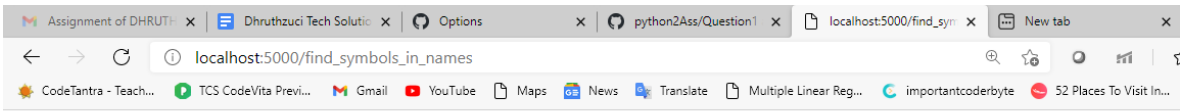
Question 1

Question1 : Write API:
Using Python Flask or ExpressJS, Write a REST API that reads the body and returns JSON.

```
const express = require('express');
const app = express();
const bodyParser = require('body-parser');
const cors = require("cors");


let port = process.env.PORT || 5000;
app.use(express.json());
app.use(bodyParser.urlencoded({ extended: true }));
app.use(cors());

app.get('/find_symbols_in_names',(req, res) => {

// let obj = (req.body);// this code use to get the request from frontend


let object = {
        chemicals: [ 'Amazon', 'Microsoft', 'Google' ],
        symbols: [ 'I', 'Am', 'cro', 'Na', 'le', 'abc' ]
    };
    let newObject = [];

    let forchemicalsarrays = object.chemicals;
    let forsymbolsarrays = object.symbols;

    forchemicalsarrays.forEach((element1) =>
    {
        for(let element2 of forsymbolsarrays)
        {
            if(element1.includes(element2) === true)
            {
                let index = element1.indexOf(element2)
 let str = element1.substring(0, index) + `[${element2}]`
                  + element1.substring(index+element2.length, element1.length+1);

                newObject.push(str);
            }
        }
    });

  a=newObject;

  const str=new String(a);


str.slice(0,30)



const aa=str.replace(/"/g,'')
const ob={
```

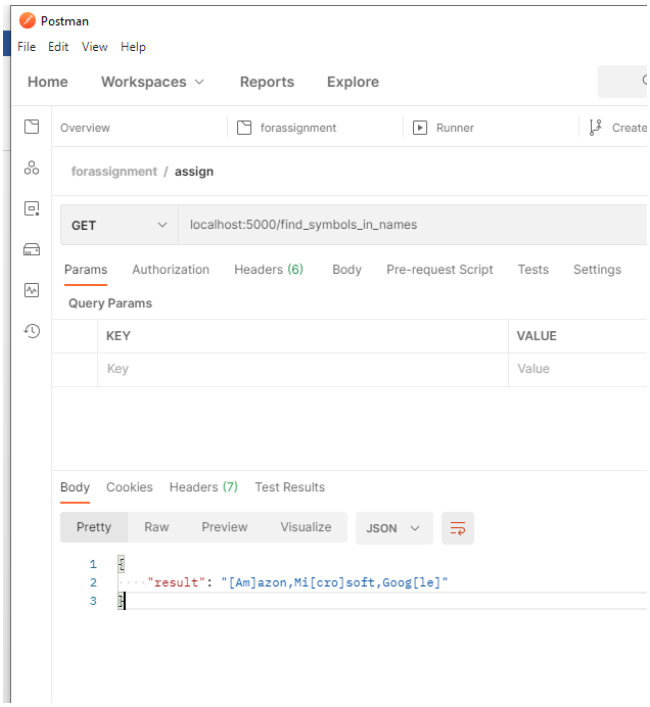
```
    result:aa,
}



   res.send(ob);
})

app.listen(port,()=>
{
    console.log(`Server started at ${port}`);
});
```

Output in chrome browser




{"result":"[Am]azon,Mi[cro]soft,Goog[le]"}

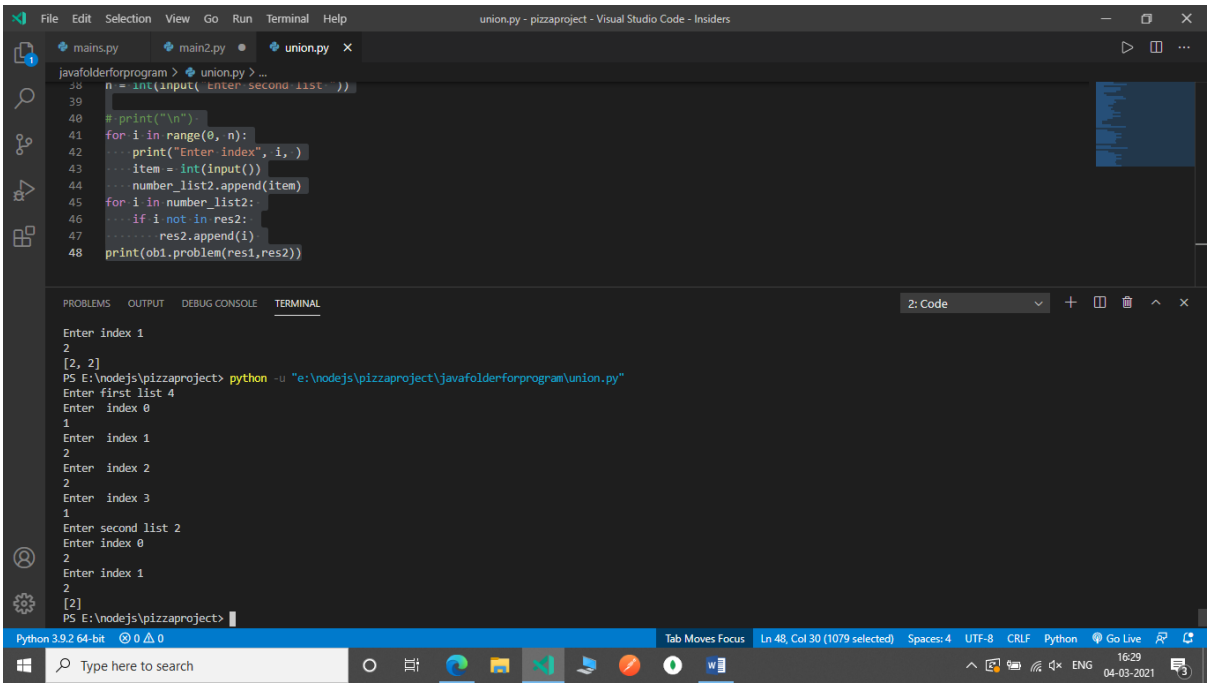
Output in postman



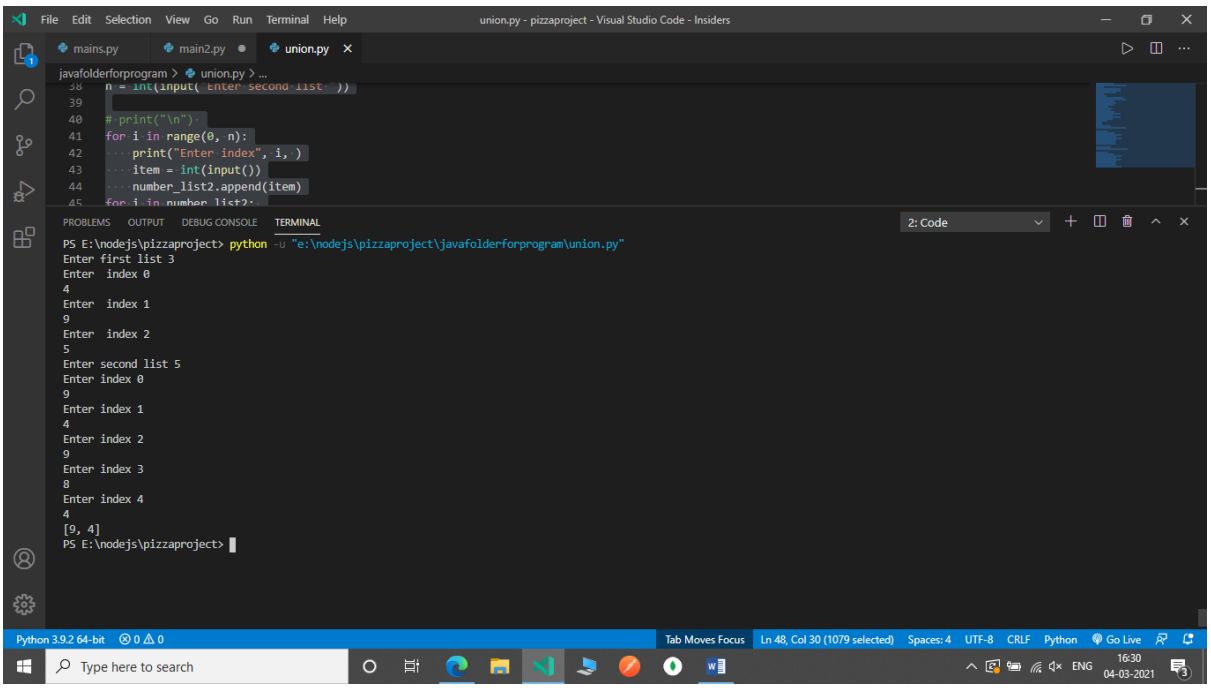
**Question 2:**
Given two arrays, write a function to compute their intersection.

```
class Main2(object):
   def problem(self, nums1, nums2):
      """
      :type nums1: List[int]
      :type nums2: List[int]
      :rtype: List[int]
      """
      m = {}
      if len(nums1)<len(nums2):
         nums1,nums2 = nums2,nums1
      for i in nums1:
         if i not in m:
            m[i] = 1
         else:
            m[i]+=1
      result = []
      for i in nums2:
         if i in m and m[i]:
            m[i]-=1
            result.append(i)
      return result
ob1 = Main2()
res1=[]
res2=[]
number_list1 = []
n = int(input("Enter first list"))

# print("\n")
for i in range(0, n):
    print("Enter  index", i,)
    item = int(input())
    number_list1.append(item)
for i in number_list1:
    if i not in res1:
        res1.append(i)

number_list2 = []
n = int(input("Enter second list "))

# print("\n")
for i in range(0, n):
    print("Enter index", i, )
    item = int(input())
    number_list2.append(item)
for i in number_list2:
    if i not in res2:
        res2.append(i)
print(ob1.problem(res1,res2))
```

case 1:


union.py - pizzaproject - Visual Studio Code - Insiders
mains.py
main2.py
union.py
javafolderforprogram > union.py > ...
n = int(input( Enter second list ))
# print("\n")
for i in range(0, n):
print("Enter index", i, )
item = int(input())
number_list2.append(item)
for i in number_list2:
if i not in res2:
res2.append(i)
print(ob1.problem(res1,res2))
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
2: Code
Enter index 1
2
[2, 2]
PS E:\nodejs\pizzaproject> python -u "e:\nodejs\pizzaproject\javafolderforprogram\union.py"
Enter first list 4
Enter index 0
1
Enter index 1
2
Enter index 2
2
Enter index 3
1
Enter second list 2
Enter index 0
2
Enter index 1
2
[2]
PS E:\nodejs\pizzaproject>
Python 3.9.2 64-bit
Tab Moves Focus
Ln 48, Col 30 (1079 selected)
Spaces: 4
UTF-8
CRLF
Python
Go Live
Type here to search
ENG
16:29
04-03-2021

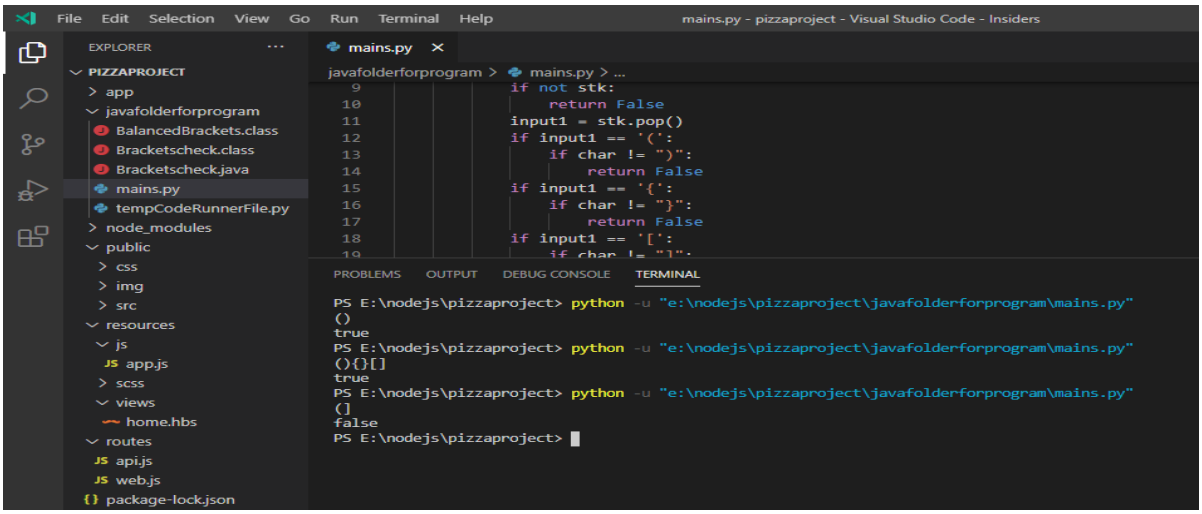
case 2:


union.py - pizzaproject - Visual Studio Code - Insiders
mains.py
main2.py
union.py
javafolderforprogram > union.py > ...
n = int(input( Enter second list ))
# print("\n")
for i in range(0, n):
print("Enter index", i, )
item = int(input())
number_list2.append(item)
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
2: Code
PS E:\nodejs\pizzaproject> python -u "e:\nodejs\pizzaproject\javafolderforprogram\union.py"
Enter first list 3
Enter index 0
4
Enter index 1
9
Enter index 2
5
Enter second list 5
Enter index 0
9
Enter index 1
4
Enter index 2
9
Enter index 3
8
Enter index 4
4
[9, 4]
PS E:\nodejs\pizzaproject>
Python 3.9.2 64-bit
Tab Moves Focus
Ln 48, Col 30 (1079 selected)
Spaces: 4
UTF-8
CRLF
Python
Go Live
Type here to search
ENG
16:30
04-03-2021

**Question 3:**
Given a string containing just the characters '(', ')', '{', '}', '[' and ']', determine if the input string is valid.

```python
def bracket(prtnum):
    stk = []
    for char in prtnum:
        if char in ["(", "{", "["]:
            stk.append(char)
        else:
            if not stk:
                return False
            input1 = stk.pop()
            if input1 == '(':
                if char != ")":
                    return False
            if input1 == '{':
                if char != "}":
                    return False
            if input1 == '[':
                if char != "]":
                    return False
    if stk:
        return False
    return True
if __name__ == "__main__":
    dev=input("")
    prtnum = dev
    if bracket(prtnum):
         print("true")
    else:
              print("false")
```

case 1 and case 2 both



**Question 4:**
Given a non-empty array of integers, every element appears twice except for one. Find that single one.

```
def NonRepeatvalue(arr, n):


    mp={}
    for i in range(n):
        if arr[i] not in mp:
            mp[arr[i]]=0
        mp[arr[i]]+=1


    for x in mp:
        if (mp[x]== 1):
            print(x,end="  is single \n")



sub=[]
ar2=int(input("total input"))
for i in range(0,ar2):
    ar=int(input())
    sub.append(ar)

n = len(sub)
NonRepeatvalue(sub, n)
```

Case 1:

```
PROBLEMS 2   OUTPUT   DEBUG CONSOLE   TERMINAL                                   2: Code

PS E:\nodejs\pizzaproject>
PS E:\nodejs\pizzaproject> python -u "e:\nodejs\pizzaproject\javafolderforprogram\ques1.py"
total input 3
2
2
1
1  is single
PS E:\nodejs\pizzaproject>
```

Case 2:

```
2
2
1
1  is single
PS E:\nodejs\pizzaproject> python -u "e:\nodejs\pizzaproject\javafolderforprogram\ques1.py"
total input 5
4
1
2
1
2
4  is single
PS E:\nodejs\pizzaproject>
```