Define
Design
integrate
Implement
evaluate

antivirus
vpn
Password updating

Step	Current line	max	newmax	comment
1	3	3	3	initialize with
2	1	3	3	
3	6	9	9	compare 6 with 9, since 9 is bigger it stays max value.

Use for rough work

Q. No. 2 Part (i)

Binary system:

Binary system is a number system with base of 2. It has 2 numerical values being 0 & 1. These are also known as bits.

usage in computers:

Computers can only understand machine-level languages represented as binary system. It cannot understand human language. There are many character encoding schemes like ASCII & unicode to help computers understand. Computers only understand in 0s & 1s this is why it is used in computers.

Q. No. 2 Part (ii)

Communication:

1: It provides interface to facilitate interaction between computer hardware & software. & allows software to run. e.g: Operating system (OS) such as windows.

2: It provides resources for hardware to work such as for input & output devices, It provides drivers such as graphics drivers & wifi drivers for graphics card & wifi adapters respectively that acts as bridge between the two.

Q. No. 2 Part (iii)

Searching Algorithm:

Searching algorithm is a type of algorithm that allows us to find a specific element or data from a given list by going through & searching for it. An example is:

=) Linear search:

Goes through the list step by step & checks each element to find the required element. This a more slower algorithm.

Q. No. 2 Part (iv)

Consider different audiences:

=> Considering different audiences is important because some people may have cultures or may not meet necessary age requirement for the information. This may offend them.

=) Information may be against the teachings & religion of people & they might not have enough literacy to percieve the intended purpose which may cause a bad effect on reputation of the news spreader.

Q. No. 2 Part (v)

Internet of things:

Internet of things refers to the connectivity of devices over the internet. It facilitates man to machine & machine to machine interaction. It allows automation of devices. It collects information, sends it to cloud, analyzes & performs actions. some examples of IoT are:

Sensors:

Collects information from surroundings & sends it to cloud.

Cloud: information is stored & analyzed in cloud storage by providers like onedrive, AWS, google cloud, etc.

Q. No. 2 Part (vi)

Datascience :

Data Science is an interdisciplinary field of multiple disciplines like mathematics, statistics, logics, etc. the objective of data science is to extract & obtain meaningful information & insight from data through various techniques like data collection, analysis, cleaning, abstracting, etc. We collect data, analyze it right after cleaning it & then we gain meaning information.

Q. No. 2 Part (vii)

Code Repository :

Code repository is a place on the internet where people can store, upload & export (download & send) code in the form of executable files, text documents, applications, etc. It is a programmer friendly area to share code with each other. A major example is:

Github :

Github is open-source meaning anyone can access all files people upload use them for their work. It is used for sharing applications & code with people over the internet.

Q. No. 2 Part (viii)

Importance of Abstraction:

=> Abstraction filters out the useless components that the user does not have to work on, leaving behind valueable & important tasks. This improves effeciency & reduces time wasted.

=) After abstraction, only the useful information is left behind which allows the programmer to focus better and allows an understanding on what they are working on. This improves the quality of the resultant program.

Q. No. 2 Part (ix)

Negative Impact of cyberbullying:

=> **Social Isolation & reduced focus:**
The victim doesn't trust people anymore & interacts less with humans leading to isolation. They are also affected in studies as it becomes harder to focus due to the pain experienced mentally.

=) **Depression, Anxiety & mental Health:**
The victim becomes depressed & very anxious due to the bullying and even has suicidal thoughts thinking he is a failure. His anxiety stops him from excelling in life & produces fear of judgement.

Q. No. 2 Part (x)

Churn prediction:

Since keeping old customers is more important, churn predictions help understand when specific customers may stop using services. This allows buisnesses to stop losing customers by providing unhappy customers with good offers and deals which brings back their attention & reduces the chance of them being lost, which is profitable for the buisness as it keeps a steady use of products.

Q. No. 2 Part (xi)

Importance of information security:

=> Protection of private information:

Information security allows the protection of private information by protecting the computer from spyware, fraud, scams, viruses etc, that may steal valueable information.

=> Peaceful use of internet:

Information security allows a user to be aware of any suspicious activity online & allows them to use the internet for its positive advantages while greatly reducing risks that come with it as they know the precautions to protect it.

Q. No. 3 (Page 1)

Software Development:

=> Translator:

A translator is a tool that allows an individual to convert text from one language into another, This can be paired with speech recognition for a greater effect. Translator is significant due to its ability to facilitate conversations between people speaking different languages.

Example:

Google translators can be used to convert various languages into another.

=) IDE (Integrated development environment):

IDE is a combination of text editor, debugger & compiler: It contains all of those features in one app. This allows programmers to program codes much more easily because of the available features provided. It is important as it facilitates programming, helps debug & fix errors & compiles the code into machine language when ready.

Example:

Visual studio can be used as an IDE for various languages like javascript & python.

=) Code repository:

Code repository is a place on the internet that allows multiple users to share their code in the form of apps, exes, & files. It is significant as it allows people to work together, share their work & help others perform code.

Example: An example is github which is open-source repository

Q. No. 3 (Page 2)

=) **Debuggers:**

A debugger is a tool that allows one to examine the working of his code, inspect variables & their changes step by step & fix any errors. It is significant because it allows the program to function as intended & fix any errors.

Examples:

Chrome debugger can be used to inspect various elements & understand their working.

=) **Language editor:**

Language editor is a software made to help programming of a specific software & provides various features to help program such as auto-completions & syntax & logical error checking. It is significant as it allows faster programming with less time taken & minimalized errors including logical & syntax ones.

Example:

example includes eclipse which is specially made to help program in java language.

Q. No. 4 (Page 1)

Software methods to protect:

1. Firewall (software):

devices can be protected by installing firewall software which can be configured & filters out any harmful, or suspicious activity & defends the system against viroses & malware.

2. Installing antivirus & antimalware:

Installing antivirus & antimalware software from trusted brands allows extra protection on top of firewall as these softwares regularly scan the computer for any viruses & prevents any viruses or malware from being installed onto the device. An example is avast antivirus.

3: Virtual private network:

Using virtual private networks allows anonymity & hides the connection of your computer with internet which makes it way harder for cybercriminals to intercept it & gain unauthorized access. VPNs are used as such that they make it seem your device is present in some other location. An example can be "windscribe" VPN.

4: Strong passwords:

Using strong passwords for any online accounts & important sites with 2 step verification (2FA) gives the computer an extra layer of protection where it becomes insanely hard for cyber criminals to attack those accounts & gain information.

Q. No. 4 (Page 2)

Updating existing software:

Installing updates for existing softwares such as antiviruses & operating system helps protect device from cybercriminals because these updates usually include patches that fix security vulnerabilities of the system. This makes the device more secure.

Example:

example is windows operating system update that fixes security issues.

Q. No. 5 (Page 1)

Internet of things:

Internet of things refers to the connectivity of devices over the internet. IoT facilitates man to machine & machine to machine interaction through various interfaces. It involves collection of data (data collection) cloud storage, connectivity & data processing to perform actions that are required It has the following componants:

Sensors:

Sensors are devices that collect information from the surroundings & forward it to the cloud. There may be simple sensors or a combination of sensors for example our mobile phones. These devices act as input for the IoT devices & detect their surroundings like fire for fire sensor.

Connectivity:

Connectivity refers to the way IoT devices can interact with each other & the cloud. This can be done through wifi & other methods that may be available, with most common method being the "internet" itself. Connectivity allows synchronization of these devices. It also allows human interaction

Data-processing:

Data processings refers to the process of analyzation of the data recieved by IoT (internet of things) devices. This involves using various methods to extract essential informations from these devices & perform actions if required. It may include data cleaning, Abstraction, etc, To find out essential details of the recieved data.

Q. No. 5 (Page 2)

Working of IoT:

Internet of things works by recieving information from sensors, sending them to cloud through connectivity & performing actions. These devices may be connected through principle of connectivity to the human users & they can control them from their mobiles, voice, etc. The data is recieved in cloud & analyzed & action is performed if required for example, turning off of light when an individual leaves the room. Humans interact with these devices through user-interfaces.

Q. No. 6 (Page 1)

STUDENT STARTING TUTORIAL

If students wants to start online tutoring. This will be a suitable name for his tutoring service with buisness pitch also given:

Name:

XYZ online tutoring

Slogan:

Best online teaching sessions through XYZ

Problem:

- He is new & doesnt have a hook
- There are courses available for tutoring
- Suitable time for his students & more.

Solution:

- If he adds his education level & position at previous class. He will get a better hook.
- Starting free & then going paid is another tip. Here is where people will know his education level & would think wether they should stay or not:
- Having online poll would help him keep a suitable time for students

Target Customers:

- Below mattric
- Doing 9 & 10 courses
- People wanting to give improvements.
- Above class 8 or pre-ninth
- Wanting to choose O level or continue with A levels

Why choose him

People will choose him due to his position & free education style. If he provides tips for exam, people

Q. No. 6 (Page 2)

who want to reappear will also come & enjoy his educating techniques. He would garn more popularity.