1 - Apple Silicon chips are RISC chips, while Intel chips are CISC chips. The comparison is not Apple vs Intel, but RISC vs CISC. “RISC” is “reduced instruction set computing,” and “CISC” is “complex instruction computing.”

2- Here are the important characteristics of processors:
https://www.ifixit.com/Wiki/Computer_Processor_Characteristics

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3- Tabulation vs Memoization

There are two ways of implementing the dynamic programming, or we can say that there are two ways of storing the solution of sub-problem so that it can be reused.

- Tabulation
- Memoization

  is a technique that is used to implement the DP algorithms. It is also known as a bottom-up approach. It starts from solving the lowest level sub-problem. The solution to the lowest level sub-problem will help to solve next level sub-problem, and so forth.

  Memoization is a technique that is used to implement the DP algorithms. Memoization is also known as a top-down approach. It starts from solving the highest-level sub-problems. Initially, it solves the highest-level sub problem and then solve the next sub-problem recursively and the next.

https://www.javatpoint.com/tabulation-vs-memoization

4- linear probing -> The simplest approach to resolve a collision is linear probing. In this technique, if a value is already stored at a location generated by h(k), it means collision occurred then we do a sequential search to find the empty location.

5- Dynamic Memory Allocation

- We can dynamically allocate storage space while the program is running, but we cannot create new variable names "on the fly"
- For this reason, dynamic allocation requires two steps:
    1. Creating the dynamic space.
    2. Storing its **address** in a **pointer** (so that the space can be accesed)
- To dynamically allocate memory in C++, we use the **new** operator.

6- All c++ frameworks for all tracks
https://github.com/fffaraz/awesome-cpp

7- An API (Application Programming Interface) is a communication channel between services and applications. It can be used to call single or multiple services depending upon the architecture of the application. It is a secure way to request and share information, services, and functionalities within both internal and external users.

Simply put, An API is a messenger that takes a request and tells the system what the user wants to do and then returns the response. It is a method of communication between a requester and a host that is mostly accessible through an IP address. It can communicate multiple information to the user, like, data that needs to be shared and the function that needs to be provided.

A web service comprises of these functions:

- Availability over intranet and internet networks
- Independence of programming languages and operating systems
- Self-describing via XML
- Identifiable via a simple location method
- Supports communication between apps with HTML, SOAP, WSDL, and XML.

Micro services is an architectural style that structures an application as a collection of services that are loosely coupled, highly maintainable &

testable, independently deployable, organized around business capabilities, and are owned by a small team of developers. It supports the frequent, agile, and reliable delivery of complex, large applications.

1-use a framework for interfacing like The Boost Python Library, it is framework for interfacing Python and C++,It allows you to quickly and seamlessly expose C++ classes functions and objects to Python, and vice-versa, using no special tools - just your C++ compiler.

2-For languages to interact they would need to have some kind of interface or API to connect. In the current web architecture, this typically consists of a microservices which communicate through REST APIs using HTTP.

9-

 a cron job is a command used for scheduling tasks to be executed sometime in the future.

 This is normally used to schedule a job that is executed periodically.

Working with Cron Jobs https://www.hostdime.com/kb/hd/command-line/working-with-cron-jobs

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A set can be implemented in various ways but the most common ways are:

- **Hash-Based Set:** the set is represented as a hash table where each element in the set is stored in a bucket based on its hash code.
- **Tree-based set:** In this implementation, the set is represented as a binary search tree where each node in the tree represents an element in the set.