API - Api stands for the application programme interface . it is used to interact between different application .

Example – *)linking github to vscode . we directly commit the code into github without going to github .
*)login or sign up with help of api directly linking with account

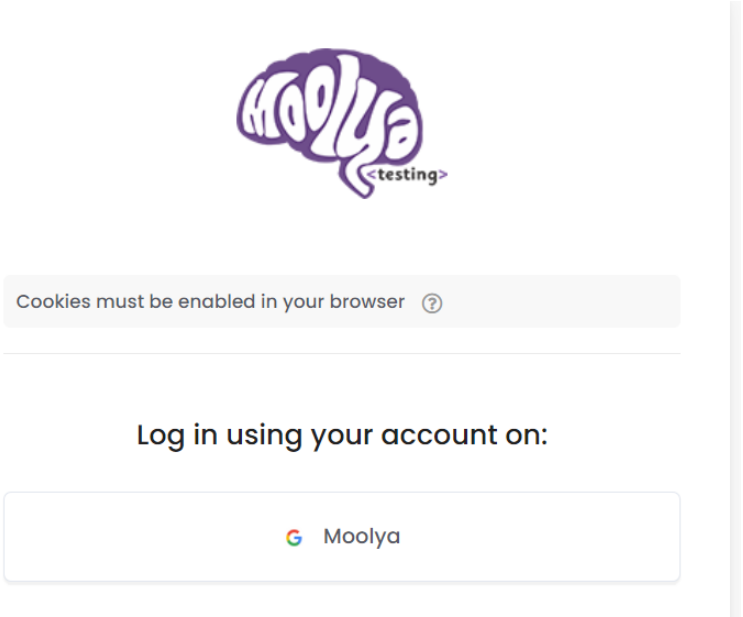

Fig . login using google account.

Types of Api

1. Open APIs: they are Public API, no restrictions to access these types of APIs because they are publicly available.
   Example -google map
2. Partner APIs: developer needs specific rights or licenses in order to access this type of API because they are not available to the public. companies to offer API access to business partners as an extra revenue channel for both parties
   Example – some ticket booking provide .
3. Internal APIs: Also known as Private APIs, only internal systems expose this type of API. These are usually designed for internal use within a company. The company uses this type of API among the different internal teams to be able to improve its products and services.
   Example – in some big companies they use this like in banking domanin

Saop vs rest api

Simple Object Access protocol	Representation state transfer

<?xml version="1.0"?> <SOAP-ENV:Envelope xmlns:SOAP-ENV ="http://www.w3.org/2001/12/soap-envelope" SOAP-ENV:encodingStyle =" http://www.w3.org/2001/12/soap-encoding"> <soap:Body> <Demo.Moolya Service xmlns="http://tempuri.org/"> <EmployeeID>int</EmployeeID> </Demo.moolya WebService> </soap:Body> </SOAP-ENV:Envelope>	{"city”: “Bangalore ","state":"Karnataka "}

Above are code generally used to execution

More bandwidth	Less bandwidth

Use XML format	Use xml,html,json, etc

Both of them have there own disadvantages

Increases code size and bandwidth & caching	Lack of security , and state

Connecting with api in JavaScript (front end)
Also it can be used with php or
Example - adding google calendar

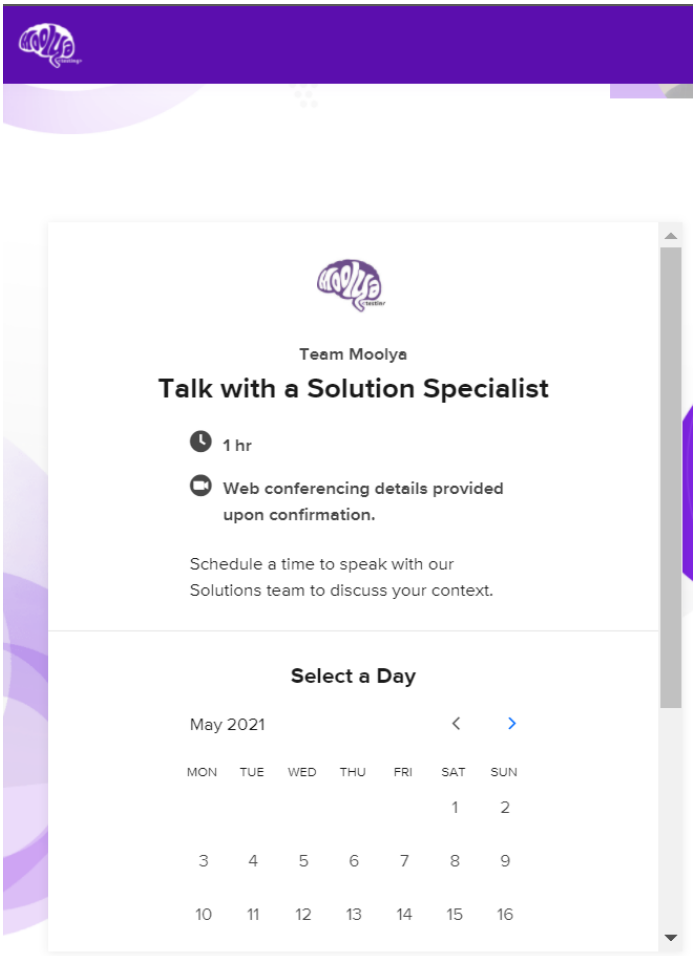

Fig - google calendar integration with website

Javascritp – when use JavaScript and api . response we get is in json format

To connect - need to add script.js in that add code of api

scripts.js

code example -

// Create a request variable and assign a new XMLHttpRequest object to it.

```
var request = new XMLHttpRequest();

// Open a new connection, using the GET request on the URL endpoint
request.open('GET', 'https://   https://apis.google.com/js/client:platform.js?onload=start', true);

request.onload =  Function () {
 // Begin accessing JSON data here
 }
}

// Send request
request.send();
```

```
googlecalendar // Constant URL value API

const googlecalendar= ''https://  https://apis.google.com/js/client:platform.js?onload=start ';google calendar
```

GET

```
// Making a GET request

date.get(`${googlecalendar }/${Date}`, { headers: DATE_REQUEST_HEADERS })

  .then(response => {

          console.log(response.data);

  })

  .catch(error => console.error('On get date error', error))
```


```
{

  "_id": "3060e599-b758-44cc-9eb4-8fda050b76d2",

  "body": {

  "date": "22",

  "day": "Saturday",

  "year": 2021
```

```
  },
  "created_at": 1563051939620
}
```

delete

```
date.delete(`${googlecalendar }/${student.id}`, { headers: DATE_REQUEST_HEADERS })
      .then(response => {
          console.log(response.data);
      })
      .catch(error => console.error('On change date error', error))
```

```
{
  "_id": "3060e599-b758-44cc-9eb4-8fda050b76d2",
  "message": "Data Deleted"
}
```

Some more example are chatbot used in website are built with api

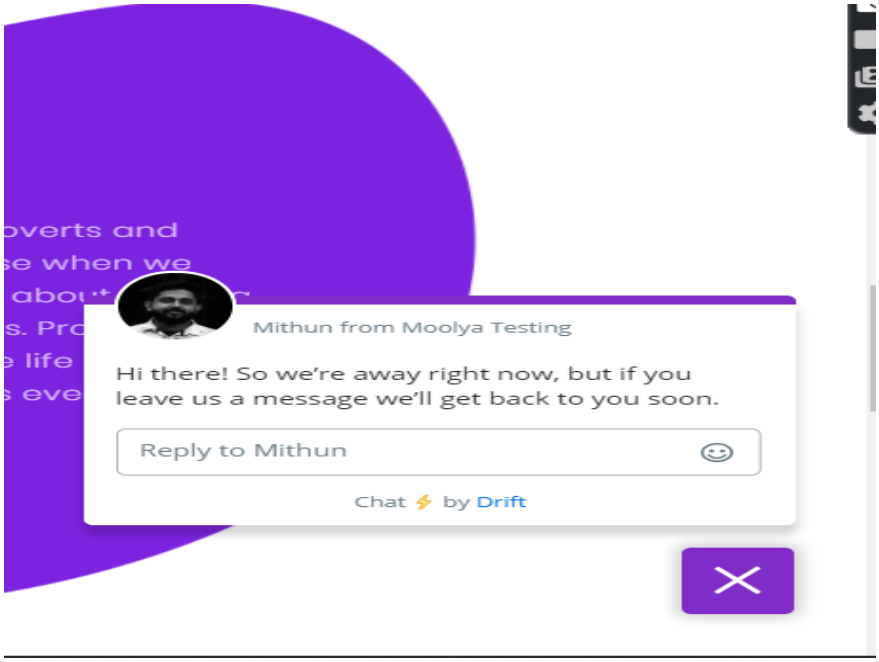

Fig – chatbot build using drift api .

Using php

```
// drift  API url

$url = 'https://drift.com/collections';
```

```
// Collection object

$data = [

  'collection' => 'DRiftAPI'

];
```

```
// Initializes a new customer session

$customer = customer($url);
```

post

```
Customer ($curl, Customer _RETURNTANSWER, true);
```

```
Customer ($Customer,  json_encode($data));


Customer t($Customer, Customer_HTTPHEADER, [
  'X-DriftAPI-Host:drift.com',
  'X-driftAPI-Key: ‘’,
  'Content-Type: application/json'
]);
```

After this execute

```
// Execute Customer request with all previous settings
$response = customer_exec($curl);
//If successfully then we get this message
{
  "status":"ok"
}
```

Make the GET Request

$url = 'https://drift.com/collections';
$collection_name = 'driftAPI';
$request_url = $url . '/' . $collection_name;

```
$customer = customer_init($request_url);
```

```
customer_get($customer, CUSTOMEROPT_RETURNMESSAGE, true);
customer_GET($curl, CUSTOMER_HTTPHEADER, [
  'X-DriftAPI-Host:driftapi.com',
  'X-DriftAPI-Key: ',
  'Content-Type: application/json'
]);
```

Question API

1) There is some disadvantages and advantages in both the soap and rest api . if user needs to all advantages from both . like mixing rest and soap can we get ?
   Example – what fast as well as secure and caching (including feature of saop)

2) If some application is built in cobalt or old programming Lang can api interact with that?
3) With api interaction if some website had serious security bug , so issue also came to interacting service.
4) With api if other application goes down then dependent application also goes down ?
5) Api call is single time authentication needed or multiple time needed
6) If one application had some issue with code or bug can it reflect on other dependent application

Resource used
Some Bolg and good api. And drift