Q1->10 popular commands - daily use

Ans->**1) pwd**=>use to print current workking directory and shows where we are in file system.

**2) rm -rf** =>’rm’removes file named after the command where as r stands sor recursive delete of directory and its content and f stands for forceful removal of file.

**3) mount**=>this command is use to mount sd card usb with existing file systetm .

**4) df**=> this command display essential information about our existing file system ,use to analyze or monitor networked systems.

**5) ps**=>It tells us about all the programs running in the system

**6) kill**=> It is used to kill process that are stuck due to lack of available resouce

**7) shutdown**=>this command is use to shutdown the system.

**8) mv**=> Use to move single or multiple files from one location to another.

**9) history**=> This command prints out the history of terminal session.

**10) wget**=> It is use to download files from web right from the terminal

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Q2-> 10 popular network commands

Ans-> **1) ifconfig=**>It helps us in getting or setting interface configuration ,activating /deactivating interfaces driver provided in system.

**2) DIG=**>Stands for (Domain Information groper) and is use to perform dns lookup on name server.

**3)** **iptables**=>It help us controll the incoming and outgoing traffic on particular host machine

**4) traceroute**=>This command helps to determine the route network packets take to go form one machine to another.

**5) telnet**=>It as protocol that allow us to connect to remote computer over TCP/IP protocol port 23 and let us communicate or manage that remote device.

**6) netstat**=>Help us to review each of our network connection and open sockets.

**7) scp**=>allows us to securely copy files from another machine on network

**8) w**=>Print the summary of each users current activity on the system and their processes.

**9) namp**=>It checks for opened ports on the server.

**10) ifup/ifdown=>**These command are use to enable or disable the network interface.

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Q3->10 popular OS commands

Ans->**1) sudo**=> Is use before every command that need root permission to execute.

**2) ls**=>list command print out all the files and folder of the directory we are currently working in.

**3) cd=>**Is use to change the current working directory.

**4) mkdir**=>is use to create new directory /subdirectory.

**5) cp**=>command is use to copy files from source to destination.

**6) rm**=> is a command use to remove files or directory .

**7) apt-get**=>is a command line tool use to install ,upgrade and remove software from system.

**8) grep**=>This command is use to find the file based on the current keywords .

**9) cat**=>command shows us the text inside the file.

**10) poweroff**=>this command is use to poweroff the system directly from the terminal .It needs sudo before it as it need root permission to perform.

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Q4->10 popular Git commands

Ans->**1) git config**=>use to set username and email in the main configuration file.

**2) git init**=>initialize git repository for new or existing file.

**3) git clone**=>to copy a git repository from remote source .

**4) git status**=>to check status of file which have been changed since last commit.

**5) git add**=>adds all the changes made in the staging area.

**6) git commit**=>commits all the changes and set it as new commit object for our remote.

**7) git push/git pull**=> push our changes we committed to remote or pull latest changes from remote.

**8) git branch**=>list out all the branches

**9) git checkout**=>switch to different branch or create and switch to new branch if -b is added.

**10) git remote**=>to check what remote source we have or add a new one.

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Q5->Database

Ans->A Database is an organised collection of data typically stiored in electronic format.They are often developed using various modeling techniques.

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Q6->SQL Database

Ans->It is a relational database on which operations like insert,update ,delete and maintenance are performed using structured query language(SQL).

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Q7->NoSQL Database

Ans->Also known as “Not Only SQL” database ,no predefined schema is required and data can be stored in various model/format inluding key-value,graphical,tabular etc.and is used when availability and scalability outweigh the requirement of maintaning of ACID properties.

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Q8->10 popular databases

Ans->**ORACLE,MySQL,Microsoft SQLServer,PostgreSQL,MongoDB,DB2,Microsoft Accesss,Cassandra,Redis,Elasticsearch**

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Q9->ACID

Ans->**Atomicity->**All changes to data are performed as if they are single operation .That is either all changes are performed or none of them are.

**Consistency**->Data is in a consistent state when a transaction starts and when it ends.

For example, in an application that transfers funds from one account to another, the consistency property ensures that the total value of funds in both the accounts is the same at the start and end of each transaction.

**Isolation**->The intermediate state of a transaction is invisible to other transactions. As a result, transactions that run concurrently appear to be serialized.

**Durability**->After a transaction successfully completes, changes to data persist and are not undone, even in the event of a system failure.

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Q10->Aggregations

Ans->In aggregation, the relation between two entities is treated as a single entity. In aggregation, relationship with its corresponding entities is aggregated into a higher level entity.

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Q11->Joins

Ans->A SQL join statement is use to combine data or rows from two or more tables based on common field between them.Different types of joins are->**INNER,LEFT,RIGHT,FULL JOIN**

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Q12->CAP Theorem

Ans->It is a concept which state that a distributed database system can only have any 2 of the 3 :Consistency,Availability,Partition Tolerance.

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Q13->Normalization

Ans->Normalization is a database design technique which organizes tables in a manner that reduces redundancy and dependency of data.

It divides larger tables to smaller tables and links them using relationships.

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Q14->Database Sharding

Ans->**Sharding is** a type of **database** partitioning that separates very large **databases** the into smaller, faster, more easily managed parts called data shards. The word **shard means** a small part of a whole.

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Q15->7 network layers

Ans->The 7 layers of OSI model are  
1.Physical layer

2.Data link layer

3.Network layer

4.Transport layer

5.Session layer

6.Presentation layer

7.Application layer

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Q16->Request Response Protocol

Ans->Request -response is one of the basic methods computers use to communicate with each other, in which the first computer sends a request for some data and the second responds to the request. Usually, there is a series of such interchanges until the complete message is sent; browsing a web page is an example of request–response communication.

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Q17->Web API

Ans->A **web API** is a programmatic interface consisting of one or more publicly exposed endpoints to a defined request–response message system, typically expressed in JSON or

XML

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Q18->REST

Ans->REpresentaional state transfer is the architectural style by which two systems communicate with eatch other.

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Q19->HTTP Status Codes to Handle

Ans->

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Q20->HTML

Ans->It is a markup language use to describe/present information received/transferred on web page.

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Q21->Box Model

Ans->It is a box that wraps around every HTML element .It basically consists of 4 things Margins,border,padding and actual content.

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Q22->Margin

Ans->It is the area outside border in the box model of html,It is transparent.

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Q23->Padding

Ans->It is the area inside border and covers the content inside box model .It is also transparent.

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Q24->CSS Selectors

Ans->IT is part of the css rule set that helps us to select the content we want to style.

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Q25->CSS Specificity

Ans->It is the priority rule set by which browser decide which css property values are the most relevant to an element.

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Q26->Flexbox

Ans->IT is an one dimensional layout method for laying out items in either rows or columns.Items flex to fill additional space or shrink to fit into smaller spaces.

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Q27->Grid

Ans->It is a two dimensional layout method for laying out items in both rows and columns .

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Q28->Git

Ans->IT is a distributed version control system for tracking changes in source code during software development.It also maintain /cordinate work among programmers.

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Q29->HTTP

Ans->It is a client-server based application layer protocol which is used not only to fetch html document but also videos and image and post content to server.

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Q30->TCP

Ans-> Transmission control protocol is a connection oriented protocol which send reliable ,ordered and error checked byte of data between application running on hosts over an IP network.

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Q31->UDP

Ans->User Datagram Protocol uses a connectionless model to communicate.It provide data checksum for integrity.It is generally used where error checking is not necessary or performed at application level.Time sensitive applications often used UDP.

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Q32->Web server

Ans-> A web-server is a server software or a dedicated server running that software .It process incoming network request over HTTP and several other related protocol.The main function of web server is to store, process and deliver web pages to client.

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Q33->Static server

Ans->A static server is called static because the server sends it hosted files as is to the client.A dynamic web server consists of static server plus software.

Q34->Application server

Ans->It is a software framework that provide both facilities to create web applications and a server environment to serve them.

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Q35->DNS server

Ans->These servers are responsible for translating domain name into IP address and send it back to client which then uses it to retrieve information by requesting from original server.

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Q36->Database Server

Ans->A Database server is the server dedicated for database storage .It holds DBMS and whenever client request a data via query it searches the database and return the result.

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Q37->Standalone Application

Ans->Applications that do not need support from other application to run ,Example->vlc media player,notepad,adobe photoshop

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Q38->MVC

Ans->The model view controller framework is an architecture that seperates an application into three main logical components

Model->It includes all the data and its related logic

View->present data to user or handles user interaction

Controller->An interface between model and view components

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Q39->Operating System

Ans->It is the software that manages computer hardware,software resources and provide common services for computer programs .It act as an interface betweeen end user and computer hardware.

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Q40->Kernel

Ans->It is a computer program that is the core of operating system .It is loaded first in the memory after bootloader and handles other software input/output request as well.

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Q41->Process

Ans->It is the program which is loaded in to the memeory and is under execution.

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Q42->Thread

Ans->IT is a (path /sequential flow of instruction )within a process,also called light weight process .Multi thread in a process are used to achieve parallelism.

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Q43->SOLID

Ans-> In Object Oriented computer programming SOLID is an acronym for five design princliples

which help us to write a code which is more readable ,flexible,maintenable.SOLID stands for->

**S->Single Responsibilty principle**

**O->Open-close principle**

**L->Liskov substitution principle**

**I->Interface segregation principle**

**D->Dependency Inversion Principle**

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Q44->Apache Web Server

Ans->It is an open source and free web server software that powers around 50% of websites around the world.It is one of the most oldest and most reliable web servers,with the first version released in 1995.

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Q45->Nginx Web Server

Ans->It is open source software for web serving,reverse proxying,cahcing,load balancing,media streaming.It started out as web server designed for maximun performance and stability.

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Q46->Messaging Queue

Ans->It is a form of asynchronous service to service communincation.In this messages are store in queue until they are processed and deleted .Message queue are used to decouple heavyweight processing.

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Q47->Enterprise Message Bus

Ans->An EMB is middleware tool used to distribute work /message among connected components of an application. EMBs are designed to provide a uniform means of moving work, offering applications the ability to connect to the bus and subscribe to messages based on simple structural and business policy rules.

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Q48->RabbitMQ

Ans->IT is an open-source multi-protocol supported messaged broker written in Erlang language.

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Q49->Kafka

Ans->Apache Kafka is an open-source stream-processing software platform developed by LinkedIn and donated to the Apache Software Foundation, written in Scala and Java. The project aims to provide a unified, high-throughput, low-latency platform for handling real-time data feeds

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Q50->Zookeeper

Ans->Apache ZooKeeper is a software project of the Apache Software Foundation. It is essentially a service for distributed systems offering a hierarchical key-value store, which is used to provide a distributed configuration service, synchronization service, and naming registry for large distributed systems

Q51->Service Oriented Architecture

Ans->Service-oriented architecture is a style of software design where services are provided to the other components by application components, through a communication protocol over a network

Q52->Microservices Architecture

Ans->It’s a structural style architecture that arranges an application as a collection of loosely coupled services. In a microservices architecture, services are fine-grained and the protocols are lightweight.

Q53->Redis

Ans->Redis is an in-memory data structure project implementing a distributed, in-memory key-value database with optional durability.Redis supports different kinds of abstract data structures, such as strings, lists, maps, sets, sorted sets, HyperLogLogs, bitmaps, streams, and spatial indexes

Q54->Solr

Ans->Written in Java, from the Apache Lucene project. It uses the Lucene Java **search** library at its core for full-text indexing and **search**, and has REST-like HTTP/XML and JSON APIs that make it usable from most popular programming languages.

Q55->ElasticSearch

Ans->Elastic search is a search engine. It provides a distributed full search engine with a HTTP web interface.

Q56->Celery

Ans->It is written in python used for asynchronous task queue or job queue which is based on distributed message passing. It also supports scheduling

Q57->Nodejs

Ans->It’s a javascript platform that runs outside of the web browser and used for creating a backend connectivity to the server.

Q58->Mongodb

Ans->It’s a nosql type of database it uses a json schema type of structure. In this architecture is made up of collections and documents.

Q59->Progressive web apps

Ans->It’s a web app that uses modern web capabilities to deliver an app like experience to the user.

Q60->Session based authentication

Ans->Authentication system is one which allows a user to access a resource only after supplied credentials are compared with that stored in the database and found to be the same. Session-based authentication makes use of cookie stored in the user's browser in order to verify their identity after Login.

Q61->Token based authentication

Ans->Token-based authentication makes use of JSON Web Tokens(JWT) which is sent along with every request to verify the user's identity and this makes it stateless.

Q62->Authorization

Ans->It’s a function of providing access to a particular part of the system that is the user is authorized for some ‘x’ task.

Q63->Docker

Ans->Docker is a set of platform as a service products that use OS-level virtualization to deliver software in packages called containers. Containers are isolated from one another and bundle their own software, libraries and configuration files; they can communicate with each other through well-defined channels.

Q64->Iaas

Ans->It stands for infrastructure as a service. These are online service that provide high level APIs used to dereference low-level details of underlying data.

Q65->AWS

Ans->It stands for amazon web service. It provides an on demand cloud service and other cloud computing platforms like elastic search and apis to individuals.

Q66->Heroku

Ans->Heroku is a cloud platform as a service supporting several programming languages. One of the first cloud platforms, Heroku has been in development since June 2007, when it supported only the Ruby programming language, but now supports Java, Node.js, Scala, Clojure, Python, PHP, and Go.

Q67->Hoisting

Ans->Hoisting is taking all the declarations of variable and function at the top of the code

Q68->Pass by reference

Ans->It means the reference of the variable is passed to another variable instead of the value so any changes made to the second var will make change to the first one also

Q69->Pass by value

Ans->It means a copy of the value of the variable is being passed to the other variable and any changes made to that new variable will only result to change in that new variable.

Q70->Closures

Ans->A closure is the combination of a function bundled together (enclosed) with references to its surrounding state (the lexical environment). In other words, a closure gives you access to an outer function's scope from an inner function.

Q71->Prototypal inheritance

Ans->Prototypal Inheritance is an object that can point to another object and inherits all its properties. The main purpose is to allow multiple instances of an object to share common properties, hence, the Singleton Pattern.

Q72->Mutable methods in JS

Ans->In javascript everything other than primitive data type is mutable that is arrays and objects. Mutable methods are those which can be changed.

Q73->Immutable methods in js

Ans->In javascript all the primitive data types like number, string, boolean etc are immutable. Immutable methods are those which can’t be changed.

Q74->React

Ans->It’s a javascript library used for building user interface. It is maintained by facebook. React can be used as a base in the development of single-page or mobile applications

Q75->Why React

Ans->React allows developers to create large web applications which can change data, without reloading the page. The main purpose of React is to be fast, scalable, and simple.

Q76->Redux

Ans->Redux is a javascript library it is most commonly used with react. Redux makes it easier to manage the state of application

Q77->State

Ans->A system is described as stateful if it is designed to remember preceding events or user interactions; the remembered information is called the state of the system.