

TABLE OF CONTENTS

TITLE PAGE	i
STATEMENT	ii
ACKNOWLEDGEMENTS	iii
TABLE OF CONTENTS	vi
LIST OF TABLES	viii
LIST OF FIGURES	ix
LIST OF APPENDICES	xii
ABSTRACT	xiii
I INTRODUCTION	1
1.1 Research Background	1
1.2 Research Problem	3
1.3 Research Scope	3
1.4 Research Objectives	4
1.5 Research Benefits	4
II LITERATURE REVIEW	5
III FUNDAMENTAL THEORIES	12
3.1 Medical Records	12
3.1.1 Personal Health Records (PHR)	12
3.1.2 Electronic Medical Records (EMR)	12
3.1.3 Electronic Health Records (EHR)	13
3.2 Open Source Software	13
3.3 OpenEMR	14
3.4 Interoperability	18
3.5 Semantic Web	20
3.6 FHIR	21

3.6.1	FHIR Resources	22
3.7	Supervised Learning	26
3.7.1	Naïve-Bayes	27
IV	RESEARCH METHOD	29
4.1	Research Overview	29
4.2	Tools and Resources	29
4.2.1	Hardware	30
4.2.2	Softwares	30
4.3	Research Stages	30
4.3.1	Literature Study	30
4.3.2	Data Acquisition	30
4.3.3	Implementation	35
4.3.4	Evaluation	42
V	IMPLEMENTATION DESIGN	45
5.1	Data Acquisition	45
5.2	Mapper	55
5.2.1	Preprocessing	58
5.2.2	Classification	63
VI	EVALUATION	68
6.1	Testing	68
6.2	Another Classification Technique	70
6.3	Results Overview	72
6.4	Reaction to the Results	76
6.5	Comparison	78
VII	CONCLUSION AND RECOMMENDATION	80
7.1	Conclusion	80
7.2	Recommendation	80
	BIBLIOGRAPHY	82