

Marta Pancaldi – Internship Final Report

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The internship was carried out at the company [ICT-Group S.r.l.](#), whose main office is located in Reggio Emilia, lasted 8 weeks between August and September and covered a total of 300 working hours.

1. The Company

ICT-Group is an Italian company that produces management software and has several local and international clients.



Their solution product, called *E.G.G.s Web*, is an ERP (Enterprise Resource Planning) system that includes a suite of integrated applications for business administration – such as production, analysis and control, inventory management, sales and purchases. It is suitable to meet the needs of companies in the most diverse fields, such as web services, healthcare, meat and dairy products, packaging and shipping, automation and others.

2. Project description

The project I was assigned to would become an additional feature to the company's human resource management software: a portal for the request and approval of the employee vacations, work permits, transfers and bank hours.

2.1. Functional requirements

As from the requirements specified, the portal had to include two main sections: the "normal user" view, in which an employee has the option to:

- request a permit, transfer, prolonged absence or bank hours;
- check and validate his monthly situation, for example by correcting any missing timestamps.

The "responsible user", instead, is able to:

- visualize calendars, schedules and work plans of all normal employees to which he is connected;
- approve vacation, permit and bank hour requests;
- notify employees of any errors among the stampings.

Every user, either normal or responsible, has access to his personal page via login credentials.

The hierarchy that regulates the relationship between normal and responsible employees is not fixed, but based on current working teams: the same employee who is responsible for a group of users might be at the same time a normal employee, who is member of a different team, and a normal user might be linked to multiple responsible employees.

2.2. Appearance and features

The internship project has therefore focused mainly on the front-end side of the application.

Most of the user views are composed of a table that includes the data to be displayed. All the tables are largely interactive: by clicking on a cell, a popup modal is displayed that includes input forms and allows, for example, an employee to schedule a three-hour task for the next working day or fix an incorrect card stamping.

Since such interfaces involve calendars and timesheets, all views include a popup date-picker that lets the employee choose a particular date or a range of dates to be displayed, and also two arrow buttons allow the user to change the default month view back and forth.

Also, an internal notification system allows users to receive messages: for instance, a normal employee requests authorization for a weekly absence, his responsible may check his working situation and the total absence hours and then decide to grant the authorization or decline it.

Timesheet App Home Timesheet Dipendente standard ▾ Responsabile ▾ Tests

Calendario

◀ 01 set - 30 set 2016 ▶

04-ottobre-2016 📅

Trasferte e Permessi Assenze prolungate

Nome: Walter White
Matricola: 12345

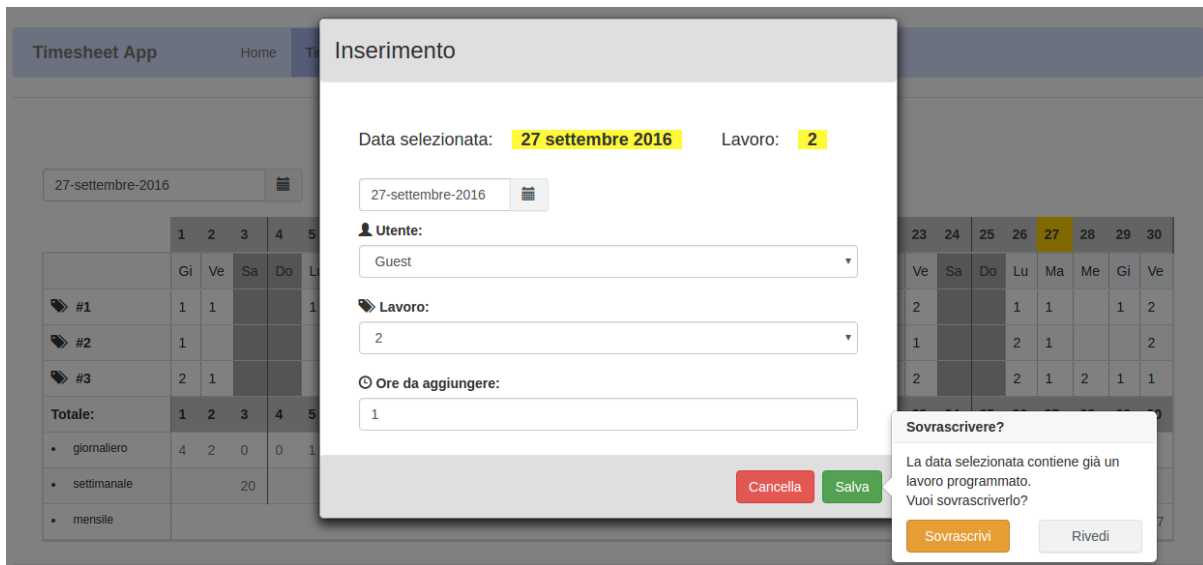
Data	Ore previste	Ore reali	Timbrature				Errori	Assenze	
			Entrata	Uscita	Entrata	Uscita		Tipo	Quantità
1 Gi	8	8	08:30	12:30	14:30	18:30			
2 Ve	8	0	08:30				Timbrature errate	OU - Omessa uscita	12:30
								OE - Omessa entrata	14:30
								OU - Omessa uscita	18:30
3 Sa									
4 Do									
5 Lu	8	8	08:30	12:30	14:30	18:30			
6 Ma	8	8	08:30	12:30	14:30	18:30			

"Normal user" view – monthly calendar

2.3. Development tools

I was provided a working environment running Linux and the overall structure of the application was generated with the Yeoman framework. The main programming languages used in the interface development were HTML, JavaScript and CSS. The logic behind the UI and the controllers of the various user functions were provided by AngularJS, and further frameworks and libraries to improve appearance and interactivity, such as JQuery, AJAX and Bootstrap, were also utilized.

While waiting for the front-end to be integrated and connected to the server side, which would provide the user data and allow employee interaction, a temporary PHP server provided sample data in JSON format to be displayed in the interface tables.



Popup modal for data insertion

3. Working experience

My overall experience was extremely positive: I had the opportunity to collaborate on a challenging project together with helpful and competent people and also to learn new skills while I was placed in a professional environment.

3.1. Knowledge and learning

Moving from doing homework assignments to programming for a professional company could be challenging for most students. I had no previous knowledge of AngularJS and little experience with web development in general, and of course this was my first professional employment in the IT field.

However, I would say that such a transition was not a trauma for me: my software engineering readings have proved extremely useful, and after learning the basics of programming, writing software in a never experienced language merely implies a few early difficulties.

After the initial settling time, while my tutor and colleagues were trying to know me and evaluate my potential and I was building the foundation for doing my job properly, I felt that I would be able to give my concrete contribution to an existing project: I truly was a part of a team, not just a temporary contributor that comes and goes, or worse a burden to be assigned to the simplest and ungrateful tasks.

3.2. Difficulties and outcomes

As it has been previously stated, at the beginning of the internship period the prevalent difficulty was the little knowledge of some of the development tools used by the company and the general lack of experience as junior software developer.

However, after an initial week spent studying documentation and following tutorials, experimenting with simple existing applications and asking questions, with the valuable help from colleagues who were already employed in the project, I managed to make significant progress. After this short introductory period, I was able to proceed with my job in nearly complete autonomy. Moreover, I understood that it is much easier and rewarding to learn a programming language if I have precise goals to achieve.

Another difficulty I faced was joining a complex project that was already advanced, with its own structure and feature, and use code that was previously written as well. Knowing that, I paid a particular attention afterwards to implement code as clearly as possible, with precise comments and detailed documentation, so that it can be easily understood by anyone who will use it later.

3.3. Interaction with working team and customers

All the technical and functional specification mentioned above were explained in detail in a requirements document drawn up by the ICT-Group together with the client company.

During the work, a few meetings were organized between the developers and the customers, so that we could show our results to the customers and they could follow the progress and suggest improvements. However, my workstation was located very close to those of my colleagues who were working with other components of the same software. This allowed me to receive continuous feedback and ask questions whenever I had a technical problem or I needed a suggestion about how to implement some functionalities.

Finally, the working environment was pleasant and stimulating: I felt every employee is committed to his job because he knows it will be appreciated, and that is what happened to me right from the start.

October 7th 2016

Marta Pancaldi