerriero	antonio@guerriero		2022-07-10 18:04:07	2022-08-10 18:04:07		
43	GIORNALISTA	Lele	Adani	lele@adani	4000				

Attenzione...se elimini i giornalisti eliminerai anche gli articoli da loro pubblicati!

12. SearchBar feature

The screenshot shows the Teverola Times Journal website. At the top, there is a logo with a stylized boat and the text "TEVEROLA TIMES". To the right of the logo is a "Il Tuo Profilo" button. A search bar with the placeholder "Cerca Articolo" and a dropdown menu showing "calcio" is centered. On the far right, it says "Sei Loggato come : UTENTE" and has a "Log Out" button. Below the search bar, there are three news cards:

- Il Ritorno Di Pogba**
@Calcio
A Torino è esplosa la febbre per Paul Pogba. A distanza di 6 anni, il centrocampista francese riabbraccia il popolo della Juventus, nonostante l'ufficialità debba ancora arrivare. Il suo sbarco in Ita
2022-07-10 18:17:13
[Read More](#)
- LUKAKU ALL'INTER !!!**
@Calcio
MILANO - 321 giorni dopo, Romelu Lukaku è tornato all'Inter. Un desiderio fortissimo quello dell'attaccante belga, che oggi si è finalmente realizzato. Nel suo secondo primo giorno in nerazzurro Big R
2022-07-10 18:33:48
[Read More](#)
- Totti Dà L'addio Al Calcio Giocato**
@Calcio
"Maledetto tempo. Purtroppo è arrivato questo momento che speravo non arrivasse mai. Spiegare la luce non è facile, adesso ho paura e questa volta sono io che ho bisogno di voi e del vostro calore". E
2022-07-10 23:00:06
[Read More](#)

3.2 Hardware Interfaces

No particular Hardware requirements.

3.3 Software Interfaces

Database: MySQL PhpMyAdmin.

For front-end Teverola Times Journals requires [Nodejs](#), which provides a runtime environment to execute JavaScript code from outside a browser. It also needs [NPM](#); the Node package manager is used for managing and sharing the packages for [React](#). NPM will be installed along with Nodejs. Next step is to install a tool called [create-react-app](#) using NPM. This tool is used to create react applications easily from our system.

About the back-end, Teverola Times Journals is php-based, ando also requires [php composer](#), which is an application-level package manager for the PHP programming language , which provides a standard format for managing the dependencies of PHP projects and required libraries.

3.4 Communications Interfaces

Communication protocol: HTTP.

Teverola Times Journal requires an internet connection to fetch the articles or users data and eventually other update/insertion. In particular HTTP requests are handled with [Axios](#) which is a promise-based HTTP Client for node.js and the browser. On the server-side it uses the native node.js http module, while on the client (browser) it uses XMLHttpRequests.

Web Authentication, Session Management, and Access Control:

In Teverola Times Journal it is actually necessary to maintain login "sessions", so that once a user logs in, they can continue to access different parts of the application without having to log in (i.e. authenticate) over and over for each subsequent "http" request made to the webserver. There are mainly two approaches to session management,

- Session or cookie based approach
- JWT-based approach (JSON Web Tokens).

Teverola Times Journal uses a JWT-based approach for session management. JWT contains JSON objects which have the information that needs to be shared. Each JWT is also signed using cryptography (hashing) to ensure that the JSON contents (also known as JWT claims) cannot be altered by the client or a malicious party. A JWT contains three parts:

- Header: Consists of two parts:
 - The signing algorithm that's being used.
 - The type of token, which, in this case, is mostly "JWT".
- Payload: The payload contains the claims or the JSON object.
- Signature: A string that is generated via a cryptographic algorithm that can be used to verify the integrity of the JSON payload.

Encoded PASTE A TOKEN HERE

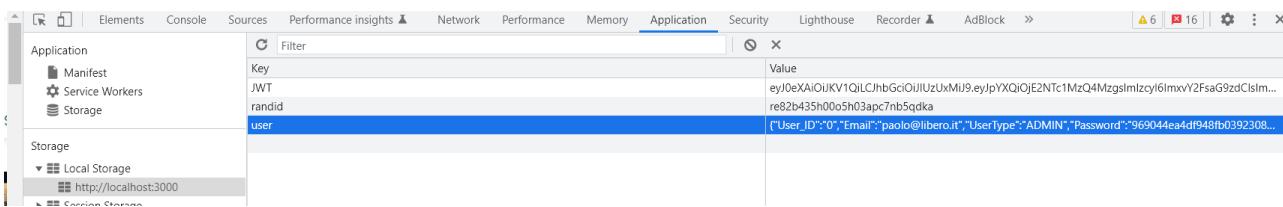
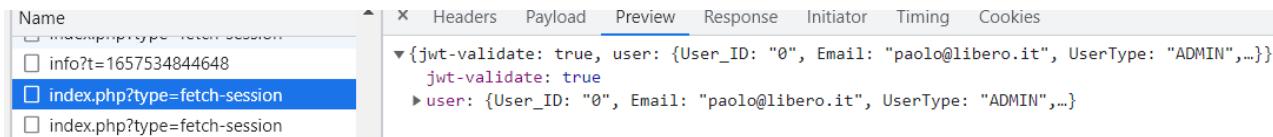
```
eyJhbGciOiJIUzI1NiIsInR5cCI6IkpXVCJ9.eyJzdWIiOiIxMjM0NTY3ODkwIiwibmFtZSI6IkpvaG4gRG9lIiwiaWF0IjoxNTE2MjM5MDIyfQ.7u0ls1snw4tPEzd0JTFaf19oXo0vQYtowiHEAzn74
```

Decoded EDIT THE PAYLOAD AND SECRET

HEADER: ALGORITHM & TOKEN TYPE
{ "alg": "HS256", "typ": "JWT" }
PAYLOAD: DATA
{ "sub": "1234567890", "name": "John Doe", "iat": 1516239022 }
VERIFY SIGNATURE
HMACSHA256(base64UrlEncode(header) + "." + base64UrlEncode(payload), <input type="text" value="tyk123"/>) <input checked="" type="checkbox"/> secret <input type="checkbox"/> base64 encoded

The approach used in Teverola Times Journal is as follows :

If login is successful , webserver generate a JWT and send it back to the client. When the client receives a JWT, it will store it(using LocalStorage in React) and use it with every future request to the application. The JWT will be created with PHP and Composer, using the Firebase PHP-JWT library, a third-party library that simplifies working with JWTs; the creation phase is managed in the index.php file (see `$_GET["type"] == "user-login"`). At the end of this phase, the user and its jwt will be returned , and saved in the local storage.



At this point, validation (also handled in index.php) is called up at each page change (see `$_GET["type"] == "fetch-session"`). Upon logout, both user and jwt are removed from local storage, and the user is logged out and redirected to the StartedPage.

4. System Features

This section demonstrates Teverola Times Journal most prominent features and explains how they can be used and the results they will give back to the user

4.1 System Feature 1 - Sign Up (All users)

There is how the sign up is handled by Teverola Times Journal

4.1.1 Description and Priority

All users, after being rendered on this page, can then register their account on the phpMyAdmin database specially built for the application

4.1.2 Stimulus/Response Sequences

If the data on the form are all correct, the system will return a message that confirms the registration; otherwise a message of error will be shown

4.1.3 Functional Requirements

All datas on the form should be coherent, so empty fields are not allowed , or missing @ in email form. All fields are required. The password will not be saved in clear text on the database but will be saved using the MD5 hashing algorithm

4.2 System Feature 2 - Login (All users)

There is how Login is handled by Teverola Times Journal

4.2.1 Description and Priority

Each user can access the web application, inserting their credentials. At the start, all users are created on the database as common users, waiting for some admins to eventually improve their role.

4.2.2 Stimulus/Response Sequences

If the credentials are correct, the system will redirect the user to his dashboard of competence (role-based) ; otherwise a message of error will be shown.

4.2.3 Functional Requirements

All datas on the form should be coherent, so empty fields are not allowed , or missing @ in email form. All fields are required.

4.3 System Feature 3 - Modify Profile (All Users)

There is how the user's profile modify is handled in Teverola Times Journal

4.3.1 Description and Priority

For any user there is a button that redirects to their profile page. Here users can view their profile data, and possibly change parameters such as name, surname and profile picture

4.3.2 Stimulus/Response Sequences

On the Home Page, the user can click on the "Il Tuo Profilo" button, so they will be redirected to the aforementioned page, where there is a button that takes you to an edit page, where users can enter new values for the data they intend to change

4.3.3 Functional Requirements

Users, redirected to the edit page, initially view the fields with their data that are already saved in the database, they can then decide to change those values or just some of them, and finally send the changes.

4.4 System Feature 4 - Search Articles by @Argument (All users)

There is how the articles search is handled in Teverola Times Journal

4.4.1 Description and Priority

All users can search for articles based on the argument tag in the search bar.

4.4.2 Stimulus/Response Sequences

The user types a keyword in the search bar, and after sending the request via a special button, and the resulting articles will then appear on the home page

4.4.3 Functional Requirements

If nothing is typed in the search bar, the home page will include all the articles in the database,

4.5 System Feature 5 - View of Article in full page (All users)

There is how the articles view is handled in Teverola Times Journal

4.5.1 Description and Priority

Apart from viewing a small preview of the articles on the home page, users can also view them on a page entirely dedicated to them by clicking on the Read more button.

4.5.2 Stimulus/Response Sequences

Users, after clicking on the read more button in the preview of the articles on the home page, are redirected to a page containing the complete article in full screen related to its image

4.5.3 Functional Requirements

The user cannot access the articles page to be viewed in full screen if he does not first click on the relevant read more button of a particular article

4.6 System Feature 6 - Publish Articles (Only Journalists)

There is how journalists can publish their own articles in Teverola Times Journal

4.6.1 Description and Priority

Only journalists, after logging in, will be redirected to the Home Page where there will be a "Publish" button for them, through which they will be redirected to the article writing page

4.6.2 Stimulus/Response Sequences

The journalist clicks on the "Publish" button from their homepage, and is then redirected to the WriteArticle page (reserved for journalists only and not accessible by users and admin). At this point, the journalist can fill in the relevant forms for the publication of the new article

4.6.3 Functional Requirements

Only journalists have access to this feature and must necessarily be logged in to use it

4.7 System Feature 7 - Modify and Delete Articles (Only Journalists)

There is how journalists can modify their own published articles in Teverola Times Journal

4.7.1 Description and Priority

Only journalists, after clicking on the read more button in the article preview, are redirected to the full screen page of the article, and only if they are the corresponding writers of that article, can they edit it or delete it.

4.7.2 Stimulus/Response Sequences

Users, after clicking on the read more button in the preview of the articles on the home page, are redirected to a page containing the complete article in full screen related to its image

4.7.3 Functional Requirements

The corresponding journalist can then click on the edit article button and decide whether or not to change fields such as title, topic, img and body of the article, or possibly click on the delete button of the article. Only journalists have access to this feature and must necessarily be logged in to use it

4.8 System Feature 8 - Users Management (Only Admins)

There is how admins can handle users in Teverola Times Journal

4.8.1 Description and Priority

Only for admins, on the home page there is a "Manage Users" button, by clicking on which the admin is redirected to a users management page, from which he can modify any user or possibly delete them

4.8.2 Stimulus/Response Sequences

The Admin, after clicking on the "Manage Users" button on the home page, is redirected to the respective page, in which it displays a list with all the users registered on the database, for each of which (except for a single non-modifiable admin, which is supposed to always exist in any case) can modify values such as Name, surname and Role, thus promoting standard users (all users appear as such at the time of signup) in journalists / admin, or vice versa. For journalists there is an additional Salary parameter that can be set. The removal of the users / admin does not involve further complications, while the removal of the journalists involves the consequent elimination of all the articles published by that journalist.

4.8.3 Functional Requirements

Only the admin can access this feature, and must be logged in to use it. a generic admin can modify/delete all users (even possibly other admins), but no one can delete the first admin created (it is assumed that there must always be an admin registered as such to be able to manage the Teverola Times Journal), without having to do so otherwise manually insert it into the database. Logged-in admins cannot modify themselves from the Users Management page or unsubscribe themselves.

5. Other Nonfunctional Requirements

5.1 Performance Requirements

No particular performance requirements.

5.2 Safety Requirements

No particular performance requirements.

5.3 Security Requirements

No particular performance requirements.

5.4 Software Quality Attributes

Teverola Times Journal provides the users with both simple and advanced features. Due to its well designed and easy to use interface it can be used by both experts and typical users.

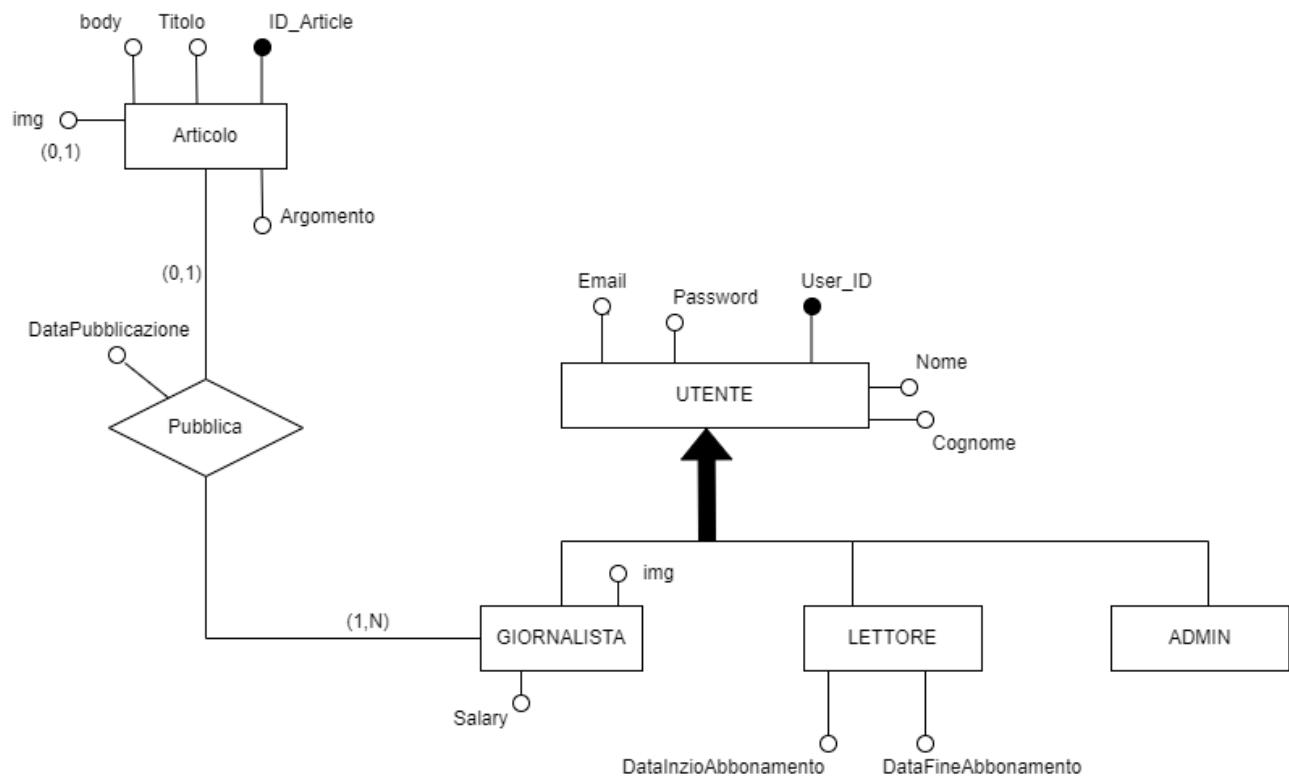
5.5 Business Rules

The users logged in without privileges cannot access web pages reserved only for users with those specific privileges

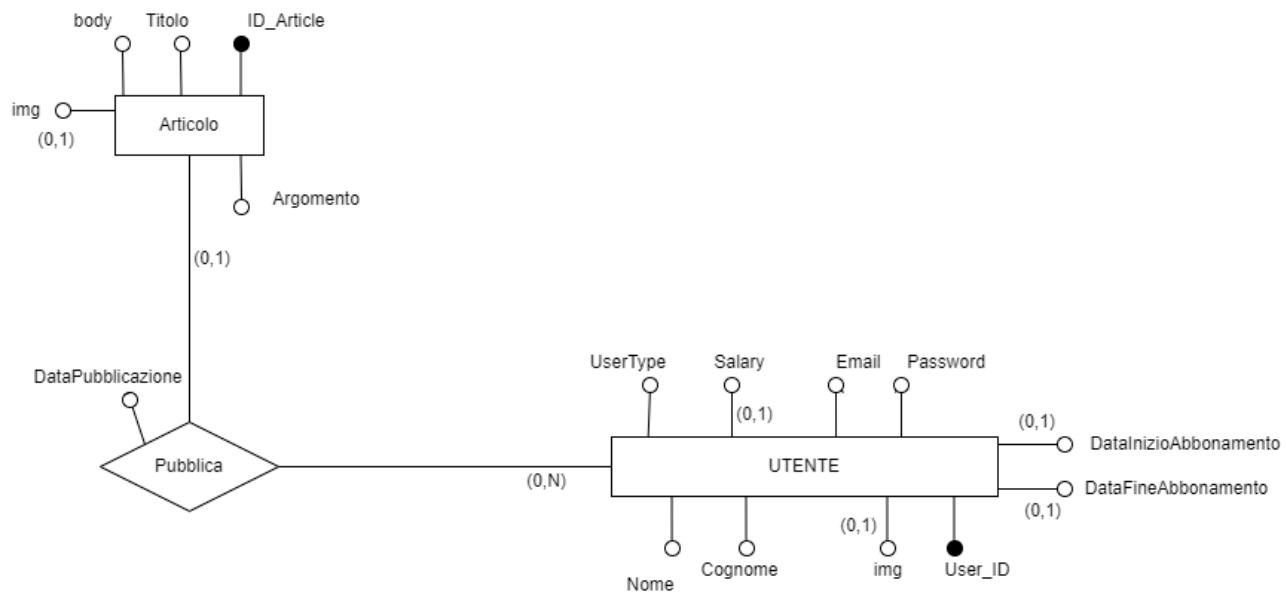
6. Other Requirements

Appendix A: Analysis Models

A.1 - ENTITY - RELATIONSHIP MODEL



A.2 - RESTRUCTURED ENTITY-RELATIONSHIP MODEL



A.3 - LOGIC MODEL

ARTICOLO

ID_Article	Titolo	Argomento	body	img	DataPubblicazione	Utente
------------	--------	-----------	------	-----	-------------------	--------

UTENTE

User_ID	Email	UserType	Password	Nome	Cognome	DataInizioAbbonamento	DataFineAbbonamento	img	Salary
---------	-------	----------	----------	------	---------	-----------------------	---------------------	-----	--------