Our project is on small office network and we have implemented our project in packet tracer. Here we have created three different sectors: administration, user panel and employ department.

For implementing our project we have use 4 routers, 14 switches, almost 61 pcs and 6 different C class network address and on administration session there are one DNS server and one web server containing the details of employees.

We have used both static and DHCP for configuring the end devices.

We have used static in the VLAN side and DHCP in administration as well as users panel.

Also static the DNS and web server so that they don't change their IP automatically.

We have used RIP routing protocol version 2 in our project.

Because It's a standardized protocol and Provides fast convergence.

And in the right session we have applied VLAN.

We have created three separate departments. IT, HR and sale.

IT and HR are connected in same switch and situated in same floor.

On other hand sale and IT are connected in same switch and situated in same floor.

Only 1st floor's IT department and 2nd floor's IT department can communicate with each other.

But the other department cannot communicate for security purpose.

We haven't use NAT, because Network Address Translation that's mean NAT **consumes the processor and memory** because NAT need to translate IPv4 addresses for all incoming and outgoing IPv4 datagram and to keep the translation details in memory. It slows

down the network performance; therefore it creates a problem in real-time protocols.

Let’s send some data using ping commands different networks.