

**Guru Nanak Dev Engineering College Ludhiana**  
(Department of Computer Science and Engineering)

**Format for Minor Project Report**

**Title page**

Abstract	i
Acknowledgement	ii
List of Figures	iii
List of Tables	iv
Table of Contents	v

**Chapter 1 Introduction**

**Page**

Introduction to Project  
Project Category(Internet based, Application or System Development,  
Research based ,Industry Automation, Network or System Administration)  
Objectives  
Problem Formulation  
Identification/Reorganization of Need  
Existing System  
Proposed System  
Unique Features of the System

**Chapter 2. Requirement Analysis and System Specification**

Feasibility study (Technical, Economical, Operational)  
Software Requirement Specification Document which must include the  
following:  
(Data Requirement, Functional Requirement, Performance Requirement  
,Dependability Requirement, Maintainability requirement, Security requirement, Look  
and feel requirement)  
Validation  
Expected hurdles  
SDLC model to be used

**Chapter 3. System Design**

Design Approach (Function oriented or Object oriented)  
Detail Design  
System Design using various Structured analysis and design tools such as :  
DFD's,Data Dictionary,Structured charts,Flowcharts or UML  
User Interface Design  
Database Design  
ER Diagrams

Normalization  
Database Manipulation  
Database Connection Controls and Strings  
Methodology

#### **Chapter 4. Implementation, Testing, and Maintenance**

Introduction to Languages, IDE's, Tools and  
Technologies used for Implementation  
Coding standards of Language used  
Project Scheduling using various tools such as PERT, GANTT  
charts, OpenPROJ etc.  
Testing Techniques and Test Plans

#### **Chapter 5. Results and Discussions**

User Interface Representation (of Respective Project)  
Brief Description of Various Modules of the system  
Snapshots of system with brief detail of each  
Back Ends Representation (Database to be used )  
Snapshots of Database Tables with brief description

#### **Chapter 6. Conclusion and Future Scope**

#### **References/Bibliography**

# **SPECIFICATIONS FOR MINOR PROJECT REPORT**

1. Report shall be computer typed (English- British, Font -Times Roman, Size-12 point) and printed on A4 size paper.
2. The Report shall be hard bound with cover page in white color. The name of the candidate, degree (specifying the branch) ,roll no, session , year of submission, name of the University including college name shall be printed in black on the cover [Refer sample sheet (outer cover)]
3. The report shall be typed on one side only with double space with a margin 3.5 cm on the left, 2.5 cm on the top, and 1.25 cm on the right and at bottom.
4. In the report, the title page [Refer sample sheet (inner cover)] should be given first then the Certificate by the candidate and the supervisor(s) in sequence, followed by an abstract of the report (not exceeding 1500 words). This should be followed by the acknowledgment, list of figures/list of tables, notations/nomenclature, and then contents with page no.s
5. References and Bibliography should be included in report.
7. The diagrams should be printed on a light/white background, Tabular matter should be clearly arranged. Decimal point may be indicated by full stop(.)The caption for Figure must be given at the BOTTOM of the Fig. and Caption for the Table must be given at the TOP of the Table.
8. The graphs should be combined for the same parameters for proper comparison. Single graph should be avoided as far as possible.
9. Conclusions must not exceed more than two pages.
10. The report must consist of following chapters
  - Chapter 1- Introduction
  - Chapter 2- Requirement Analysis and System Specification
  - Chapter 3- System Design
  - Chapter 4- Implementation, Testing and Maintenance
  - Chapter 5-Results and Discussions
  - Chapter 6-Conclusion and Future Scope
  - References
  - Appendix (if any)
  - Annexures-I,II,III
11. There should be 3 copies of Final Report.

**SENTIMENTAL ANALYSIS OF  
TWITTER DATA USING BIG DATA  
ANALYTICS** (24pt.)

**MINOR PROJECT REPORT** (14pt.)

SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE  
AWARD OF THE DEGREE OF (12pt.)

**BACHELOR OF TECHNOLOGY**  
(Computer Science and Engineering) (14pt.)

GNDEC Logo

Submitted By:

Priyanka Walia (1302768) (14pt)  
Deepak Kumar (1302777) (14pt)

Submitted To.:

Prof. ( *Project Guide Name*)  
*Designation*

**Department of Computer Science and Engineering**  
**Guru Nanak Dev Engineering College**  
Ludhiana, 141006 (14pt.)

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## **Abstract(Sample)**

Packet Filtering firewalls can use a database of rules to decide which packets will be allowed to move in and out and from one network onto another. However with the increase in size of rule list, it's very hard to manage and validate the rules, which can also increase the cost of rule lookup and that may add significantly to latency. Packet filtering is the one of the major contemporary firewall design techniques. Implementation of such packet filter using Binary Decision Diagram (BDD) gives more advantages in terms of memory usage and look up time. In the case of the list-based packet filter firewall where rules are checked one by one for each incoming packet, the time taken to decide on a packet is proportional to the number of rules. The performance is improved with rule promotion but that is a slow and static kind of firewall implementation. In this work a BDD-based approach is presented which gives much better result in terms of number of comparisons or accesses the rule list make. This work presents the study, design and implementation of a packet filter firewall using binary decision diagram which provides faster processing of packets while maintaining the integrity of the original security policy. Results on large number of packets show that for most-accept packets, and for most- reject packets there is manifold reduction in such comparisons when BDD-based approach is used over list-based with promotion approach.

The overall performance of a firewall is crucial in enforcing and administrating security, especially when the network is under attack. The continuous growth of the Internet, coupled with the increasing sophistication of the attacks, is placing stringent demands on firewall performance. In this work, a traffic-aware optimization framework is described to improve the operational cost of firewalls. Based on this framework a set of tools are designed that inspect and analyze both multidimensional firewall rules and traffic logs and construct the optimal equivalent firewall rules based on the observed traffic characteristics. The current work is the first to use traffic characteristics in firewall optimization. To evaluate the performance of current approach, a large set of firewall rules and traffic logs from a local LAN or at tens of enterprise networks managed by a Tier-1 service provider are evaluated. The evaluated results find these approaches very effective. In particular, current work has achieved more than 10 fold performance improvement by using the proposed traffic-aware firewall optimization.

## SAMPLE SHEET-ACKNOWLEDGEMENT

### ACKNOWLEDGEMENT

I/WE are highly grateful to the Dr. M.S. Saini , Director, Guru Nanak Dev Engineering College (GNDEC), Ludhiana, for providing this opportunity to carry out the major project work at\_\_\_\_\_.

The constant guidance and encouragement received from Dr. Parminder Singh H.O.D. CSE Department, GNDEC Ludhiana has been of great help in carrying out the project work and is acknowledged with reverential thanks.

I/WE would like to express a deep sense of gratitude and thanks profusely to Project Guide Name, without his/her wise counsel and able guidance, it would have been impossible to complete the project in this manner.

I/WE express gratitude to other faculty members of computer science and engineering department of GNDEC for their intellectual support throughout the course of this work.

Finally, I/WE are indebted to all whosoever have contributed in this report work.

**Priyanka Walia**

**Deepak Kumar**

## LIST OF FIGURES (Sample)

<b>Fig. No.</b>	<b>Figure Description</b>	<b>Page No.</b>
1.1	Application Level Firewall	8
1.2	Statefull Firewall	9
1.3	Packet Filter Firewall	10
1.4	An BDD Representation	11
3.1	Methodology of the System	24
3.2	BDD Representation of Rule set	26
3.3	ROBDD Representation of Rule set	27
3.4	Flowchart of Proposed System	31
3.5	Connecting with the Network	32
3.6	Capturing the Packets form Network	32



## LIST OF TABLES(Sample)

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<b>Table No.</b>	<b>Table Description</b>	<b>Page No.</b>
	Boolean Variables Required for Rule set	25
	Representation of Number of Variables Required	26
	Two-dimensional Vector Dot file	47
	Cost of Look up	48

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# TABLE OF CONTENTS(SAMPLE)

<b>Contents</b>	<b>Page No.</b>
<i>Abstract</i>	<i>i</i>
<i>Acknowledgement</i>	<i>ii</i>
<i>List of Figures</i>	<i>iii</i>
<i>List of Tables</i>	<i>iv</i>
<i>Table of Contents</i>	<i>v</i>
<b>Chapter 1: Introduction</b> .....	<b>1</b>
<b>Chapter 2: Requirement Analysis and System Specification</b> .....	
<b>Chapter 3: System Design</b> .....	
<b>Chapter 4: Implementation, Testing and Maintenance</b> .....	
<b>Chapter 5: Results and Discussions</b> .....	
<b>Chapter 6: Conclusion and Future Scope</b> .....	
<b>References</b>	
<b>Appendix A: Development Environment</b>	

Note: The report of respective project should be as per prescribed format and in the same order though if some of the points are not applicable in regard with the concerned project, they might be omitted.