

Programming of User Interfaces

2018-2019

News Manager

1 Introduction

The goal of this project is to develop a *newspaper* application with the typical functionalities needed to publish/manage a newspaper web page: show the news in its main page, show the details of a given news, filter the news according to their category, show the newspaper Twitter timeline, create and update the news contents, remove news, etc. Similar web pages can be found in newspapers webs: <https://www.nytimes.com/> or <https://www.theguardian.com/>.

This application integrates the three different interfaces studied throughout the course: a web application, a JavaFX desktop application and an Android application. As the web interface works for all kind of devices, tablets, computers, mobile devices, it will include the basic functionalities of the project, such as: show the main page of the newspaper, edit, remove and add news by means of basic forms. However, in many cases, web pages are not the most suitable interfaces for editing the contents, for instance for: save/load news in files before publishing them, take and publish photographs, videos or audios. These functionalities will be implemented by means of a desktop application and an Android application. The specifics requirements for each application are explained in the subsequent section.

In this section we will describe the functionalities that must be included in each application.

2 Common aspects

In this section we will enumerate the characteristics shared among all applications.

- A news will be composed by: title, subtitle, category, abstract, body
 - Title, category and abstract are mandatory, that is, when the user is filling the form to add/modify the news, it must be validated by the different forms.
 - Additionally, the server returns a field `update_date` with the timestamp of the last modification of the given news.
 - Depending the request, the image associated to each news are returned in two different fields:
 - `image_data` and `image_media_type` when the request is asking for one concrete news
 - `thumbnail_data` and `thumbnail_media_type` when the request is asking for a list of news
- Categories available are: National, Economy, Sports and Technology.

- The web and desktop applications follow the typical CRUD pattern, that is, news can be created, read, updated and deleted by the users.
 - The application does not have to consider concurrent modifications of the same news. If two users are editing the same news, the last modification will be saved discarding the modifications done by the other user.
- Android application functionalities are limited to show the list of news and update the picture of a given news.

3 Web Interface

3.1 Non-functional requirements

The specific non-functional requirements for the web application are:

- The web application must work as a “single-page” application and must be developed using AngularJS 1.7.2 (<https://angularjs.org/>).
- The application must be *mobile responsive* and must be properly shown in small devices such as mobile phones or tablets (*mobile-first*).
- We recommend the use of Bootstrap (<http://getbootstrap.com/>) for the web style, however, customize styles and effects can be used.

3.2 Functional Requirements

We will describe the functional requirements of the web interface of the newspaper application.

Main page

- News in the main page must include their title, subtitle, a thumbnail of the image (if exists) and their abstract. The body of the news is not shown in the main page and it will be shown in the news detail page.
- The title and the image link to the details page of the news. News edition is not allowed by means of this links.
- The newspaper main page must include a Twitter timeline. The Twitter profile used could be @EIT_Digital, but other profiles can be used. The Twitter timeline should not be shown when the application is shown in small devices.
- If the user is logged in (see the optional part in Section), the following buttons must appear:
 - A button for each news to edit them and redirect to the edition form.
 - A button to create a new news which redirects to an empty news edition form.
 - A button for each news to remove the news.
- News removal requires the confirmation of the user before applying the removal.

- News removal must give some feedback to the user with the result of the operation.

Navigation bar of the main page

- The navigation bar must show all buttons/links for all categories shown in the newspaper, that is, National, Economy, Sports, Technology and All news.
- Links/buttons in the navigation bar must filter the news shown in the main page according to the selected category.
- The navigation bar includes a text field to add some text that will be used to filter the news shown in the main page of the newspaper.
- The navigation bar must include a checkbox to select if the user is logged in or not. If the user is logged in, news can be created, edited and removed. Otherwise, the user cannot edit the newspaper contents.
- The navigation bar should be properly shown in mobile devices. Ideally, it should be collapsed in one button for small devices.

News detail page

- The news details must be shown with its title, subtitle, abstract, category, body and picture (if it is included in the image).
- The modification date and the username who have modified the content must be shown at the end of the page.
- News cannot be modified with this form.
- If the body is created in HTML, its content must be properly shown by the application (see

News edition and creation

- The form must include all input to edit/create the news, that is: title, subtitle, abstract, body and picture selection.
- The categories must be selected in a combo with values: National, Economy, Sports and Technology.
- Body can be fill in HTML format (a WYSIWYG editor can be used).
- All inputs of the form (except the image) are mandatory and the form must be validated.
- This form must include a button to come back to the main page and another button to save/create the form information added by the user.
- Saving information must give some feedback to the user with the result of the operation.

3.3 Web application technical details

The skeleton of the application (files and directories) is available in Moodle. It contains the structure of files (with some code) and comments to include the functionalities of the application. The skeleton contains the following structure:

/css	→ CSS files (if used)
/js	→ JavaScript files (if used)
/img	→ Images files (if used)
/news	→ Angular and HTML files about news
news-list.html	→ HTML for showing the list of news
news-edition.html	→ HTML for editing the news
news-show.html	→ HTML for showing the news details
news-login.html	→ HTML for showing the login form
news-controller.js	→ Angular code of the controllers
news-app.js	→ Angular code for defining the application
news-services.js	→ Angular code to call RESTful services
index.html	→ Index file with the body and script links

Note that some files contain some code inside, concretely the following files:

- `news-app.js` → which contains the code need to load an image and convert it to BASE64 format to send it to the server. A comment in the edition file is added to load image.
- `news-services.js` → which contains the code needed to call to the RESTful service to get the data from the server.

The login functionality is optional, however, the server requires to include login information to get the news associated to each group. This information must be included in the header of the http request as an *apikey*. Each group will have its own anonymous *apikey* (is will be provided) and each user of the group will have its own *apikey* and username/password. By default, you have to set the anonymous *apikey* in the file `news-app.js` to receive only the news associated to you group.

```
app.run(['$http', function ($http) {  
  $http.defaults.headers.common['Authorization'] = 'PUIRESTAUTH apikey=XXXXXXX';  
}]);
```

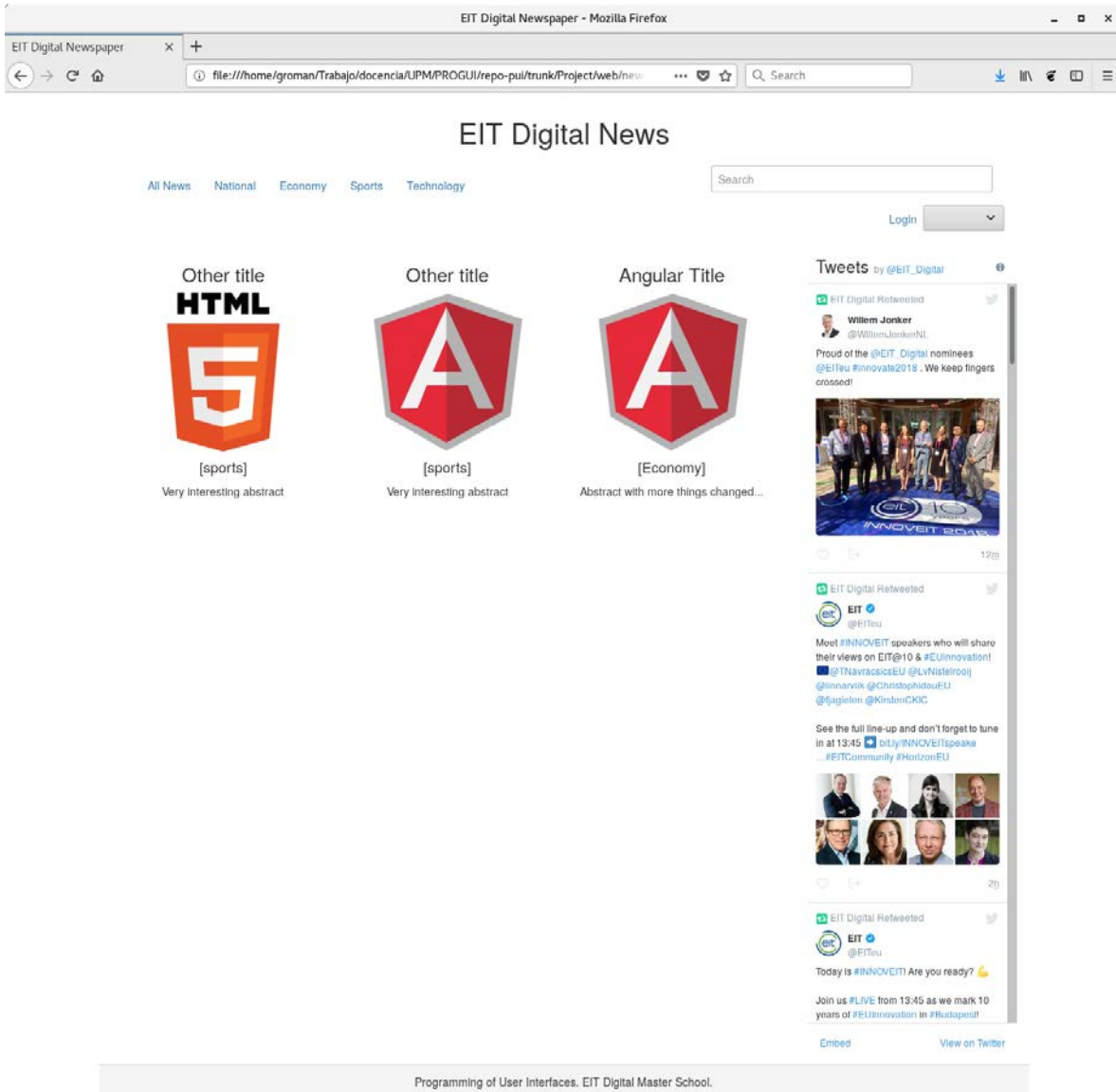
Replace the **XXXXXXX** by the anonymous APIKEY you have for your group.

When a user is logged in this APIKEY must be changed to the user APIKEY, which are received by calling `LoginService.login` (see `news-service.js`). If you are not implementing the login form, this *apikey* change can be done by using a select in the main page where all users can be selected.

3.4 Screenshots

This screenshots show a very basic proposal showing all capabilities of the application, feel free to improve the style of this screenshots.

The main page of the web application shows the list of the news published in the newspaper.



If the user is logged in (or if the tick button is checked), the news list must include the edition, removal and creation buttons.

EIT Digital Newspaper - Mozilla Firefox

File Edit View History Bookmarks Tools Help

EIT Digital Newspaper x +

file:///home/groman/Trabajo/docencia/UPM/PROGUIL/repo-pui/trunk/Project/web/new/ ... Search

EIT Digital News


All News National Economy Sports Technology

Search

Hello, Guillermo! Logout Guillermo

Create New News

Other title




[sports]

Very Interesting abstract

Edit Remove

Other title




[sports]

Very Interesting abstract

Edit Remove

Angular Title



[Economy]

Abstract with more things changed...


Edit Remove

Tweets by @EIT_Digital

EIT Digital Retweeted

Willem Jonker @WillemJonkerNL

Proud of the @EIT_Digital nominees @EITeu #Innovate2018. We keep fingers crossed!




12m

EIT Digital Retweeted

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Meet #INNOVEIT speakers who will share their views on EIT@10 & #EInnovation! @TNavracicEU @LWNisletrool @immarvik @ChristophidouEU @agajelen @KirstenCKIG

See the full line up and don't forget to tune in at 13:45 billy:INNOVEITspeakers ... #EITCommunity #HorizonEU



2h

EIT Digital Retweeted

EIT @EITeu

Today is #INNOVEIT! Are you ready? 🙌

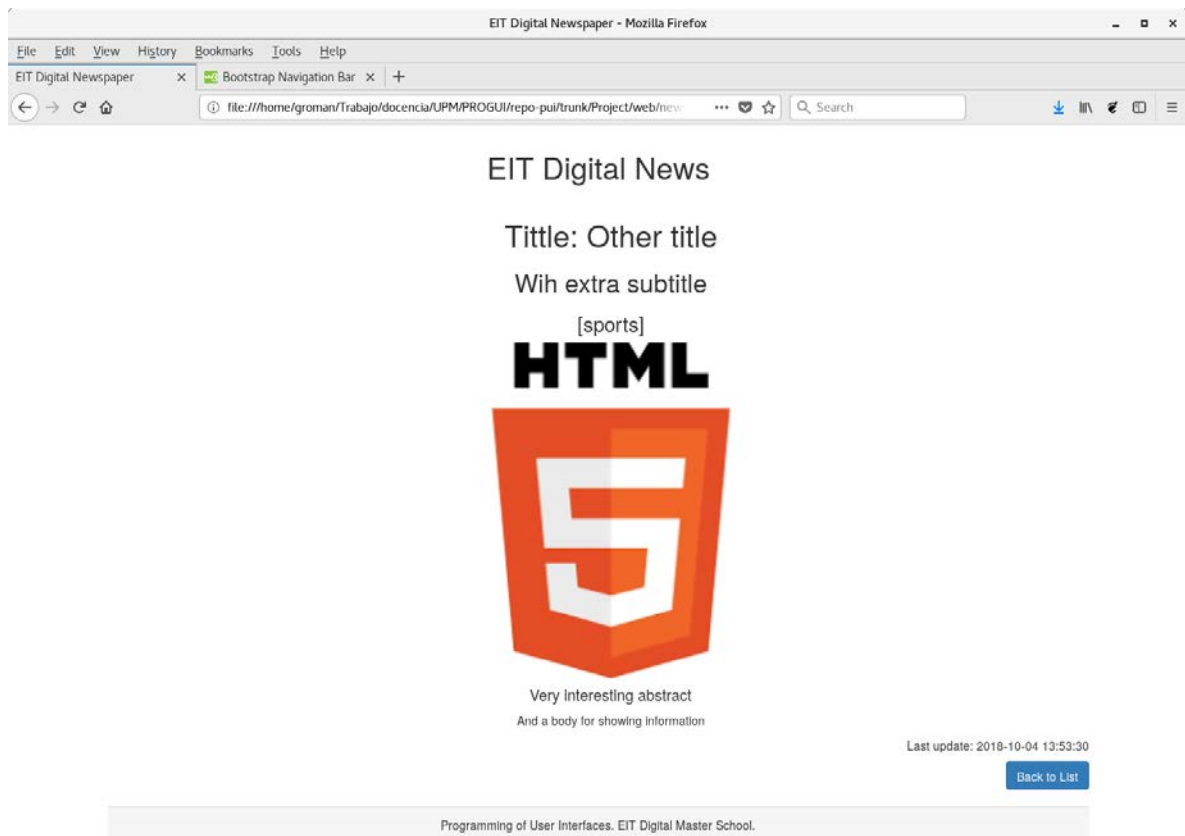
Join us #LIVE from 13:45 as we mark 10 years of #EInnovation in #Dudeapest!

Embed View on Twitter

Programming of User Interfaces. EIT Digital Master School.

<https://twitter.com/WillemJonkerNL/status/1047813872869105666/photo/1>

The layout for viewing the details of a particular news could be:



The layout for news edition could similar to this one:

EIT Digital Newspaper - Mozilla Firefox

File Edit View History Bookmarks Tools Help

EIT Digital Newspaper x +

file:///home/groman/Trabajo/docencia/UPM/PROGUI/repo-pui/trunk/Project/web/new/ ... Search

EIT Digital News


Title:

Subtitle:

Category:

Abstract:

Body:
And a body for showing information

Image:

 No file selected.

Date: 2018-10-04 13:53:30

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4 Desktop Application

This application allows manage and read news.

There are two kind of users:

- Public users (login is not needed):
 - They can access to all published articles (news).
 - They can see articles details.
 - They can create a new article but it can only saves It to file
- Registered users (login is required):
 - Can see all published articles.
 - Can edit articles that belong to the user.
 - Can create a new article.
 - Can delete articles that belong to the user.

4.1 Main Window

It shows how this form should look like. Students can define a new one, but functionalities must be kept. Functionalities provide by means of this form are:

1. List of all published news. Login is not required.
2. Login
3. New. Allows create a new news. Only logged in users can send news to server. Users can save news to a file, in this case login is not required.
4. Load a news from a file.
5. Edit. Login is required. User can edit a news, if only if, this news belonging to the user.
6. Delete. Login is required. User can delete a news, if only if, this news belonging to the user.
7. Exit.
8. Headlines list. Shows a list with all headlines. When user selects one headline: Command 'read more' will be enabled, news image and abstract will be shown. Moreover, if news belongs to the logged user, commands 'Edit' and 'Delete' will be enabled.
9. Category filter. Filter headlines that will be listed. Only headlines with the selected category will be listed. If category is equals to ALL, all headlines will be listed.
10. Read More. Allows any user to access to the selected news details

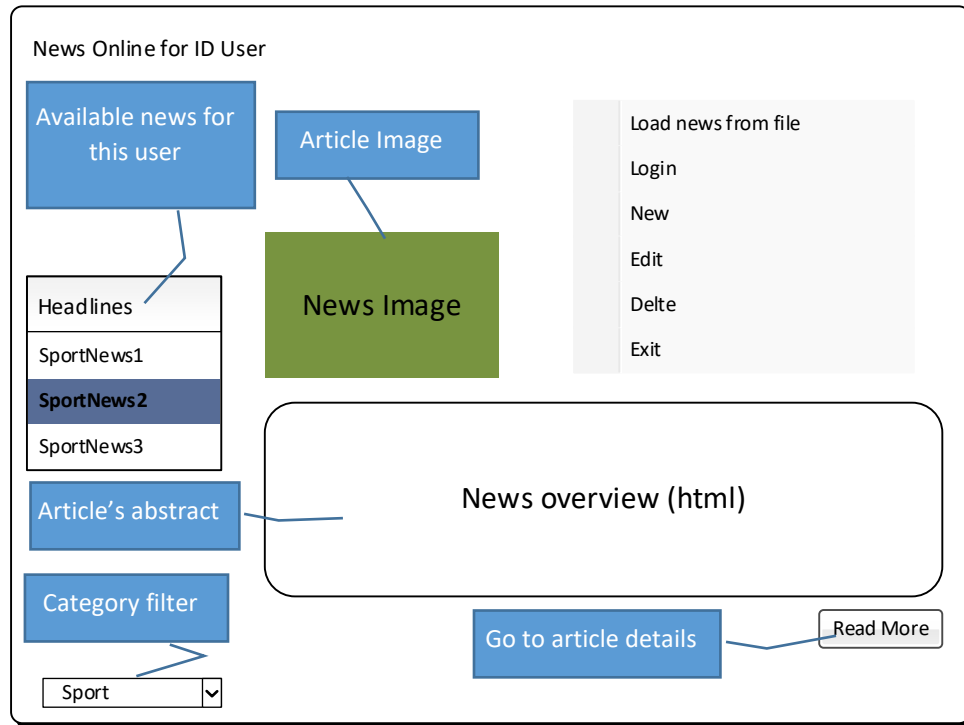


Figure 1 Desktop application main window

4.2 Form for news details

Figure 2 shows how this form should look like. Students can define a new one, but functionalities must be kept. Functionalities provide by means of this form are:

1. Always display news details: image, title, subtitle, category
2. At the beginning this form shows news body
3. Switch between body and abstract
4. Back to the previous form

News Online for ID User

News Image

Title:

Subtitle:

Category:

News (html)

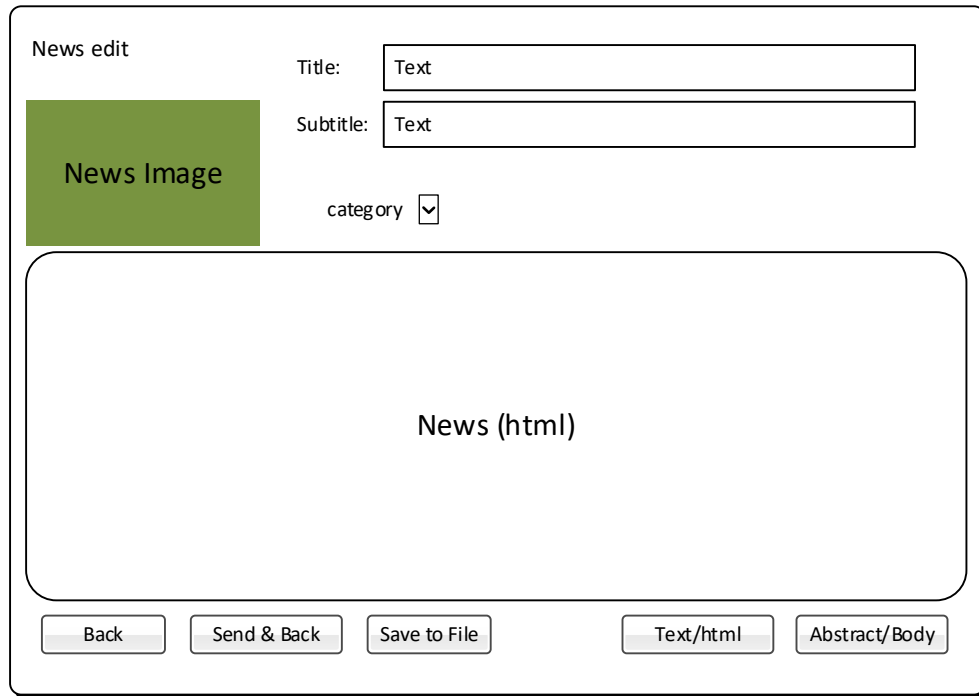
Back

Abstract/Body

Figure 2 News details

4.3 Form for Editing and Creating news

This form will be used for creating a new news or editing an existing one. The form should look like Figure 3. Students can define a new one, but functionalities must be kept.



News edit

Title: Text

Subtitle: Text

News Image

category ▼

News (html)

Back Send & Back Save to File Text/html Abstract/Body

Figure 3 Scene for editing / creating news

This scene provides services for:

- Add an image. Student can use the provided form 'ImagePicker' to implement this functionality
- Add title and subtitle
- Define news category
- Add abstract and body. These elements can be edited in plain text or html text
- Send the new or modify news to a server and back to main window. To send a news, title and category must have been defined.
- Save a draft to a file. This command saves the news to a file in the local machine. This draft could be loaded again for editing it or send it to a server. To save a news, title must have been defined.
- Back. This command discards all changes made since last 'Save to File' command

5 News Android Application

Android application must be able to show the list of news without login in the application and select the news in order to edit it. If the login is not implemented, the user can directly access to modify the picture of the selected news. If the login is implemented, the user must be logged in to modify the picture.

The basic proposal is to include the picture which has been taken without using the application. An interesting extra could be the use of an Android activity to take the picture with the application.

6 Login form (optional)

Additionally, a login form with username and password, can be added to the different applications. Depending on the application, the expected behavior will be slightly different. Let us explain the details for each application:

- **Web Application:**

The web application does not require that the user is logged in for showing the contents of the main page, that is, news list, navigation bar and news details. If the user is logged in, the buttons for editing/removing news will be shown in the main page and the contents can be modified by the user.

- **Desktop application:**

The mandatory version will work with only one user. The user and password will be provided for each group. See the code documentation to know how to use it. When user selects 'login', this version will use the provided user and password. Maximum grade for mandatory version is eight points.

The extra exercise consists in define and use a login form. In this case, students will be provided with two or more users and passwords. In this scenario, when user selects 'login' a new form will be displayed. This form will provide all functionalities needed for login process. Maximum grade for mandatory version plus extra exercise eight points.

- **Android Application:**

For implementing the login form, a new Android activity needs to be added. If it is implemented, the user must be logged in to modify the picture of the news.