First of all, can you tell me or what do you think about development process

of application or software.'

**Point 1**. Discuss the case study.

**Scenario 1**. You are working for domestic company and

all team members are working at same location.

**Que**. What challenges you will face?

**Ans.**

In such environment we won't face many challenges because all team members

can collaborate and discuss and solve it.

1. Only sometime, problem system configuration and compatibility may affect work.

2. Let's assume, one team member is working on his system and he developed some code

but later, his on the system crashed then it will def. Affect work.

3. If some changes did some modification in existing file which create bug in system

or let affect process of development then may be in some cases we won't be able to

search for the person who did those modification.

**Point 2.** Now, let's consider the scenario where you are working on in MNC and your team is distributed around the world,In such scenarios what challanges your team will face?

**Ans:**

1st challange -->Collaboration

2st challenge --> Storing version (It means project is not completed in single version)

3rd Challange --> restoring previous version

4th challange --> figure out, what happened exactly? because we can't figre out where

changes made.

5th Challange --> Disaster - system - drives of developer will get crash and there is no back up

So, in order to overcome these problems, VCS that is version control system comes in picture.

**Que.** What is version control?

**Ans:** It refers to category of software tool, that make it possible for software team to look

after the changes made to source code.

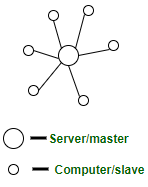
In more technical way, we can say that A version control system records all the changes made

to a file or set of files, so a specific version will be called later if needed.

This system makes sure that all team members are working on latest version of software.

**1. CENTRALIZED SYSTEMS:**

Centralized systems are systems that use client/server architecture where one or more client nodes are directly connected to a central server. This is the most commonly used type of system in many organizations where a client sends a request to a company server and receives the response.



**Architecture of Centralized System –**

Client-Server architecture. The central node that serves the other nodes in the system is the server node and all the other nodes are the client nodes.

**Limitations of Centralized System –**

Can’t scale up vertically after a certain limit – After a limit, even if you increase the hardware and software capabilities of the server node, the performance will not increase

**Advantages of Centralized System** –

Easy to physically secure. It is easy to secure and service the server and client nodes by virtue of their location

Smooth and elegant personal experience – A client has a dedicated system which he uses(for example, a personal computer) and the company has a similar system which can be modified to suit custom needs

Dedicated resources (memory, CPU cores, etc)

More cost-efficient for small systems up to a certain limit – As the central systems take fewer funds to set up, they have an edge when small systems have to be built

Quick updates are possible – Only one machine to update.

Easy detachment of a node from the system. Just remove the connection of the client node from the server and voila! Node detached.

**Disadvantages of Centralized System –**

Highly dependent on the network connectivity – The system can fail if the nodes lose connectivity as there is only one central node.

No graceful degradation of the system – abrupt failure of the entire system

Less possibility of data backup. If the server node fails and there is no backup, you lose the data straight away

Difficult server maintenance – There is only one server node and due to availability reasons, it is inefficient and unprofessional to take the server down for maintenance. So, updates have to be done on-the-fly(hot updates) which is difficult and the system could break.

**Applications of Centralized System –**

Application development – Very easy to set up a central server and send client requests. Modern technology these days do come with default test servers which can be launched with a couple of commands. For example, Express server, Django server.

Data analysis – Easy to do data analysis when all the data is in one place and available for analysis

Personal computing

**Use Cases –**

Centralized databases – all the data in one server for use.

Single-player games like Need For Speed, GTA Vice City – an entire game in one system(commonly, a Personal Computer)

Application development by deploying test servers leading to easy debugging, easy deployment, easy simulation

Personal Computers

