

**HACETTEPE UNIVERSITY
ENGINEERING FACULTY
DEPARTMENT OF COMPUTER ENGINEERING**

**BBM 425
INTERNSHIP REPORT**

**Mehmet Taha USTA
21527472**

Tosyalı Toyo Çelik A.Ş

**24/06/2019 – 05/08/2019
30 Works Days**

TABLE OF CONTENTS

1	Introduction	2
2	Company Information	2
2.1	About the company	2
2.2	About your department	4
2.3	About the hardware and software systems	6
3	Work Done	8
3.1	Seminars	8
3.2	Project	8
4	Performance and Outcomes	10
4.1	Applying Knowledge and Skills Learned at Hacettepe	10
4.2	Solving Engineering Problems	10
4.3	Teamwork	10
4.4	Multi-Disciplinary Work	10
4.5	Professional and Ethical Issues	10
4.6	Impact of Engineering Solutions	10
4.7	Locating Sources and Self-Learning	10
4.8	Using New Tools and Technologies	11
5	Conclusions	11
	References	11

1 Introduction

The name of my internship company was Tosyalı Toyo Çelik A.Ş and my department was IT (information technology). The main focus of the company is to produce a wide range of products from packaging industry to electrical appliances, IT products to construction sector, from household appliances to automotive.

This internship was a software and hardware internship. Main focuses of the internship were writing a common interface to the phone and computer with SAPUI5 SDK, ABAP programming, creating user interface using XML views, workflow within the factory, Javascript programming. At the end of internship, SAPUI5 SDK, ABAP programming, XML views, Javascript programming, C programming, workflow within the factory, Occupational health and safety, Pneumatics were understood.

2 Company Information

2.1 About the company



Figure 1: Company Logo

Tosyalı Toyo Factory

The cooperation agreement between Tosyalı Holding, the leading Turkish private sector producer of flat steel and steel piping, and Toyo Kohan, a leading company in steel products produced with advanced technology of Japan and the world, was signed in February 2012.

Tosyalı-Toyo Çelik A.Ş. is Turkey's first advanced technology and high added-value flat steel producer, and its foundations were laid in January 2015 as a result of about three years of preparation work.

The facility was established in a space of 250,000 square meters in the Osmaniye Organized Zone with a total investment cost of \$650 million, and it began trial production in December 2016 and immediately after pasted to serial production.

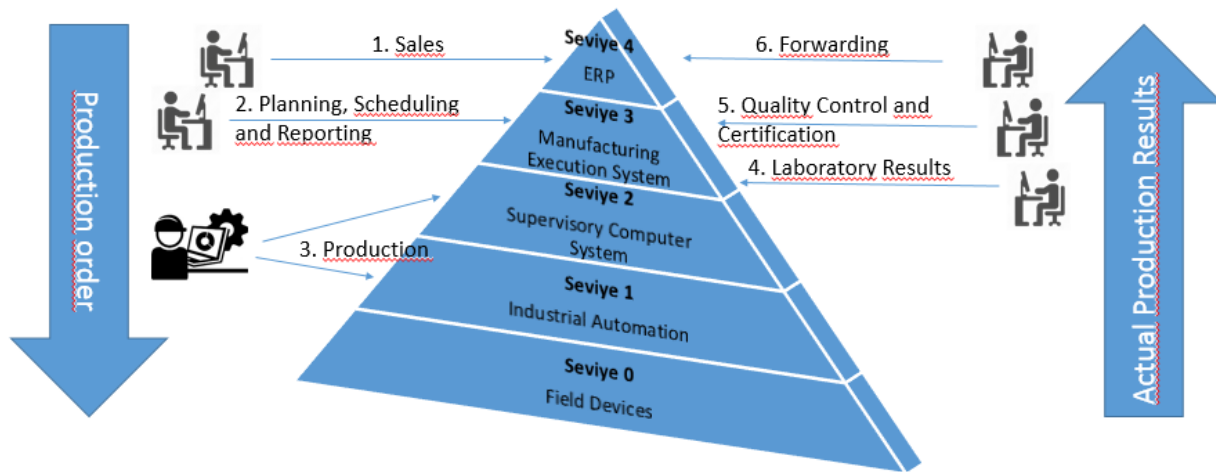
A significant portion of the products imported with this investment, which aims to remove Turkey's external dependence in advance-technology steel products, is met domestically and contributes to the reduction of the current deficit.

Tin, galvanized sheet, painted sheet, cold rolled sheet, and acid-oil roll production is completed at the facilities where about 800 people work with a rolling capacity of 1.2 million tons. The products used in a wide array from the packaging industry to electrical home appliances, from information products to the construction sector, from appliances to automotive don't meet the needs of just Turkey but of a wide geography stretching from Europe to the Caucasus and from the Middle East to North Africa.

About Toyo Kohan

Toyo Kohan was founded as the first tin plate producer in Japan in 1934. It is in the position of the number-one company that is a pioneer in Japan and has the most advanced production technologies in the world in electro-galvanized, nickel coating, surface-processed steel, chromium coating, and film-coated steel. The turnover of Toyo Kohan, which has investments in Japan, Malaysia, and China, was \$1.5 billion in 2017. The Company employs about 1,300 people.

2.2 About my department



My position in the department was level 3-2(Planning, Scheduling and Reporting)

- Main topics and products

1. Monitoring of all factory data from the office
2. Production optimization as a result of data analysis
3. Analysis of production costs and questioning of increasing costs
4. Preventing human errors by automating energy consumption reports
5. Enables machine learning and modeling through stored data
6. Establishing KPIs of production lines and enabling instant monitoring
7. To be able to conduct statistical studies by storing long-term historical data

Tosyalı Toyo Çelik A.Ş.

TosyalıToyo

Hesaplıdır HASAN.AV/SAR Log out

PLTCM	CAL	ECL	BAF
Günlük Üretim: 1825.35 Ton	Günlük Üretim: 407.18 Ton	Günlük Üretim: 0 Ton	Günlük Üretim: 83.58 Ton
Dünlük Üretim: 2632.78 Ton	Dünlük Üretim: 806.47 Ton	Dünlük Üretim: 0 Ton	Dünlük Üretim: 83.26 Ton
Aylık Üretim: 23051.18 Ton	Aylık Üretim: 5409.23 Ton	Aylık Üretim: 3816.80 Ton	Aylık Üretim: 5858.62 Ton
Geniş Kalınlık: 1.65 mm	Kalınlık: 0.195 mm	Kalınlık: 0.35 mm	Kalınlık: 0.249 mm
Geniş Genişlik: 1030 mm	Genişlik: 870 mm	Genişlik: 910 mm	Genişlik: 1065 mm
Çıkış Genişlik: 0 mm			
Çıkış Genişlik: 1204 mm			
1500 mpm	500 mpm	300 mpm	

DCR	ETL	CGL	CCL
Günlük Üretim: 496.58 Ton	Günlük Üretim: 577.00 Ton	Günlük Üretim: 802.26 Ton	Günlük Üretim: 0 Ton
Dünlük Üretim: 0 Ton	Dünlük Üretim: 908.84 Ton	Dünlük Üretim: 1341.22 Ton	Dünlük Üretim: 0 Ton
Aylık Üretim: 9698.77 Ton	Aylık Üretim: 4377.71 Ton	Aylık Üretim: 21675.17 Ton	Aylık Üretim: 2864.28 Ton
Kalınlık: 0.205 mm	Kalınlık: 0.23 mm	Kalınlık: 0.499 mm	Geniş Kalınlık: 0.5 mm
Genişlik: 975 mm	Genişlik: 912 mm	Genişlik: 1205 mm	Geniş Genişlik: 1445 mm
	Üst Kaplama: 2.8 g/m²	Üst Kaplama: 30 g/m²	
	Alt Kaplama: 2.8 g/m²	Alt Kaplama: 30 g/m²	
1500 mpm	400 mpm	200 mpm	500 mpm

ETL-SH	GI-CTL	GI-SL	ETL-IL
Günlük Üretim: 0 Ton	Günlük Üretim: 0 Ton	Günlük Üretim: 21.81 Ton	Günlük Üretim: 99.85 Ton
Dünlük Üretim: 0 Ton	Dünlük Üretim: 0 Ton	Dünlük Üretim: 233.27 Ton	Dünlük Üretim: 39.31 Ton
Aylık Üretim: 1743.63 Ton	Aylık Üretim: 574.26 Ton	Aylık Üretim: 3411.38 Ton	Aylık Üretim: 477.55 Ton
Kalınlık: 0.281 mm	Kalınlık: 0.5 mm	Kalınlık: 0.5 mm	Kalınlık: 0.31 mm
Genişlik: 1067.5 mm	Genişlik: 1243 mm	Genişlik: 1250 mm - Adet: 1	Genişlik: 1067.19 mm
200 mpm	200 mpm	400 mpm	300 mpm

TOSYALI TOYO

Tosyalı Toyo Çelik A.Ş.

172.22.0.82/ElektrikTuketim.aspx

Hesaplıdır HASAN.AV/SAR Log out

Başlangıç Tarihi: 2018-12-19 Başlangıç Saati: 00:00 Bitiş Tarihi: 2018-12-19 Bitiş Saati: 15:00

☒ Bugün ☐ Bu Hafta ☐ Bu Ay ☐ Tarih Seç

☒ Geçen Hafta ☐ Geçen Ay ☐ Geçen Yıl

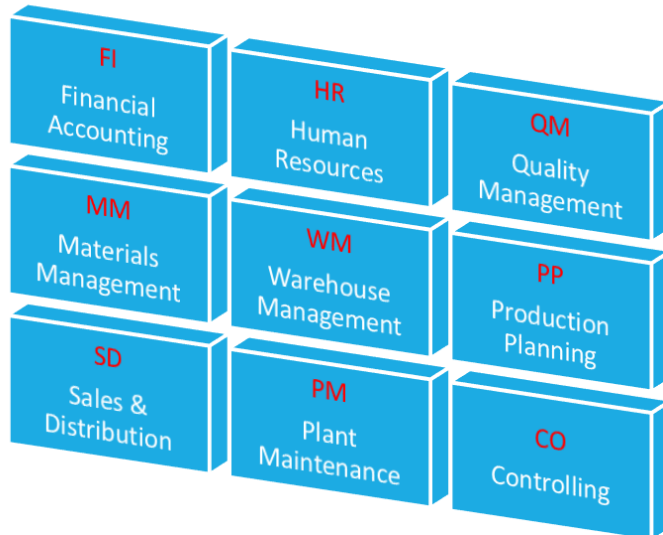
Goeder Export

TARİHİ	SAAT	PL KWH	TCM KWH	COMP KWH	ETL KWH	CGL KWH	UTILITY KWH	CAL KWH	DCR KWH	CCL KWH	BAF KWH	ECL KWH	ROLLSHOP KWH	SSC KWH	SS KWH
2018-12-19	00:00	850	7110	3320	4700	2935	1620	1928	889	82	124	28	121	93	276
2018-12-19	01:00	900	10430	3330	5290	2158	1620	1940	851	85	122	28	119	117	245
2018-12-19	02:00	880	8620	3320	5470	2541	1440	1936	301	83	117	27	119	126	272
2018-12-19	03:00	850	8080	3330	5050	3480	1450	1921	185	84	120	29	125	146	285
2018-12-19	04:00	870	9640	3340	4920	2498	1370	1946	192	82	116	28	119	143	285
2018-12-19	05:00	850	9500	3360	4610	3295	1360	1924	188	81	98	28	132	154	312
2018-12-19	06:00	820	7840	3380	4800	3285	1560	1943	206	81	99	28	124	64	328
2018-12-19	07:00	830	8790	3340	4330	2148	1410	1940	192	83	98	32	138	39	328
2018-12-19	08:00	860	8080	3370	4430	2158	1330	1956	227	78	75	29	133	36	350
2018-12-19	09:00	820	4760	3350	4300	3638	1620	1951	344	88	79	29	136	74	349
2018-12-19	10:00	870	9620	3320	3790	3723	1600	1932	473	82	69	29	137	95	298
2018-12-19	11:00	920	11130	3370	3490	3492	1710	1923	436	87	69	28	134	111	280
2018-12-19	12:00	960	6800	3390	3440	2145	1340	1917	441	86	75	28	129	143	324
TOPLAM KWH															
TOPLAM KWH	PL KWH	TCM KWH	COMP KWH	ETL KWH	CGL KWH	UTILITY KWH	CAL KWH	DCR KWH	CCL KWH	BAF KWH	ECL KWH	ROLLSHOP KWH	SSC KWH	SS KWH	
31317	11180	109310	43520	58620	31475	19430	25157	5036	1082	1252	371	1665	1293	3527	

TOSYALI TOYO

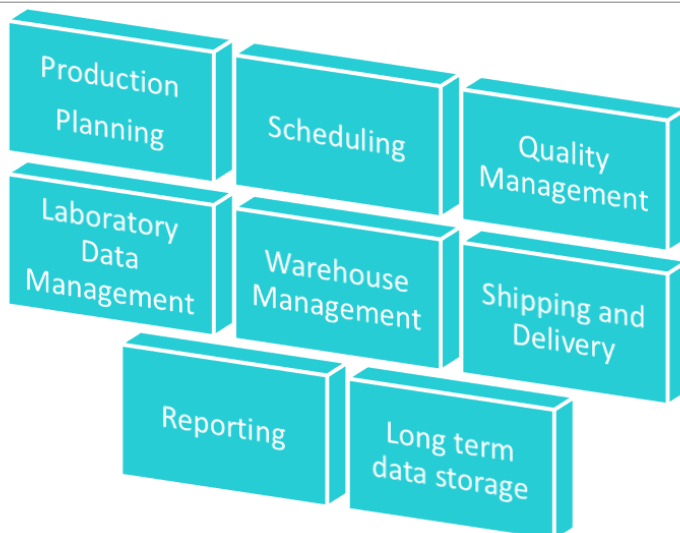
2.3 About the hardware and software systems

Level 4 (Enterprise Resource Planning)



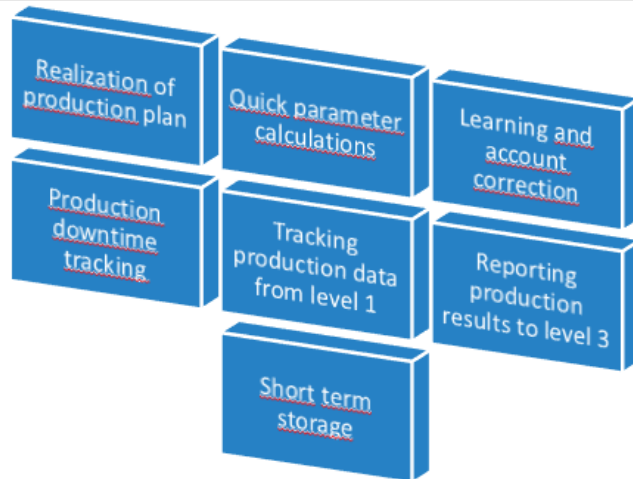
C, C++, ABAP
HANA

Level 3 (Manufacturing Execution System)



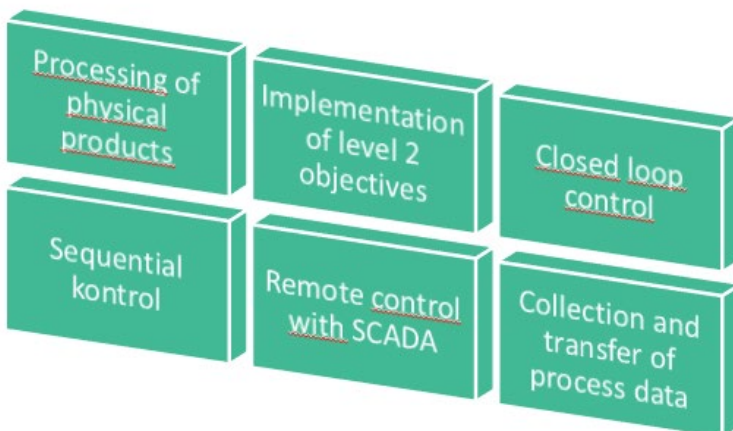
Java
Oracle

Level 2 (Supervisory Computer System)



C#
C/C++
ASP.Net
Oracle
MS SQL Server
In-Memory DB

Level 1 (Industrial Automation)



SIEMENS
HITACHI
FE Fuji Electric

2.4 About supervisor

- İlker Satmaz,
- Büyük Tüysüz District. Kudamatsu Street No:4, 80950 Toprakkale/Osmaniye
- 0536 893 3767,
- ilker.satmaz @ tosyalitoyo.com.tr
- 9 Eylül University Computer Engineering

3 Work Done

3.1 Seminars

I attended to a lot of courses related to software engineering, occupational health and safety, programming techniques and on the use of tools and software within the factory.

In the seminar courses, c programming, how to ensure work safety in the factory, what should be done in case of emergency, working principles of the tools in the factory, how the work flow, training was given about the use of technological tools in the factory.

3.2 Project

My main project task is to make DnD (drag and drop) using SAPUI5. This was to make it easier for employees to track changes made to large iron rolls and write applications running on the phone and on the computer. The importance of my project is to minimize the complexity and reduce the margin of error, thus saving time and manpower. My main motivation was improve myself by reflecting the knowledge I learned at school to my professional life and to adapt to my professional life. The project was made with eclipse SAPUI5 plugin on windows 10 operating system. We have decided that SAPUI5's own tools are insufficient for the dnd table. To solve this problem I downloaded an extra script file from the internet. I have created the necessary interface in front-end using xml.view. I provided a solution to the problem by using the Javascript file in the back-end.

```
var id;
// if area is cell,allow drop
function allowDrop(ev){
    ev.preventDefault();
}
//drag item
function dragStart(ev){
    id=ev.target.id;
}
//drop item
function drop(ev){
    ev.target.append(document.getElementById(id));
}
```

Figure 2: Simple Code

You	can	not	drop	here
Drag		and	drop	
table				content
		JavaScript		
		with		
				😊

Table2	and			
Drag			drop	table ▼
content				
	with		JavaScript	

GET INDEX

Changed: 4 2	Smile			☐ ☐ ☐
		Clone		
(1) Clone				(2) Clone
☐ ☐ ☐				Trash

Figure 3: Final Version Of The Project

4 Performance and Outcomes

4.1 Applying Knowledge and Skills Learned at Hacettepe

I used some skills and technologies which i learned in Hacettepe University. For example I was supposed to implement MVVM(Model–view–viewmodel) design pattern in the project, because I had already seen it in Software Engineering(BBM 382) I could easily implement it.

4.2 Solving Engineering Problems

As I said in 'Applying Knowledge and Skills Learned at Hacettepe'. I also applied these techniques including design patterns and engineering methods.

4.3 Teamwork

I was not in a team while i was doing my internship . But i and other research-development workers and interns did conversations.So we improved each other.

4.4 Multi-Disciplinary Work

Tosyali Toyo Celik A.S. has to apply multi-disciplinary work in their every project. For example management engineers work there. Also there are many electric/electronic ,machine engineers, computer engineers.

4.5 Professional and Ethical Issues

4.6 Impact of Engineering Solutions

During the internship, during the software development period, I learned that there are many factors besides coding and the most important factor is the harmony of the departments within each other.

4.7 Locating Sources and Self-Learning

When I was coding the project, the resources I used in the internship were libraries, documents, youtube and github projects.

4.8 Using New Tools and Technologies

The new technologies I use during my internship are SAPUI5, ABAP, Javascript. To find out, I reviewed the documents on the internet. Advantages make things easier. The downside to SAPUI5 is that it is not widely used and there are no easy solutions to some problems. ABAP is a high-paid software and is extremely low in use because it is an IP-dependent proprietary software.

5 Conclusions

This internship basically gave me idea about software development and business industry. After things i learned, i have gained vision about my future plans. I learned so many things about SAPUI5 , ABAP, Javascript. Also i learned how to program with “C” and making projects on “Visual Studio”. Besides all of these topics, i have seen factory workflow, debugging and what developers environment really look like.

References

- [1] <https://sapui5.hana.ondemand.com/>
- [2] <https://www.wikizeroo.org/index.php?q=aHR0cHM6Ly9lbi53aWtpcGVkaWEub3JnL3dpa2kvTW9kZWwigJN2aWV34oCTdmlld2lvZGVs>
- [3] <https://www.w3schools.com/js/>
- [4] <https://www.redips.net/javascript/redips-drag-documentation/>
- [5] https://www.tutorialspoint.com/sap/sap_programming_language.htm
- [6] <https://devdocs.io/javascript/>