**Department of Computer Science & Engineering**

**Computer Networks**

**Mini Project**

**2021-2022**

**As a part of CN Lab CSE3113, all the students have to take up a mini project and submit the project report in the format specified by 30/11/21. Mini-projects can be taken up in a group of a maximum comprising of 2 students. The brief project abstracts have been provided here for reference, and students have to finalize the title of their projects by the fifth lab of CN. Students are not restricted to choosing the projects out of the only mentioned abstracts.**

**Project abstracts**

**All the projects mentioned below are based on the network traffic analysis and hence require a raw traffic file in a proper format, depending on the tools used for the required analysis. Therefore, students have to arrange the raw file and then use a script for investigation or the existing analysis software.**

**1. Requirement is to develop a tool to visualize the timing of network connections, including the statistics like the Average connection duration, frequency of connections and inter-connect time.**

**2. Tool to extract the names of vendors that have made ethernet/Bluetooth devices to check the MAC fakeness.**

**3. Visualization tool shows the flow graph between two given Ip’s(Src-Dst) concerning a particular Application Protocol.**

**4. Network Statistics such as Throughput, Transmission Speed, Average RTT.**

**5. Topology recreation based on the traffic file within a single LAN.**

**6. Separation of Traffic based on Link-layer Interfaces and associated statistics.**

**7. Separation of Traffic based on Application Layer Protocols and associated statistics.**

**8. Separation of traffic based on control communication and data communication for an entire traffic file.**

**9. Capture the flow of any application layer protocol using TCP and present its window size updation on both sides(S-D) concerning time.**

**10. Capture the same traffic and present the MSS with respect to time.**

**11. Capture the packets wherein at least TCP or IP options are used and mention the options used.**

**12. Capture the TLS handshaking and figure out the types of cipher suits in use in all the sessions.**

**13. Design a tool to identify the types of devices used in communication( Such as Mobile/Desktop).**

**14. Capture the communication involving Cookies and point the server ips using those packets.**

**15. Design a Tool to capture how many received packets were fragmented and needed to be assembled at the network layer, what were their ids, flag and offsets.**

**16. Design a Tool for capturing the traffic based on the TCP header flags. (Urgent, Push, Syn, ACK, FIN)**

**17. Design a tool to capture the retransmitted packets, there figure out how many packets were sent and received and out of sent, how many were retransmitted.**

**18. Profiling of Ip’s based on their traffic generation rate and profiling them based on the usage rate of application layer protocols.**

**19. Design a tool to monitor the count of segments in which piggybacking is used and how many segment transmissions it is not used.**

**20. Design a tool which, take ip along with mask as input and, then, give the validity of the ip, along with first address, last addresss and the number of address in the block. Keeping the size of this block as constant, it should give at least other three blocks available of the same size with their network address.**

**TITLE OF MINI PROJECT**

**REPORT**

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**A MINI PROJECT**

**REPORT**

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***Submitted by***

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**NAME OF THE CANDIDATE(S)**

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***In partial fulfillment for the award of the degree of***

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**NAME OF THE DEGREE**

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**IN**

**BRANCH OF STUDY**

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**Department of Computer Science & Engineering**

**MONTH& YEAR**

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**1. SIZE OF PROJECT REPORT:**

**The size of project report should not exceed 60 pages of typed matter reckoned from the first page of chapter 1 to the last page.**

**2. ARRANGEMENT OFCONTENTS:**

**The sequence in which the project report material should be arranged and bound should be as follows:**

1. **Cover Page &Title Page**
2. **Bonafide Certificate**
3. **Abstract**
4. **Acknowledgement**
5. **Table of Contents**
6. **List of Tables**
7. **List of Figures**
8. **List of Symbols, Abbreviations and Nomenclature**
9. **Chapters**
10. **Appendices**
11. **References**

**The table and figures shall be introduced in the appropriate places.**

**Department of Computer Science & Engineering**

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**BONAFIDE CERTIFICATE**

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**Certified that this project report “……….TITLE OF THE**

**PROJECT……………..” is the bonafide work of “…………..NAME OF THE**

**CANDIDATE(S).…………” who carried out the mini project work under my**

**supervision.**

**<<Signature of the HOD with date>><<Signature of the Supervisor with date>>**

**<<Name of the HOD>> <<Name of the Supervisor>>**

**Professor and Head <<Academic Designation of Supervisor>>**

**Submitted to the Viva voce Examination held on \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**EXAMINER 1 EXAMINER 2**