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Assignment Title: systems Programming resubmission

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p1

i have been requested to create a management system for a phone shop, the system should be able to take the employees data in, and it should contain the data of the available phones in shop, this system should be capable of count the owners can do some delete, backup and searching for and all data tables are update able changeable plus editable which means the owner can add/ remove tables and edit them for future update.

The tables

employee(id, fname ,lname ,pos ,gender ,salary ,year ,month ,day ,char ,address)

phones (id, name, brand, color, price, count)

customer (id, name, gender, phone\_number, year, month, day, email)

business use case

HR need to add employees to the employees table.

Employees need to the phone/ products to the phone table.

customer need to be inserted by the employees in to the system.

User Requirements:

1. A system that is able to save/store information from employees in the company
2. A method to able to search for any detail in the tables .
3. A security system that is based on editing file according to their permissions
4. Backing up files so no data will be gone.
5. view data from tables to check on them.

System Requirements:

1. add to write names and save them to files.
2. search function to search through data using the shell script.
3. Memory allocation (malloc)to make sure that we wont run out of memory.
4. backup through using sockets to represent server usage.
5. Multiprocessing (threads) is going to be used for doing the back up process.

P2

OS:

The OS (OS) is computer code that controls all various programs on the computer when it is installed through the starting program. The application interface that initiates the service request will allow applications to access operations (API). Users can also communicate directly with the OS via a computer application such as a statement interface (CLI) or a graphical computer software (GUI).

Process:

A process is a type of computer virus that is created by one or more threads. Depending on the operating system (OS), the procedure may have numerous execution threads that finish directions at the same time.

What is an API?

Programming interface is an abbreviation for Application Programming Interface, an assortment of correspondence conventions and subroutines utilized by different projects to impart between them.

Software engineers can utilize an assortment of API instruments to simplify their projects and simpler. Also, APIs permit software engineers to productively foster programming programs.

Basically, APIs assist two projects or applications with speaking with one another by giving the apparatuses and usefulness they need. It gets a client demand, sends it to the specialist organization, and afterward sends the specialist co-op produced outcomes back to the ideal client.

Engineers use APIs broadly in programming and use API calls to carry out different capacities without composing complex code. You can make APIs for working frameworks, information base frameworks, equipment frameworks, JavaScript records, or comparative article arranged documents.

Additionally, the API is like a GUI (Graphical User Interface), with one significant distinction. Not at all like the GUI, the API assists programming engineers with getting to web devices, while the GUI assists clients with understanding the program. Assets constrained by the working framework are divided among processes.

Programming interface type:

WEBAPI has three essential arrangements.

Web API, otherwise called Web Service, is a broadly utilized API on the Web that can be effortlessly gotten to utilizing the HTTP convention. Web API is an open source interface that can be utilized by countless clients from cell phones and tablets. Or on the other hand PC.

Types of API:

This sort of API permits software engineers to utilize neighborhood middleware administrations. TAPI (Telephony Application Programming Interface) and .NET are normal instances of

neighborhood APIs. Program API:

Use RPC (Remote Procedural Calls) to see remote projects locally. Cleanser is a notable illustration of this kind of API. Different API types:

Cleanser (SIMPLE OBJECT ACCESS PROTOCOL): Defines XML-designed messages utilized by web applications to speak with one another. REST (Representational State Transfer): Use HTTP to

GET, POST, PUT, or DELETE information. This is essentially used to exploit the set information.

JSONRPC: A lightweight distant methodology call that involves JSON for information move and characterizes various information structure types. XMLRPC: Based on XML and utilizes HTTP for information move. This API is normally used to trade data between at least two organizations.

The above are different sorts and organizations of APIs that are broadly utilized in web organizations to divide data and further develop correspondence among them.

A remote entrance to the OS is considered an application, which is why we'd want to associate degree API. So, what exactly is an associate's degree API? The API decides whether a developer should request a service from an operating system (OS) or another application. However, information is frequently transferred across services by requesting and returning the required information, as described in the API (Calling function). So, anytime an application requests anything from the OS, it must travel through an API to receive the resources it requires, and this is frequently how a developer obtains what he requires.

Asset use between processes is parted by the OS. Computer processor, memory, recording framework, organization, console, mouse, screen and various peripherals are regularly isolated by capacities. Subsequently, you'll have the option to run numerous cycles on a comparable machine. At the point when each cycles demand a comparable help, the bundle decides World Health Organization gets once, how much, and when. Memory the executives is that the capacity of the bundle to oversee conventional memory and move processes among memory and plate once wrapped up. Memory the board will follow all memory areas whether or not they are utilized by the technique or not. Operating system gives an extraordinary a piece of the memory to any technique that needs it, and various cycles can't get to that a piece of the memory that is have as of now got been given. A similar case is with the recording framework, the OS minds the honors of the technique to peruse/compose into a document and stop any 2 cycles to record into a comparative record along. Without the OS it'll be a bunch that can't fill in because of cycles don't comprehend that there ar various cycles except if they grant along. The administration from the OS isn't finished owing to that we tend to regularly see an accident report that break that the apparatus crashed owing to not having sufficient memory anyway much of the time that doesn't occur because of OS is sweet at its particular employment inside the most cases.

Basically in this system the API is going to be used to communicate with the OS and be able to take control of the hardware as the system requires

Technique	Description
Memory management	It is a memory management technique that enable the computer to make for the low sophistical ram storage by using the hard disk and it called swap storage benefits : <ol style="list-style-type: none"> <li>1. the OS can run programs that are bigger than the ram limitation</li> <li>2. it better in security because it requires mapping to keep the connection between the data in ram and sata storage.</li> </ol>
threading	It is to run more than one program at the same time in the same computer which also uses all the computer devices at the same time and it better because it increases efficiency.
Wait function	In machine programming, an interrupt is a sign to the processor emitted via way of means of hardware or software program indicating an occasion that desires on the spot attention. An interrupt signals the processor to a high-precedence circumstance requiring the interruption of the modern code the processor is executing. The processor responds via way of means of postponing its modern activities, saving its state, and executing a characteristic referred to as an interrupt handler (or an interrupt carrier routine, ISR) to cope with the occasion. This interruption is temporary, and, after the interrupt handler finishes, the processor resumes regular activities. There are styles of interrupts: hardware interrupts and software program interrupts.

