

# PROGRAMMING FUNDAMENTAL (CS110)

# FINAL PROJECT REPORT

1. **GROUP MEMBERS:**
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* **Task division among team members:**
* Abdullah Sohail (Header. h+ Flowchart)
* M. Hasaan Malik (Source.cpp)
* Sikander Naseem (report)

1. **PROBLEM FACED DURING PROGRAM EXECUTION:**

* The first problem that was faced while writing the code was reading the rule file, we didn’t write the data in the rule file in a right way, extra lines were there in the file. Due to which it couldn’t read the file properly.
* Secondly after reading the data from rule file and packet file, The next
* step was to create a function to remove the substrings from the packet data and store it in the packet struct variable. This was a difficult and main step because we needed IP/Protocol to compare with the rule IP/protocol and make decision based on the result.
* Another Problem that we faced was the applying of rule on the packets and make decision, when we made function of apply-rule it was not making a proper decision, The loops were made in a wrong way, And the comparison was not right.
* After solving the apply-rule function problem, only 2 decisions were made, but we needed 3 decisions. But after some attempt to solve this problem, it was fixed and store the output in a result file.

1. **FLOWCHART**
2. **LIMITATIONS OF PROJECT:**

* The only limitation in this project is that, The range of Ip-address.
* If there are range in Ips like 192.168.1-10etc the program will not make decision.
* But due to shortage of time we couldn’t this function but here is the solution:

**SOLUTION FOR THIS PROBLEM**

* By comparing each Ips by their octets, this limitation can be overcome.
* Firstly, we have to make a function that separates the Ip by –
* Then, when only octets are left, then compare the Rule Ip octets with the packet Ip octets then our target can be achieved.