**INTRODUCTION TO NETWORK SECURITY AND ETHICAL HACKING**

**WEEKLY PROJECT**

**WEEK: 01**

**TRANSMISSION CONTROL PROTOCOL/ INTERNET PROTOCOL (TCP/IP) MODEL**

This model consists of 5 layers:-

1. Application Layer:

This layer is the top most layer. It allows the user to interact with the application. It takes commands from a web application and converts it into messages.

1. Transport layer:

Messages from the application layer are passed down to this layer. After receiving the messages, this layer adds a header to them. Together, the messages along with the header are called- Segments.

1. Network layer:

Segments from the transport layer are passed down to this layer. This layer adds an additional header which specifies the address of the destination. The segment along with the header is called a packet.

1. Data Link Layer:

In order to be transmitted as a signal, the packet receives a header and a trailer in this layer. It is together called a frame.

1. Physical Layer:

This layer converts the frame into a signal and finally transmits it across the network.

**TRANSMISSION OF PACKET**

When the signal is transmitted, various routers open the encapsulation until the network layer where the address of the destination is specified inside the header. In case the address in not correct, the data is re-encapsulated and sends it through the network. This process continues till the data reaches its specified destination. Once it reaches its destination, acknowledgments are made, connections are established and data routes through.