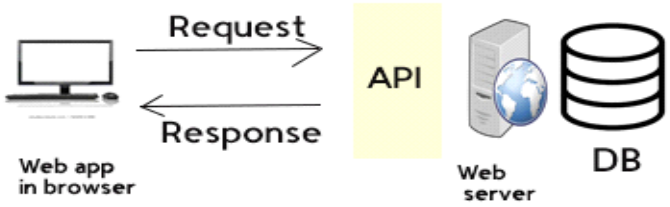
API

What is API?

API stands for Application Programming Interface, which is a software intermediary that allows two applications to talk to each other. (ie data transmission between one software product and another.)



API

When you use an application on your mobile phone, the application connects to the Internet and sends data to a server. The server then retrieves that data, interprets it, performs the necessary actions and sends it back to your phone. The application then interprets that data and presents you with the information you wanted in a readable way.

API consist of two components:

a. Technical specification describing the data exchange options between solutions with the specification done in the form of a request for processing and data delivery protocols

b. **Software interface written to the specification that represents it**

Example of API:

Imagine you're sitting at a table in a restaurant with a menu of choices to order from. The kitchen is the part of the "system" that will prepare your order. "The missing part is the critical link to communicate your order to the kitchen and deliver your food back to your table". That's where the API (here waiter) comes in. The waiter is the messenger – or API – that takes your request (order) and tells the the system (kitchen) what to do. Then the waiter delivers the response (food) back to you...

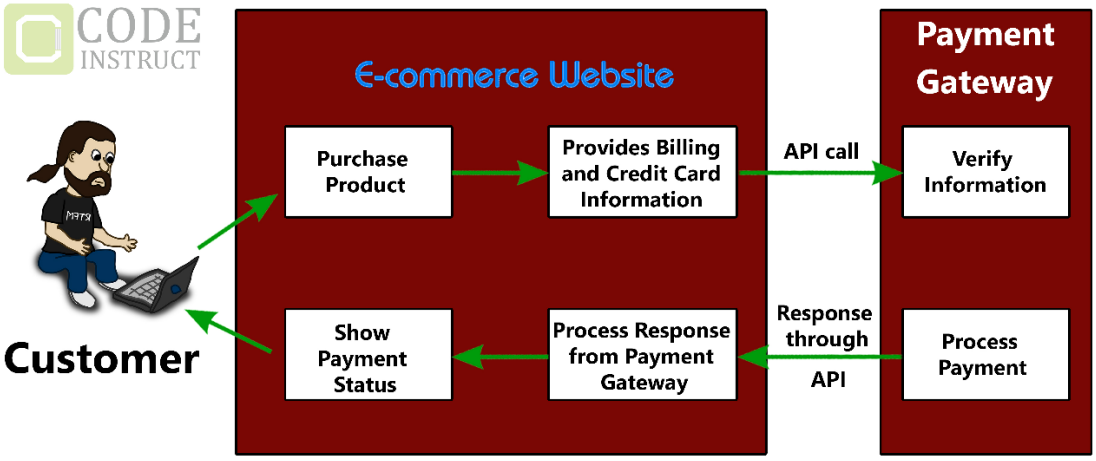
Another Real-life Example:

We are familiar with the process of searching flights online. we have a variety of options to choose from, including different cities, departure and return dates, timings and so on. Let us imagine that you're booking your flight on an airline website. You choose a departure city and date, a return city and date, cabin class, as well as other details. In order to book your flight, you interact with the airline's website to access their database and see if any seats are available on those dates and what the costs might be.

If suppose you are using any online travel service instead of airline website (a channel that has direct access to the information.) like kayak or Expedia which aggregates information from a number of airline websites.

The travel service, in this case, interacts with the airline's API. The API is the interface that can be asked by that online travel service to get information from the airline's database to book seats, baggage options, etc. The API then takes the airline's response to your request and delivers it right back to the online travel service, which then shows you the most updated, relevant information.

Image Explaining API:



Difference between API and web Services:

1. Web service: It's a collection of open source protocols and standards used for exchanging data between systems or applications whereas API is a software interface that allows two applications to interact with each other without any user involvement.
2. Web service is used for REST, SOAP and XML-RPC for communication while API is used for any style of communication.
3. Web service supports only HTTP protocol whereas API supports HTTP/HTTPS protocol.
4. Web service supports XML while API supports XML and JSON.
5. All Web services are APIs but all APIs are not web services.

Advantages of API Services:

- API supports traditional CRUD (Create Read Update Delete) actions as it works with HTTP verbs GET, PUT, POST, and DELETE.

- **API helps you to expose service data to the browser**
- **It is based on HTTP, which is easy to define, expose in REST-full way.**

Disadvantages of API:

- **Creating API is a very time-consuming process**
- **A fixed scale is necessary**
- **Imprecise boundary delineation**
- **Maintenance cost is very high**
- **It can crash when testing API**