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Internship Report

E-commerce Web and Mobile Application

Host Organization: *EasyTek*



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Fundamental Bachelor in Computer Sciences

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Dedications

We dedicate this work to everyone who has supported and inspired us. Our families. Our parents , our brothers, our sisters . You provide us the end-less support we need to go seize the day. You understand our crazy dreams and you push us forward as we chase them ! Thank you.

To our friends. When life gets tough, you are always there to cheer us up. Thank you for being such amazing friends. I could never do it without you.

To Everyone who we love, Thanks for being so wonderful and kind to us . we appreciate your support and understanding .

Hlel Abdelhedi and Ouni Hani

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General Introduction

The major part of news websites have mobile apps aside to them . Since mobile apps are too much portable and easy to use . The push notifications web services makes building a mobile app aside to the newspaper website a very suitable solution to make your clients more engaged and loyal to your website .

Hssine bouzara the founder and Director of publication of L'affiche News online news website has decided to adopt this solution and build own mobile app aside to his website . The mobile demanded application must contain 3 major features:

1. Development of a WordPress plugin which is responsible for sending the push notification if any new post is posted on the website . and retrieve data from the database and and encode them in JSON format .
2. News browsing.
3. Push notification service integration on the app.

This project was assigned to me during my summer internship at Mind Engineering . In the next few pages i will talk with details about the context of my project , the client's need and the design and the developement of the application .

Chapter 1

Project context

My project was In the occasion of a summer internship . In the rest of this chapter i will present my host organisation and Then i will explain the main idea and the purpose of my application.

1.1 Company presentation

1.1.1 Company Description

Mind Engineering is an agency specializing in the design of innovative , efficient and customized software solutions . They are a team of developers, designers and project managers, all experts, passionate about thei r business and proud of the solutions they offer to their partners.

1.1.2 Accomplishments

Mind engineering had achieved too much success in a very limited period . They have a completed many successful projects since their beginning in 2015 until now and these are some examples :

- ISTIC website :

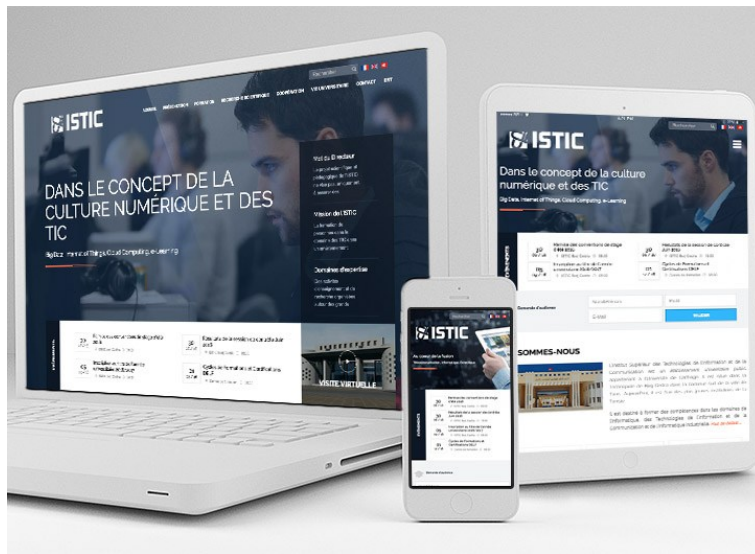


Figure 1.1: www.istic.rnu.tn : ISTIC Website

- SOGEFEC (Societe generale froid et climatisation) website :

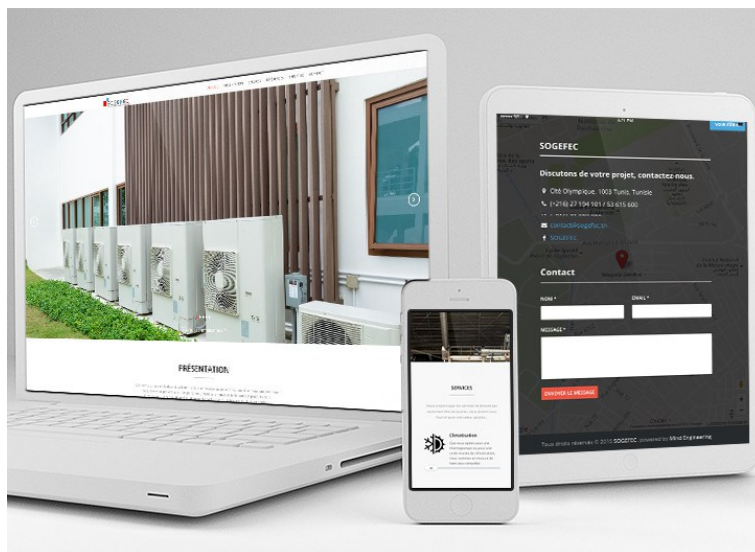
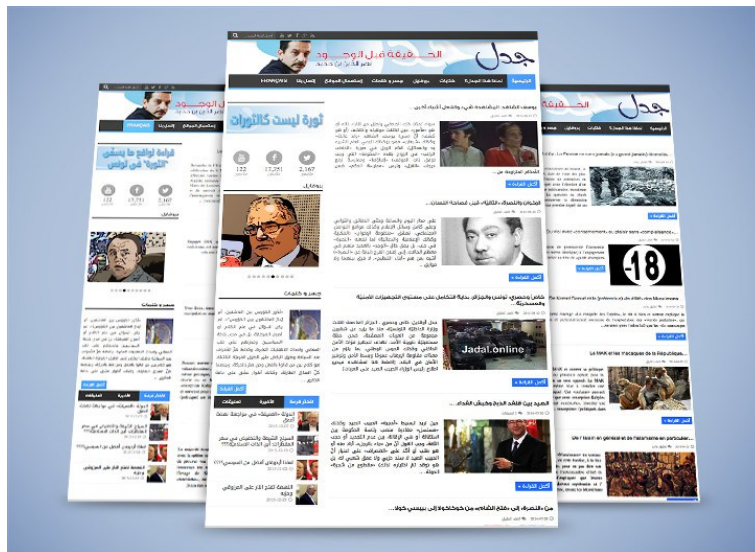


Figure 1.2: <http://www.sogefec.tn/> sogefec website

- Jadal online :

Figure 1.3: <http://jadal.online/> jadal online

1.2 Application context

In this section we will discuss the main purpose of the application . and why every news website should build it's own mobile app .

1.2.1 The noticed rise of mobile devices users and internet users

The report from the National Telecommunication Forum (INT), published on its website, Tunisians are using a 3G compatible phone, 23.5 percent change their phone every 6 months and 60 percent spend more than 3 hours a day online, against 36 percent between 1 and 3 hours a day and 12 percent within an hour day.

1.2.2 The migration to android

According to GSM Arena Android will be the most popular mobile OS in the next four years reaching almost 50 percent market share. Meanwhile Windows Phone will catch up and overtake the second place from iOS by 2015 with 20 percent market share.

1.2.3 Advantages from using mobile apps for news websites

Firstly using a mobile app to browse news will create a very good user experience for website followers since mobile apps are very handy and portable which will make the users feel connected and updated with the latest news . and never forget the simplicity of smartphones using (it usually takes two or three taps to open the application).

Secondly , Using a mobile app to browse news is economic since you will only require the data and then the application will care for parsing these data , processing them and making show them to the user which will optimize your mobile data using and optimize responding time from the server since we are not requiring extra additional things from the website server like i html , css , javascrit ...etc in websites.

Last but not least , The mobile push notification service is a very useful web-service for news websites since it offers the possibility for the users to be instantly updated with latest breaking news .

1.2.4 conclusion

To conclude , the current market circumstances and the various advantages of building your news mobile app aside to your apps imposes the necessity of adopting this solution.

Added to that the huge migration to android platforms will make every person think of creating an android app before any other platform .

Chapter 2

Requirements Analysis And application design

2.1 Existing Slutions

In this subsection i will focus on studying some applications which have the same context as my project in order to retain some of the helpful features proposed by these applications and avoid their drawbacks.

CNN NEWS APPLICATION



Figure 2.1: Logo OF CNN NEWS

1. Description of the application:

Application name: CNN Breaking US And World News

Description: CNN app is a portal to the latest breaking news from around the globe

App version: 2.9.4

Last updated: july , 18 , 2016

App size: 40M

Offered by: CNN

Rate: 4 stars

2. Criticism of the application :

- Positive points:
 - (a) beautiful user interface (material design) :Material design is a comprehensive guide for visual, motion, and interaction design across platforms and devices . It's is highly recommended to use in android apps since it's is supported by android devices .

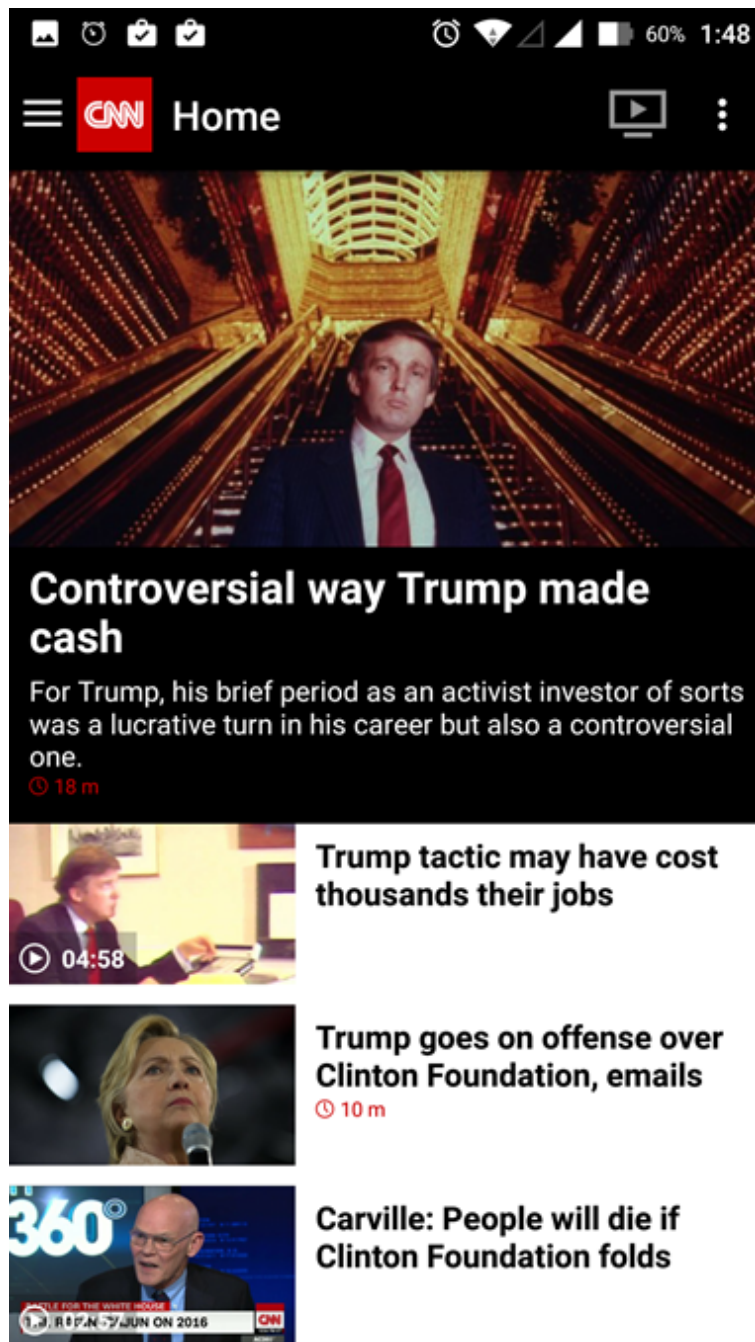


Figure 2.2: CNN UI

- (b) Giving the choice to the user to choose whether to receive push notification or not : this step helps to improve the ux (user experience) of the app .



Figure 2.3: CNN push notifications

- Drawbacks:
 - (a) big size : 40M

3. Proposed Solutions And Retained Features :

From all the previous features i will retain all the positive ones and i will try to avoid all the drawbacks .

so to summarize the product must present these features:

- beautiful material design
- speed and performing application
- light weight app
- giving the user the choice whether to receive push notifications or not

FRANCE 24

Figure 2.4: Logo of France 24

1. Description of the application:

Application name: France 24

Description: France 24 mobile app is an application which will keep up to date with international news .

App version: varies with device

Last updated: August 9, 2016

App size: varies with device but big anyway

Offered by: France MÃ©dias Monde

Rate: 4.2 stars

2. Criticism of the application :

- Positive points:

- (a) Breaking news popups when the app is in foreground .

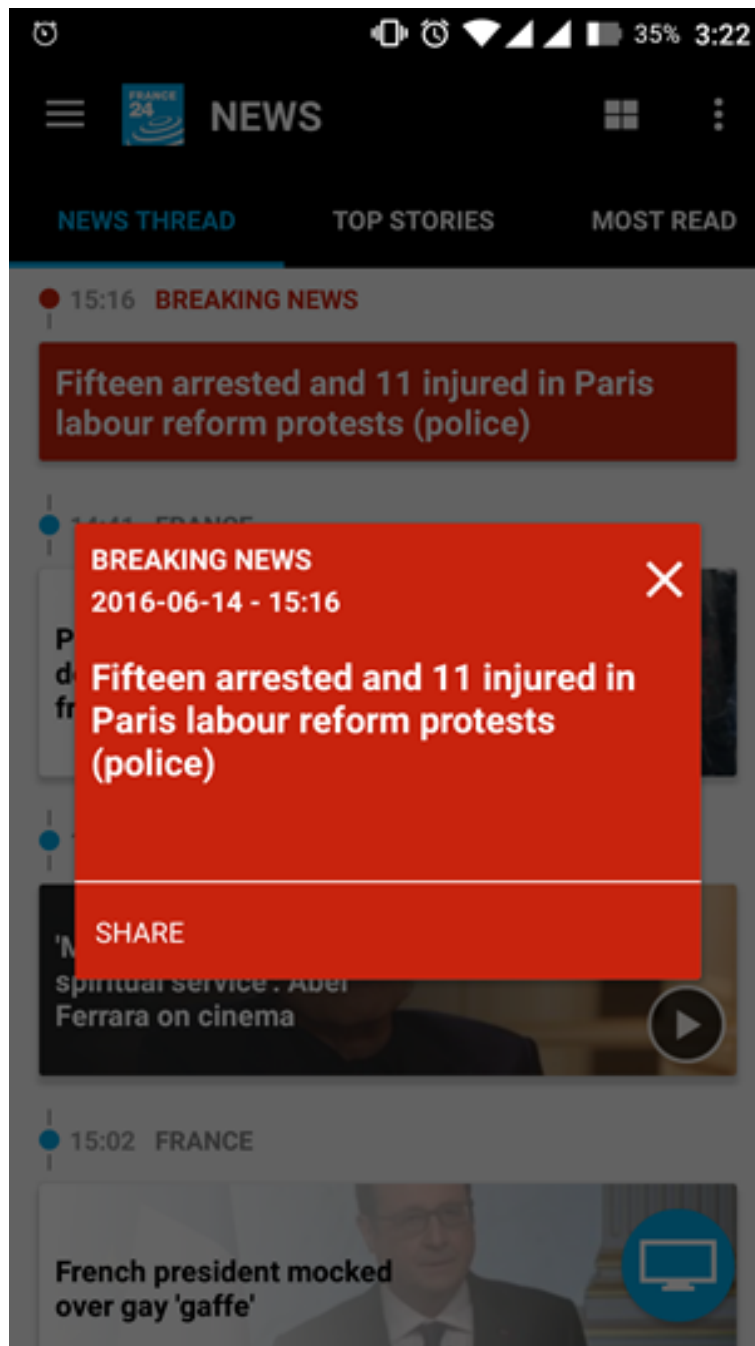


Figure 2.5: France popup

(b) Push notifications :

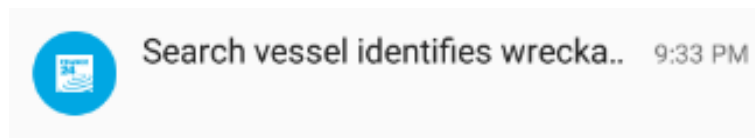


Figure 2.6: France push notifications

(c) Beautiful UI .

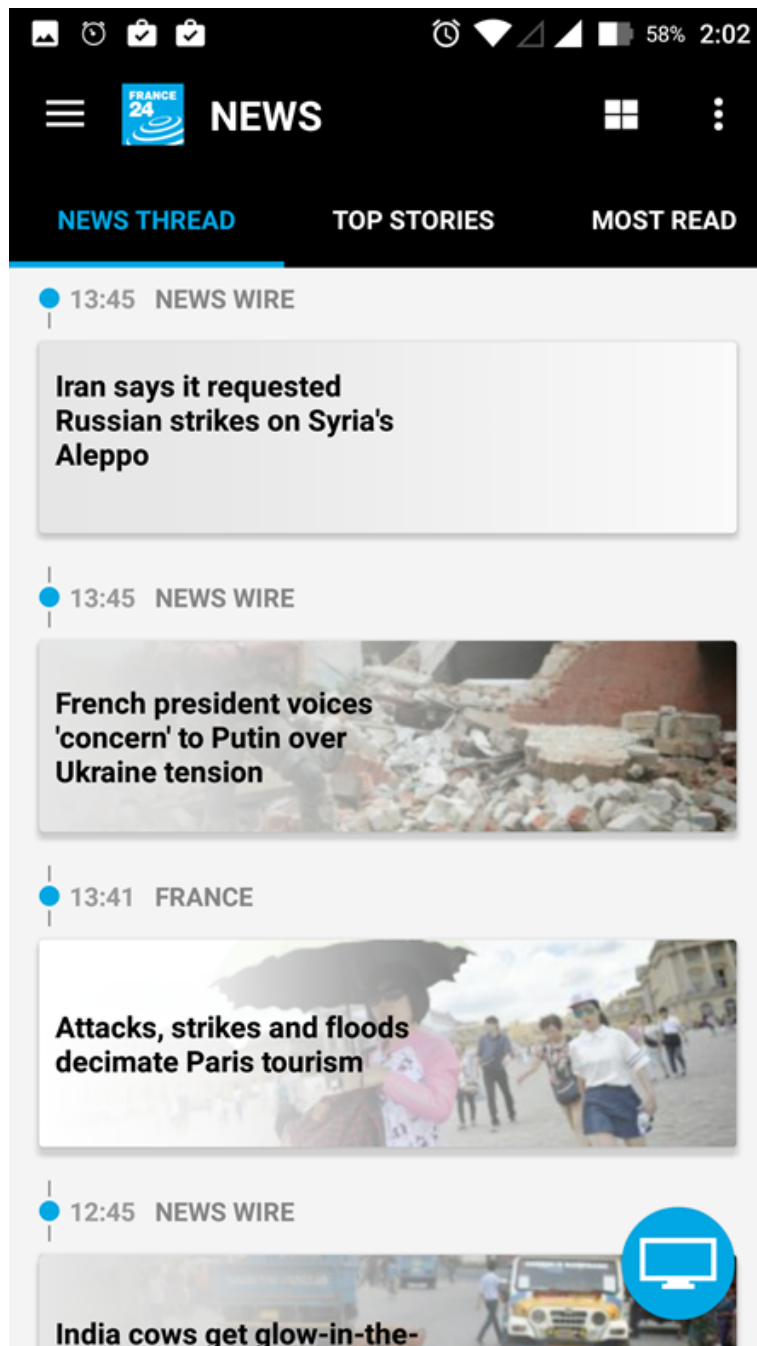


Figure 2.7: France 24 UI

- Drawbacks:
 - (a) big size

3. Proposed Solutions And Retained Features :

From all the previous features i will retain one feature which is the manner

how the posts are designed to show with a little modification .

ASSABAH NEWS :

Figure 2.8: Logo of assabah news

1. Description of the application:

Application name: Assabah News

App version: 1.0

Last updated: October 10, 2014

App size: : 2.9M

Offered by: Orange tunisie

Rate: 4.2 stars

2. Criticism of the application :

- Positive points:

light weight app

- Drawbacks:

the ui is not very beautiful



Figure 2.9: Assabah news UI

3. Proposed Solutions And Retained Features :

From all the previous features i have been impressed by the little size of the application that's why i will try to make it lightweight as possible .

2.2 Requirements Analysis

2.2.1 Informal Requirements Analysis

Functional Requirements Analysis

- Functionalities:
 - browse news divided by main categories : politique , economie , ... (vertical navbar) , and small categories : ce que je pense , (horizontal navbar) .
 - Integrate push notifications service in the app and in the website by developing a WordPress plugin (php code)

- Project Dependencies :
 - The application must communicate with the website database by using the plugin which must be installed on the WordPress website .
 - The push notification service must communicate with google servers since we are using the google cloud messaging (GCM) for push notifications . And then the servers responds with a registration id which will be sent to the plugin which will insert it in the website's database to use it later when sending the push notifications

Non Functional Requirements

- Code must be clear and commented for future evolutions .
- Ergonomics : the application must have a friendly and easy to use UI.
- Security : the application must respect the confidentiality of data .
- Ensure the integrity and consistency of data in each update, and each insertion .
- Portability : the plugin must work with every WordPress website , and the app must be generic as much as possible

2.2.2 Semi-formal Requirements Specification

- use case diagrams :
 - browse news :

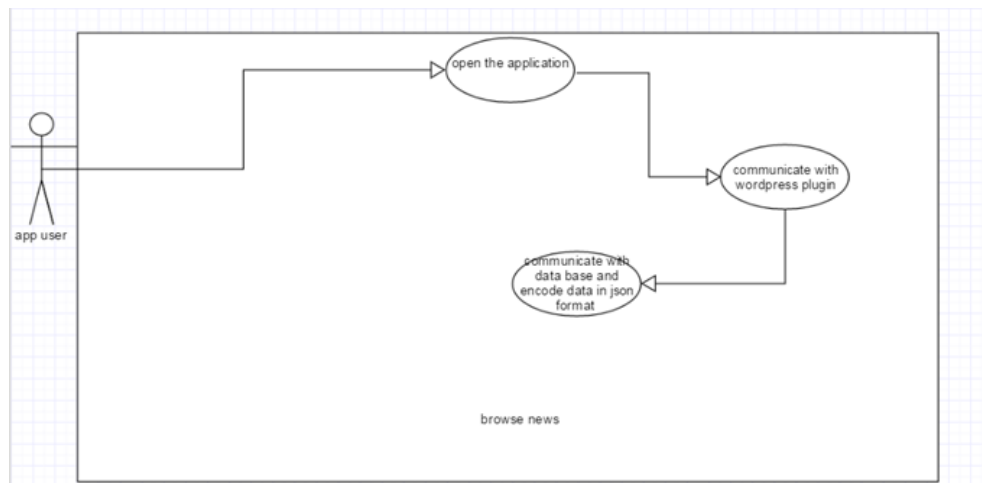


Figure 2.10: Browsing news use case

- push notification :
- Presentation of actors :

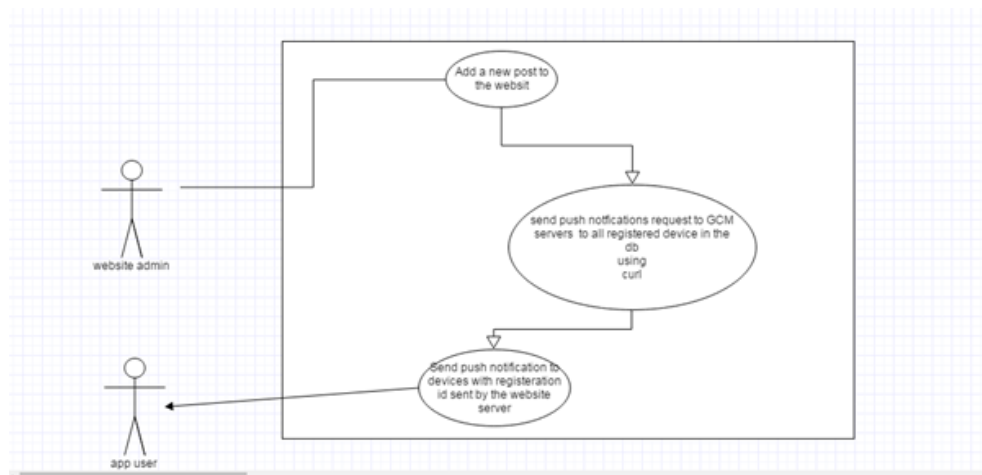


Figure 2.11: Push notification use case diagrams

- App user : the user of the app
- Website admin : the person or the group of persons who are responsible for updating the database or postings new news on the website .
- Browse news : the actor opens the app the app will send AJAX request to the plugin . The purpose of these requests is asking for receiving data using json format . then the wordpress plugin which is already connected to the database selects the suitable data using the category name to select it right and then it encodes the data retrieved and responds the ajax call with the required data in JSON format .
- Push notification : the website admin adds a new post on the site invokes the sending of curl request to GCM servers for each device registered on the site . and finally the GCM servers sends push notifications to these devices or updates the app if it's in foreground .

2.2.3 Application design

Sequence diagrams

- **Data extraction sequence diagram:**

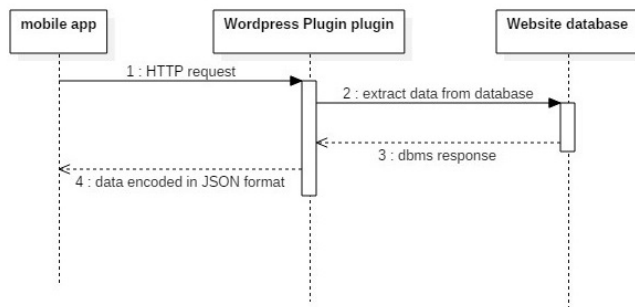


Figure 2.12: Data extraction sequence diagram

- **plugin sequence diagram:**

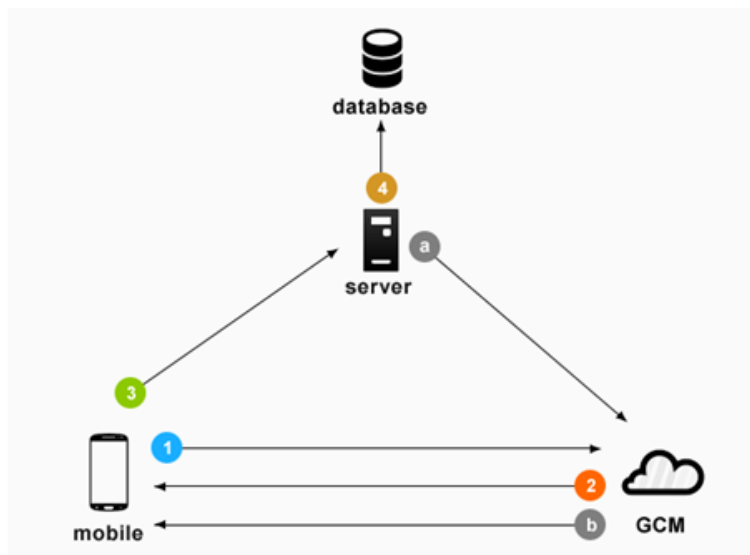


Figure 2.13: Data extraction sequence diagram

- **Push notification sequence diagram:**

- Push notification sequence diagram :

- Description :

1. First android device sends sender id, application id to GCM server for registration.
2. Upon successful registration GCM server issues registration id to android device.
3. After receiving registration id. device will send registration id

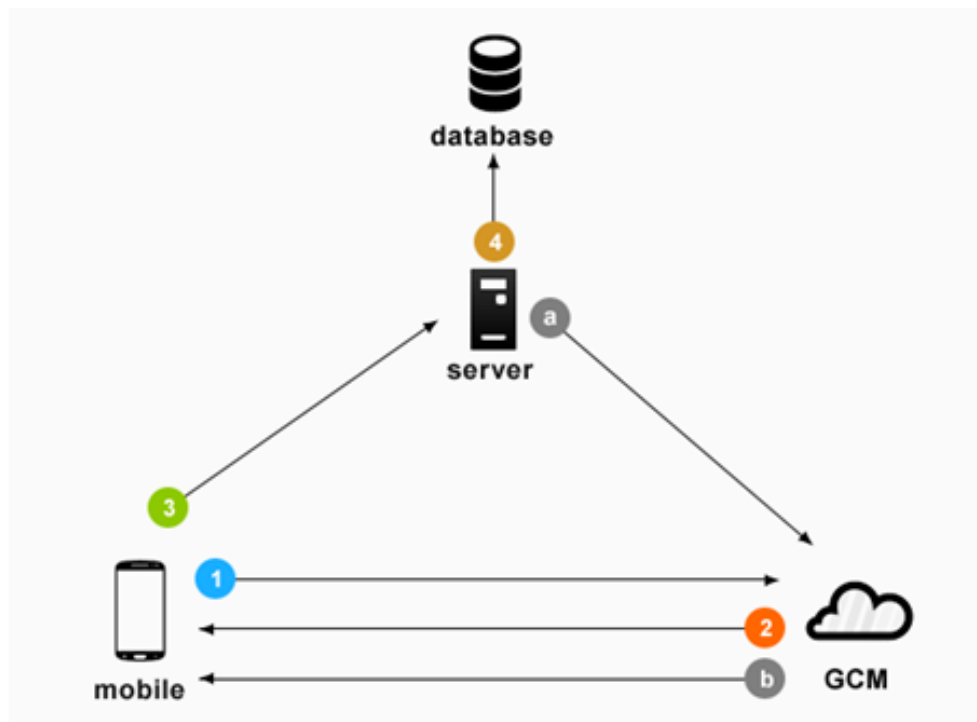


Figure 2.14: Push notifications sequence diagram

to our server

4. Our server will store registration id in the database for later usage

(a) Whenever push notification is needed, our server sends a message to GCM server along with device registration Id (which is stored earlier in the database)

(b) GCM server will deliver that message to respected mobile device using device registration id

UI Design

To have an idea ,about how the UI of the app will be , i have deisgned some interfaces using adobe photoshop :

- Home Screen



Figure 2.15: Home screen UI

- Slide out menu :



Figure 2.16: Slide Out menu

Note: You may notice some differences between these interfaces and the actual application design because of updates and new ideas during the development

Chapter 3

Development

3.1 Development environment

3.1.1 hardware environment :

To develop the project i used un smartphone android lenovo k3 note (processor : mtk 1.8ghz , 2gb of ram , 5.5 screen ...) and a laptop DELL inspiron 15 :

- Intel (R) Core i3-3217 CPU
- 4GB RAM
- 500GB Hard Disk
- 15 inch lcd screen

3.1.2 Software environment:

- windows 7 Edition Integrale 64bits
- MySQL as a DBMS
- Intel XDK (developement kit)
- Atom and Brackets as IDE
- android 6.0
- Adobe photoshop cs6
- WordPress

3.2 Choice of development tools

- **DBMS:MySQL** is the dbms already used by L'affiche news website
- **Editors:Brackets and Atom** Two open source IDEs characterized by the massive number of plugins available for these two editors.

- **IntelXDK:** is a development kit created by Intel to create native apps for mobile phones and tablets using web technologies like HTML5, CSS and JavaScript. Apps are compiled online via the Cordova platform for making cross-platform apps . i have choose this platform since the required application is Hybrid application

This app is developed using Hybrid mobile apps because it will accelerate the developement and facilitate the developement for the mobile app developer . It will also make the app easy to adapt to ios based smart phones.

Chapter 4

Internship Achievements

The application is fully developed and now available at Google Play Store in 1.0.2 version .

The application's name is : "l'Affiche News TN" . It's size is 3.5 M , it's number of installations is between 10 and 50 And it is 5 stars rated by it's all users .



Figure 4.1: L'affiche news at playstore

The website URL is : <http://laffichenews.tn/>

These are some screen shot taken from the main parts of the application :

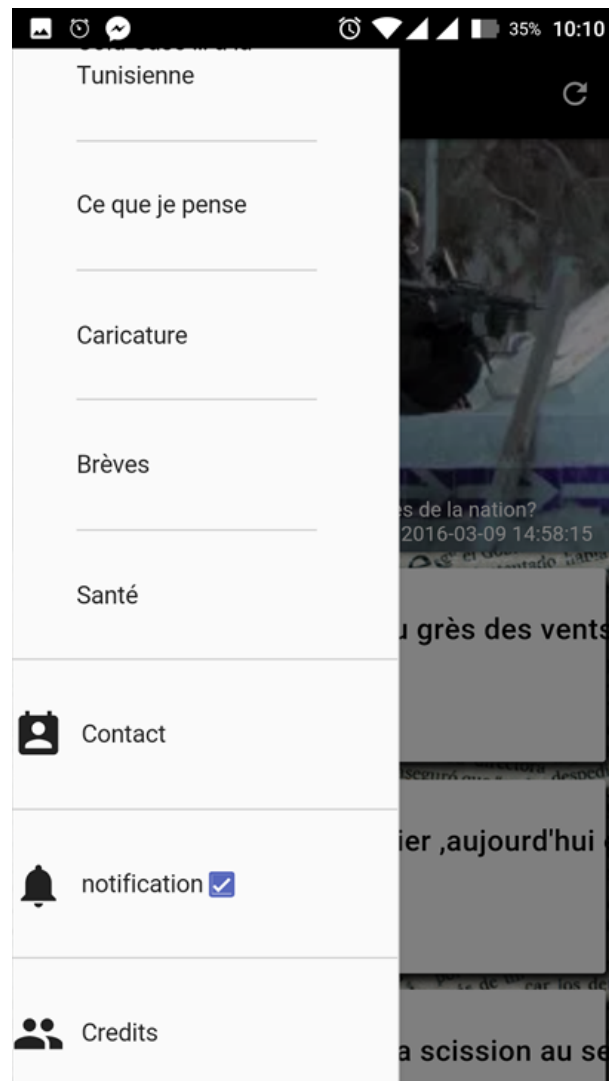


Figure 4.2: Slide out menu

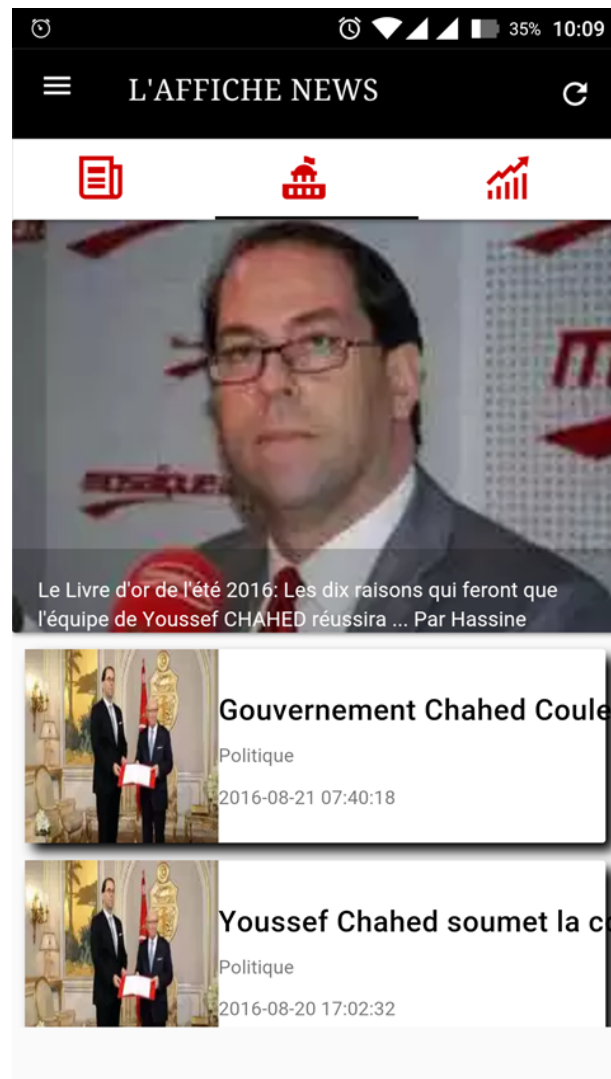


Figure 4.3: Home screen



Figure 4.4: Subcategorie

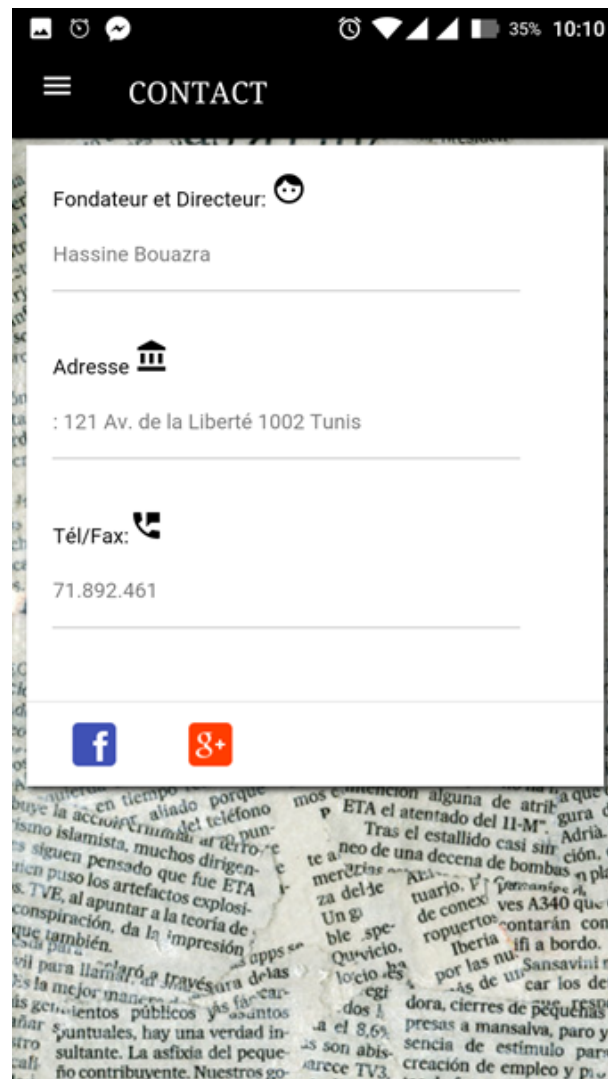


Figure 4.5: Contact page

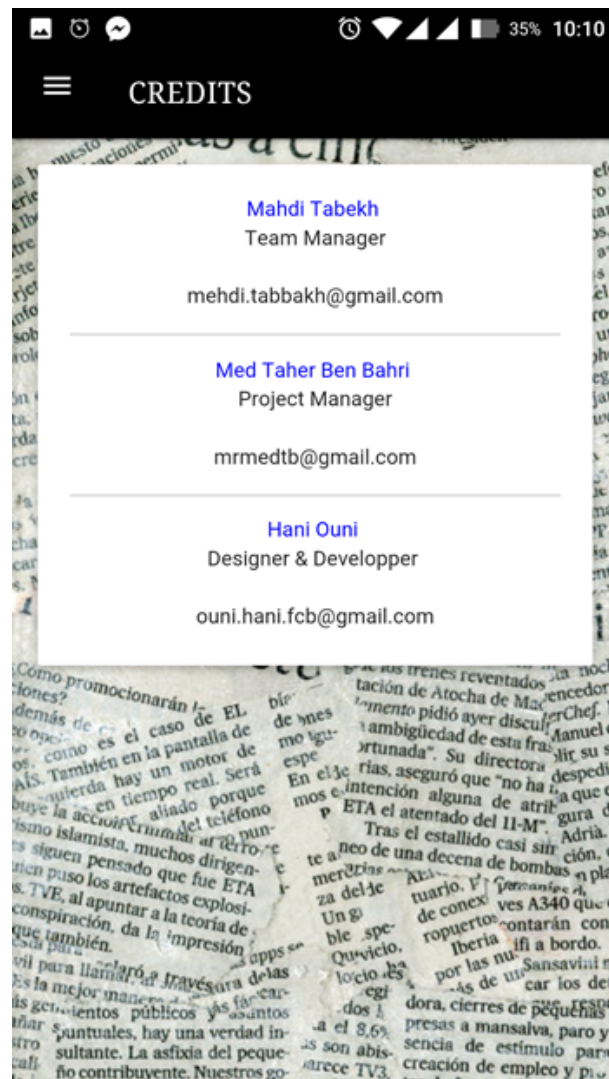


Figure 4.6: Credits page

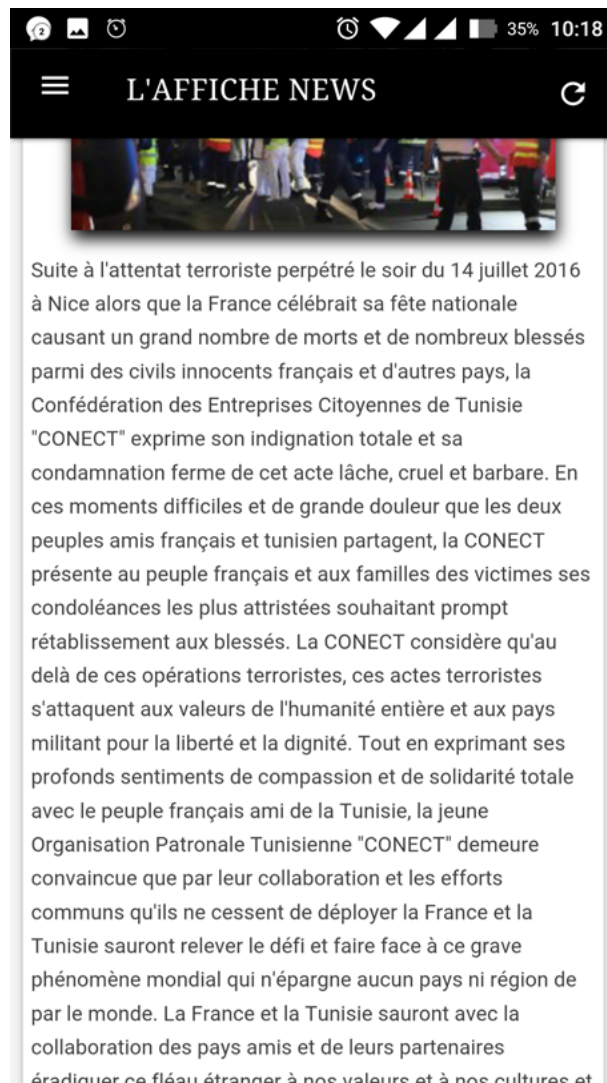


Figure 4.7: Reading article page

General conclusion et Perspectives

For me it was a very nice and wonderful experience to pass my summer internship with the Mind engineering family . It was such an Honor to know these person i have learned a lot of things .

I learned new things such as how to code with php , how to use AJAX , How to develop a site with wordpress .

I learned extend also my previous skills and took the to a new level such as jquery , css , javascript , UI frameworks and mobile developement life cycle .

But what really made this internship spectacular is to pass a whole 2 months with these people and , learn from their experiences and to be professional , Timely , And exact like they are .

In the future I can see my application more optimized and more performing . And perhaps built for IOS platforms.

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