Q1. What is an API? Give an example, where an API is used in real life.

In [1]:
```
# Ans- A software intermediary that allows two applications to talk to each other.
#      APIs are an accessible way to extract and share data within and across organizations.
#       APIs are used to deliver material by streaming services such as Spotify and Netflix.
```

Q2. Give advantages and disadvantages of using API.

In [2]:
```
# ADVANTAGES OF API
# APIs increase business agility. By abstracting away the underlying complexity of a service and presenting
#      it as a product, APIs give organizations secure access to data, services,
#      and operating systems that drive innovation for internal partners and third-party consumers.
#  DISADVANTAGES OF API
#      Security Concerns: API infrastructures can be vulnerable to security breaches,
#      such as SQL injection attacks and cross-site scripting (XSS) attacks,
#      making it crucial to implement security measures to protect against these threats.
```

Q3. What is a Web API? Differentiate between API and Web API.

In [3]:
```
# Ans--Web API= It is a framework that helps you to create and develop HTTP based RESTFUL services.
#  Diffrence between API and WEB API
# Web Services                                                                              Web API
#Web services are a type of API, which must be accessed through a network connection.        APIs are applicatio
#Web service is used for REST, SOAP and XML-RPC for communication.                            API is used for an
#All Web services are APIs.       APIs are not web services.                                  It has a light-weig
#It doesn't have lightweight design, needs a SOAP convention to send or receive data over the system.    It provides support
#It provides supports only for the HTTP protocol                                        .    It is an open sourc
#It is not open source, however, can be devoured by any customer that comprehends xml.        It is an open sourc
#Web service supports only XML.                                                              API supports XML an
#Web Services can be hosted on IIS.                                                          Web API can be host
```

Q4. Explain REST and SOAP Architecture. Mention shortcomings of SOAP.

In [1]:
```
#  REST architecture
# REST stands for REpresentational State Transfer and API stands for Application Program Interface.
# REST is a software architectural style that defines the set of rules to be used for creating web services.
# Web services which follow the REST architectural style are known as RESTful web services.
# It allows requesting systems to access and manipulate web resources by using a uniform and predefined set of rules.
# Interaction in REST based systems happen through Internet's Hypertext Transfer Protocol (HTTP).
#  SOAP architecture
# Simple Object Access Protocol (SOAP) is a message specification for exchanging information between systems and applications.
# When it comes to application programming interfaces (APIs), a SOAP API is developed in a more structured and formalized way
```

Q5. Differentiate between REST and SOAP.

In [2]:
```
# SOAP and REST are two different approaches to API design.
# The SOAP approach is highly structured and uses XML data format.
# REST is more flexible and allows applications to exchange data in multiple formats.
```

In [ ]: