Fiber Optic

Stock Management System

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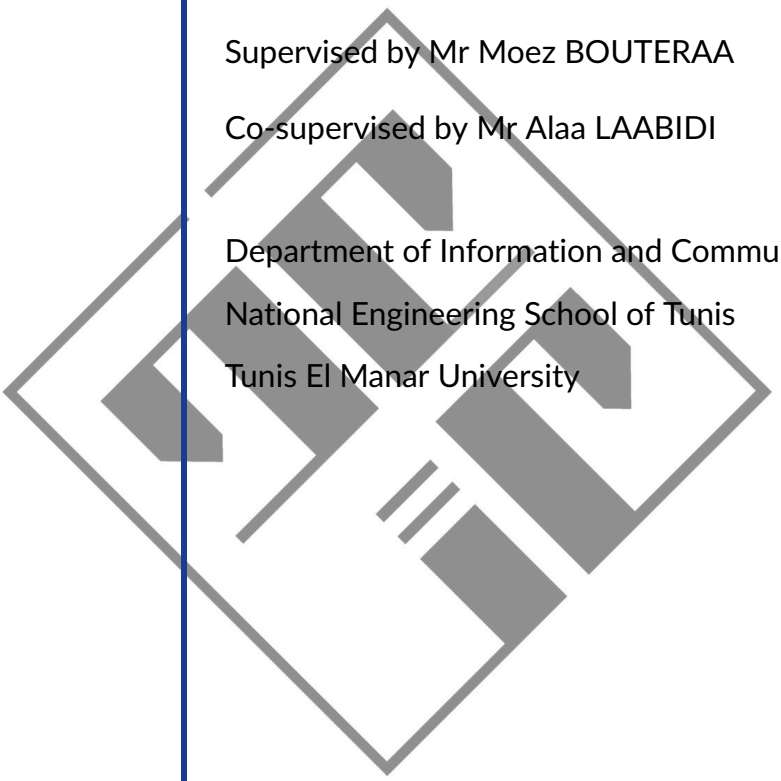

From 06 Jul. To 07 Aou. 2019

An Internship Report submitted in partial fulfilment of the requirements for the degree of Software Engineering.

TUNISIE TELECOM

First edition, September 16, 2019

Declaration by Undergraduate Students

(a) Authenticity of Report

I hereby declare that I am the legitimate author of this Report and that it is my original work.

No portion of this work has been submitted in support of an application for another degree or qualification of this or any other university or institution of higher education.

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Faculty/Institute/Centre/School	National Engineering School of Tunis
Degree	Software Engineering
Title	Fiber Optic
Candidate (Id.)	Khalil SLEIMI (12196/A)

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Date	September 16, 2019

12.09.2019

Everything not saved will be lost.

–Nintendo 'Quit Screen' message

Acknowledgements

I'd like to take the time to acknowledge My Supervisor **Moez BOOTERAA** for all the help he gave and the work inducive environment he provided. I'd also like to acknowledge my co-Supervisor **Alaa LAABIDI** for always being there for me to check my progress, helping and all the encouragement and trust he puts in me. I'd also like to thank **My Sister** for her constant encouragement and help, but most importantly I'd like to thank **My Parents** for all their efforts raising me up and guaranteeing such an environment that allowed me to flourish into who I am Now. For all the Times they spent thinking and worrying about me, Thank you.
Thank you all, I appreciate it, I'd also like to thank **ENIT** and all the **Teachers** and **Staff** for their insights: True Growth Comes from your own efforts, hard work and curiosity, the school can only give you a gentle glimpse at best.

Abstract

Stock Management Programs that are based on **Databases** can be a huge time savior, lowering the **time** it takes to find what you're looking for and minimizing the risk for **data inconsistencies** and **redundance** that are found among many alternatives like .xml files, also it can guarantee a **separation of concerns** through different **permissions**, and that in turn lowers the risk of users tinkering with things they are not allowed to.
In this report we talk about the **conception**, **design** and **realisation** of a Stock Management WebApp for Tunisie Telecom's Stock of fiber optics, with a separation of Permissions between what different User types can do.

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List of Abbreviations

1

Introduction

In this section I will explain and summarize what my internship and intership reports were all about and give a brief outline for the following chapters.

1.1 | Motivation

As part of my Computer Science Curriculum in the National Engineering School of Tunis, I wanted to complete my internship in a company that is in line with my professional orientation. I did not choose a Telecommunications Company because I wanted to switch to the field of Telecommunications afterwards, but because the mission that was proposed to me was consistent with my professional goals.

Indeed, my primary mission was to observe the environment and interaction of Tunisie Telecom's employees and their discipline and hard work, I also discovered several new tools and techniques that were above me, I also learned of several devices and techniques employed by Tunisie Telecom to guarantee their Networks are top notch, it was a great opportunity for me to actually be in such an environment, which gave me more courage as a student to see myself becoming a software engineer.

In a second time, I had to design a Web Platform, which is accessible locally. Its role is to enable all Tunisie Telecom staff of Creating, Storing, Updating and Deleting different entries of a Fiber Optics stock management program according to their User Type, putting as a priority the simplicity and efficiency of the Web Platform.

Finally, I'm very satisfied of this internship because it introduced me to a lot of new concepts like HTML, CSS, BootStrap, PHP, MySQL, LAMP stack, Linux and even Git

Version Control Systems in a domain that I love. And also allowed me to highlight my skills aquired during my Software Engineering year of studies.

The place where I did the Internship is shown in Figure 1.1.

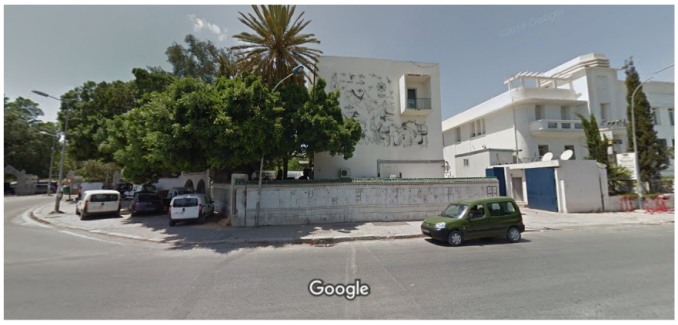

Figure 1.1: Tunisie Telecom

This is an Image from Google Maps of the Digital Transmission Center (Centre de Transmission Numérique - CTN) of Tunisie Telecom based in Place Pasteur, Belvedere, hereafter noted DTC. Where I did my Internship.

1.2 | Aims and Objectives - Outline

Besides this Chapter chapter 1 and the Conclusion chapter 4. There are two main chapters:

- In Chapter chapter 2,I will Introduce Tunisie Telecom DTC Belvedere, the company's history and its field of Telecommunications and the things I saw there, as well as the Data Unit (Unité Data) branch, that is responsible for dealing with big companies and clients in which I worked.
- In Chapter chapter 3, I will Introduce the Problem that we faced in Tunisie Telecom alongside the Solution I came up with, It's analysis, conception and realisation alongside the tools I learned throughout the way.

2

Organization Overview

In this section we'll review Tunisie Telecom's History, Notable leaders, Its' business sector and the wide range of clients it offers its services to, as well as its' organizational hierarchy and the work environment I witnessed. (i.e. in the following sections)

2.1 | Introduction to Tunisie Telecom & History

2.1.1 | Introduction to TT

Tunisie Telecom is the brand name of the historical provider of telecommunication services in Tunisia. Its capital is 875 million euros and its transaction number, in 2004, amounted to 750 million euros.

Tunisie Telecom has more than 6 million fixed and mobile subscribers in Tunisia and abroad. It also plays an important role in improving the Internet's influence in Tunisia, which ultimately allowed it to have 140,000 subscribers by the end of April 2008. **Comment: Find more recent data**

2.1.2 | History

The law establishing the National Telecommunications Office, whose commercial name is Tunisie Télécom, was promulgated on 17 April 1995 and came into force on 1 January 1996.

Tunisie Télécom sets up, operates and markets the first GSM network in Mauritania (Mattel) from May 2000. It also enters into a technical cooperation agreement with Djibouti Telecom for the development of its telecommunications networks.

It became a public limited company at the end of 2002, it changes its legal status, by a decree of April 5, 2004, to become a limited company called "Tunisie Telecom". It is experiencing partial privatization in July 2006 with the entry into its capital, up to 35%, of the Emirati consortium EIT (Emirates International Telecommunications).

From 2008, Tunisie Telecom offers the possibility to national bank card holders to feed the balance of their prepaid lines via ATMs of the Arab Tunisian Bank (Mobilink service).

On March 21, 2009, Tunisie Telecom launched a new brand, Elissa, with offers specifically designed for young people under 25; it becomes accessible to all without age limit as of March 10, 2012.

In the spring of 2011, following the Tunisian revolution, the company is shaken by a major social conflict between the representatives of the Tunisian General Labor Union (UGTT) and those of its UAE shareholder over the fate of some 60 contracts representing 3.5% of the payroll; it is marked by strikes and sit-ins affecting the proper functioning of the operator. It ends with the end of these employment contracts, with the exception of ten contract holders retaining their positions.

In September 2012, Chief Executive Officer (CEO) Ali Ghodhbani retires and is replaced by Mokhtar Mnakri, former CEO of Alcatel's subsidiary.

In 2014, Salah Jarraya was appointed CEO to replace Mnakri, whose term was coming to an end.

In June of the same year, the employees started a social movement to obtain a salary increase and to claim the application of the agreements signed in February 2011. They gather around the UGTT and carry out many work stoppages until May they succeed in May 2015. Following these social movements and strikes, Jarraya resigns on July 2nd.

On August 12, Nizar Bouguila is appointed CEO.

On March 15, 2016, Tunisie Telecom launched its new visual identity called "Life is Emotions", with a new logo. In August, Tunisie Telecom finalizes the purchase of 65.4% of the entire capital of GO (en).

Bouguila is replaced on September 19, 2017 by Mohamed Fadhel Kraiem. On November 7, Tunisie Telecom signed a five-year contract with the Ministry of Information Technologies and the Digital Economy to cover white areas with broadband telecommunications services.

On December 13, 2017, UAE investment fund Abraaj announced that it had signed an agreement the day before for the definitive purchase of EIT's 35% stake. However, the bankruptcy of the fund cancels the operation.

2.2 | Global Leaders of Tunisie Telecom

Ali Ghodhbani - Mokhtar Mnakri - Salah Jarraya - Nizar Bouguila - Mohamed Fadhel Kraiem

2.3 | Activities of Tunisie Telecom & Clients

This section should contain information on the metrics and background used to evaluate your work.

2.4 | Related Work

In this section you need to explain (and reference) similar work in literature. Make sure to:

- Give a systematic overview of papers with related/similar work
- Highlight similarities/differences to your work (perhaps in the form of a table)

Note that this section may be sectioned based on the different aspects of your dissertation. Some referenced text, as an example (Arrighi, 2003; Ebejer et al., 2016; Withers-Martinez et al., 2012).

2.5 | Organizational Hierarchy

The Organizational Hierarchy of Tunisie Telecom is shown in Figure **??**.

This is an Image outlining the Organizational Hierarchy of Tunisie Telecom

2.6 | Work Environment

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language. There is no need for special content, but the length of words should match the language.

3

The Stock Management Web Application

This section should include a recipe of what you did (explain what you have done so if someone wants to reproduce the experiment, they can). A flow chart is typically helpful. Also, make sure to define all software that you used including version numbers and OS. Should also include a description of statistical methods used (if any).[1]

3.1 | Introduction

3.2 | Tools Used

3.3 | Analysis & Conception

3.4 | Realisation

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[1] For more information see: `http://rc.rcjournal.com/content/49/10/1229.short`

language. There is no need for special content, but the length of words should match the language.

4

Conclusions

Should include a reiteration of the experiments, and their outcome. Together with a description (discussion). Preamble should include a reminder of the aims and objectives together with a list of experiments to achieve these. Should include many charts and other visualization with appropriate descriptions.

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After this fourth paragraph, we start a new paragraph sequence. Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like "Huardest gefburn"? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

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4.1 | An Example of a Table Spanning Multiple Pages

The following is an example of a table (Table 4.1) spanning multiple pages.

Table 4.1: Performance of Ligity in HTS mode against the Ligity-compatible DUD-E targets. The mean (and standard deviation in parentheses) values of ROC AUC using Tanimoto is 0.622 (±0.132), while for Tversky it is 0.671 (±0.142); the mean $EF_{1\%}$ using Tanimoto is 5.648 (±8.668), while for $EF_{1\%}$ using Tversky it is 9.047 (±12.713).

Target	No. of Actives	No. of Decoys	ROC AUC Tanimoto	ROC AUC Tversky	BEDROC Tanimoto	BEDROC Tversky	$EF_{1\%}$ Tanimoto	$EF_{1\%}$ Tversky
ABL1	182	10,750	0.563	0.473	0.077	0.077	1.653	2.204
ACE	281	16,877	0.787	0.787	0.336	0.401	12.425	19.525
ACES	453	26,242	0.634	0.645	0.077	0.155	1.766	5.518
ADA	93	5,450	0.724	0.660	0.149	0.147	3.251	3.251
ADA17	532	35,898	0.638	0.728	0.103	0.283	1.317	9.030
ADRB1	247	15,850	0.523	0.647	0.065	0.129	1.619	5.262
ADRB2	231	14,999	0.523	0.589	0.052	0.040	1.735	0.000

(continued...)

Target	No. of Actives	No. of Decoys	ROC AUC Tanimoto	ROC AUC Tversky	BEDROC Tanimoto	BEDROC Tversky	$EF_{1\%}$ Tanimoto	$EF_{1\%}$ Tversky
AKT1	293	16,450	0.386	0.548	0.039	0.107	2.737	3.080
AKT2	117	6,900	0.511	0.685	0.140	0.194	8.568	8.568
ALDR	159	8,988	0.574	0.610	0.202	0.172	10.747	6.322
AMPC	48	2,845	0.521	0.541	0.049	0.023	0.000	0.000
ANDR	269	14,349	0.722	0.742	0.194	0.354	4.839	24.938
AOFB	121	6,875	0.422	0.464	0.045	0.027	1.652	0.000
BACE1	283	18,100	0.441	0.775	0.017	0.310	0.000	13.062
BRAF	152	9,950	0.612	0.639	0.208	0.165	12.502	5.264
CASP3	199	10,694	0.600	0.734	0.068	0.258	0.502	7.031
CDK2	474	27,838	0.467	0.507	0.021	0.048	0.000	1.055
COMT	41	3,846	0.789	0.889	0.338	0.665	19.447	58.341
CP2C9	120	7,449	0.518	0.634	0.058	0.186	1.660	8.299
CP3A4	170	11,787	0.450	0.493	0.022	0.057	0.000	2.345
CSF1R	166	12,149	0.526	0.542	0.136	0.152	6.031	7.238
CXCR4	40	3,405	0.575	0.722	0.217	0.134	12.665	0.000
DEF	102	5,699	0.732	0.833	0.212	0.379	10.786	15.689
DHI1	330	19,348	0.481	0.595	0.089	0.062	2.422	1.211
DPP4	533	40,941	0.586	0.591	0.154	0.157	4.312	3.937
DRD3	480	34,048	0.484	0.441	0.043	0.046	1.251	0.626
DYR	231	17,196	0.694	0.758	0.210	0.230	6.504	7.371
EGFR	542	35,047	0.593	0.491	0.054	0.037	0.922	0.000
ESR1	383	20,683	0.838	0.861	0.527	0.594	31.281	39.101
ESR2	367	20,199	0.844	0.870	0.563	0.644	20.130	32.644
FA10	537	28,324	0.564	0.674	0.058	0.118	0.930	2.232
FA7	114	6,249	0.762	0.859	0.210	0.332	6.105	8.721
FABP4	47	2,749	0.786	0.744	0.191	0.276	0.000	10.623
FAK1	100	5,350	0.642	0.531	0.111	0.065	2.019	0.000
FGFR1	139	8,698	0.511	0.522	0.036	0.088	0.722	1.445
FKB1A	111	5,799	0.605	0.751	0.162	0.164	8.122	3.610
FNTA	592	51,493	0.411	0.625	0.012	0.132	0.000	4.053
FPPS	85	8,842	0.917	0.985	0.323	0.776	2.360	36.581
GCR	258	14,998	0.805	0.834	0.244	0.324	3.092	8.116
GLCM	54	3,790	0.667	0.685	0.182	0.279	1.873	11.240
GRIA2	158	11,842	0.662	0.684	0.248	0.154	11.392	5.696
GRIK1	101	6,547	0.656	0.668	0.203	0.102	7.978	1.995
HDAC2	185	10,300	0.676	0.734	0.187	0.201	4.318	4.318
HDAC8	170	10,449	0.640	0.819	0.120	0.377	2.946	8.250
HIVINT	100	6,640	0.390	0.554	0.030	0.116	0.000	3.018
HIVPR	535	35,724	0.663	0.872	0.072	0.490	0.187	23.898
HIVRT	338	18,884	0.495	0.475	0.124	0.085	4.443	1.777
HMDH	170	8,750	0.480	0.906	0.068	0.652	2.358	35.963
HS90A	88	4,850	0.635	0.506	0.096	0.083	0.000	3.436
HXK4	92	4,700	0.662	0.803	0.206	0.307	15.192	9.766
IGF1R	148	9,300	0.502	0.575	0.057	0.189	2.037	14.941
INHA	43	2,300	0.493	0.575	0.031	0.045	0.000	0.000
ITAL	138	8,500	0.619	0.465	0.037	0.065	0.000	0.728
JAK2	107	6,500	0.472	0.475	0.073	0.118	2.807	6.549
KIF11	116	6,850	0.755	0.781	0.149	0.219	4.289	2.574
KIT	166	10,449	0.463	0.437	0.045	0.030	0.000	0.000
KITH	57	2,850	0.649	0.838	0.228	0.709	14.069	47.483
KPCB	135	8,699	0.753	0.813	0.220	0.338	8.923	12.641
LCK	419	27,391	0.471	0.437	0.031	0.043	0.000	1.910
LKHA4	171	9,448	0.718	0.694	0.238	0.150	8.203	1.758
MAPK2	101	6,148	0.660	0.670	0.174	0.199	5.988	3.992
MCR	94	5,149	0.816	0.888	0.215	0.454	6.436	19.307
MET	166	11,249	0.566	0.531	0.130	0.065	6.032	0.603
MK01	79	4,550	0.518	0.602	0.121	0.206	5.095	3.821
MK10	104	6,600	0.488	0.489	0.020	0.031	0.962	0.962
MK14	578	35,847	0.511	0.589	0.040	0.064	0.173	0.519
MMP13	572	37,199	0.648	0.753	0.134	0.268	2.446	9.957

(continued…)

Target	No. of Actives	No. of Decoys	ROC AUC Tanimoto	ROC AUC Tversky	BEDROC Tanimoto	BEDROC Tversky	$EF_{1\%}$ Tanimoto	$EF_{1\%}$ Tversky
MP2K1	121	8,146	0.669	0.569	0.187	0.058	3.293	0.823
NOS1	98	8,028	0.483	0.451	0.109	0.041	3.071	0.000
NRAM	98	6,200	0.853	0.859	0.342	0.290	11.221	3.060
PA2GA	99	5,150	0.793	0.756	0.225	0.153	1.020	3.059
PARP1	508	30,029	0.635	0.692	0.215	0.231	11.234	7.884
PGH1	195	10,798	0.645	0.637	0.077	0.100	0.000	2.050
PGH2	435	23,139	0.716	0.780	0.166	0.291	3.444	9.874
PLK1	107	6,800	0.658	0.531	0.123	0.048	1.871	0.000
PNPH	103	6,946	0.575	0.578	0.161	0.181	4.888	8.799
PPARA	373	19,399	0.783	0.778	0.262	0.280	6.693	7.764
PPARD	240	12,250	0.547	0.544	0.078	0.098	1.665	2.498
PPARG	484	25,299	0.515	0.605	0.055	0.118	0.619	4.955
PRGR	293	15,648	0.740	0.793	0.142	0.318	2.053	14.714
PTN1	130	7,249	0.398	0.538	0.055	0.090	0.000	3.068
PUR2	50	2,700	0.851	0.837	0.281	0.255	7.857	1.964
PYGM	77	3,944	0.403	0.492	0.016	0.137	0.000	3.917
PYRD	111	6,449	0.682	0.710	0.462	0.413	34.027	16.118
RENI	104	6,956	0.720	0.789	0.043	0.138	0.000	0.000
ROCK1	100	6,300	0.347	0.449	0.020	0.084	1.000	4.000
RXRA	131	6,950	0.788	0.900	0.219	0.596	6.091	27.407
SAHH	63	3,450	0.874	0.852	0.598	0.542	35.050	27.084
SRC	524	34,500	0.565	0.477	0.065	0.050	0.382	0.573
TGFR1	133	8,499	0.609	0.639	0.147	0.154	10.565	4.528
THB	103	7,450	0.794	0.762	0.238	0.150	10.614	0.965
THRB	461	27,000	0.605	0.706	0.063	0.166	2.166	5.632
TRY1	449	25,975	0.711	0.815	0.147	0.280	2.898	6.688
TRYB1	148	7,650	0.670	0.670	0.153	0.132	3.378	3.378
TYSY	109	6,745	0.594	0.725	0.071	0.226	0.911	5.468
UROK	162	9,850	0.525	0.650	0.036	0.120	0.000	1.854
VGFR2	409	24,948	0.632	0.578	0.083	0.093	1.465	1.465
WEE1	102	6,150	0.934	0.929	0.789	0.797	59.348	61.294
XIAP	100	5,150	0.752	0.974	0.190	0.897	8.077	51.490

4.2 | Some Other Section

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4.3 | A Landscape Table Example

Next is an example of a wide table on a landscape oriented paper.

m	x	y	z	a	A_m	B	C	x	y	z	a	A_m	B	C
1	16.128	+8.872	16.128	1.402	1.373	-146.6	-137.6	16.128	+8.872	16.128	1.402	1.373	-146.6	-137.6
2	3.442	-2.509	3.442	0.299	0.343	133.2	152.4	3.442	-2.509	3.442	0.299	0.343	133.2	152.4
3	1.826	-0.363	1.826	0.159	0.119	168.5	-161.1	1.826	-0.363	1.826	0.159	0.119	168.5	-161.1
4	0.993	-0.429	0.993	0.086	0.08	25.6	90	1.826	-0.363	1.826	0.159	0.119	168.5	-161.1
5	1.29	+0.099	1.29	0.112	0.097	-175.6	-114.7	1.826	-0.363	1.826	0.159	0.119	168.5	-161.1
6	0.483	-0.183	0.483	0.042	0.063	22.3	122.5	1.826	-0.363	1.826	0.159	0.119	168.5	-161.1
7	0.766	-0.475	0.766	0.067	0.039	141.6	-122	1.826	-0.363	1.826	0.159	0.119	168.5	-161.1
8	0.624	+0.365	0.624	0.054	0.04	-35.7	90	1.826	-0.363	1.826	0.159	0.119	168.5	-161.1
9	0.641	-0.466	0.641	0.056	0.045	133.3	-106.3	1.826	-0.363	1.826	0.159	0.119	168.5	-161.1
10	0.45	+0.421	0.45	0.039	0.034	-69.4	110.9	1.826	-0.363	1.826	0.159	0.119	168.5	-161.1
11	0.598	-0.597	0.598	0.052	0.025	92.3	-109.3	1.826	-0.363	1.826	0.159	0.119	168.5	-161.1

4.4 | Summary

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5

Evaluation

In an ideal world, you should have two kind of evaluations. The first is against some ground truth (perhaps a random model?). The second kind of evaluation is against other people's work (accuracy, speed, etc.). Any dimension which is of interest, should be evaluated. Evaluation should be statistically sound.

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5.1 | Summary

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6

Conclusions

This section should have a summary of the whole project. The original aims and objective and whether these have been met should be discussed. It should include a section with a critique and a list of limitations of your proposed solutions. Future work should be described, and this should not be marginal or silly (e.g. add machine learning models). It is always good to end on a positive note (i.e. 'Final Remarks').

6.1 | Achieved Aims and Objectives

Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like "Huardest gefburn"? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

6.2 | Critique and Limitations

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6.3 | Future Work

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6.4 | Final Remarks

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A

Media Content

If the dissertation has a DVD or pendrive attached to it, you will need a section which explains what is on the media (structure, files, data, etc.). This could be a table with filename and description.

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B

Installation Instructions

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C

User Manual

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