

Guru Nanak Dev Engineering College Ludhiana
(Department of Information Technology)

Format for Major Project Report

Title page

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Chapter 1 Introduction

Page

- 1.1 Introduction to Project
- 1.2 Project Category (Internet based, Application or System Development, Research based, Industry Automation, Network or System Administration)
- 1.3 Objectives
- 1.4 Problem Formulation
- 1.5 Identification/Reorganization of Need
- 1.6 Existing System
- 1.7 Proposed System
- 1.8 Unique Features of the System

Chapter 2 Requirement Analysis and System Specification

- 2.1 Feasibility Study (Technical, Economical, Operational)
- 2.2 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)
- 2.3 Validation
- 2.4 Expected hurdles
- 2.5 SDLC Model to be used

Chapter 3 System Design

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

- 3.5.2 Normalization
- 3.5.3 Database Manipulation
- 3.5.4 Database Connection Controls and Strings
- 3.6 Methodology

Chapter 4 Implementation, Testing, and Maintenance

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

Chapter 5 Results and Discussions

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

Chapter 6 Conclusion and Future Scope

References/Bibliography

(IEEE Format)

Appendix A: Development Environment

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.

SPECIFICATIONS FOR MAJOR 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 blue 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 numbers.
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 Figure 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. There should be 03 copies of Final Report.

**PLANT RECOMMENDATION
FOR BIO-FUEL** (24pt.)

MAJOR PROJECT REPORT (14pt.)

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

BACHELOR OF TECHNOLOGY
(Information Technology) (14pt.)

GNDEC Logo

Submitted By:

Kashish Gupta (1507937) (14pt)
Muskan (1507945) (14pt)

Submitted To.:

Prof. Pankaj Bhambri
Assistant Professor
Major Project Coordinator

**Department of Information Technology,
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. Sehijpal Singh, Principal, 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. Kiran Jyoti, H.O.D., IT 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 Information Technology 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.

Kashish Gupta

Muskan

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