



Lab task

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Program no 1

```
def dictionary(d):  
    sum =0  
    print("The keys are as following :")  
    for k,v in d.items():  
        print(k)  
    print("The values are as following:")  
    for k,v in d.items():  
        print(v)  
        sum+=v  
    if sum%2==0:  
        print("The sum is even ")  
    elif sum%2!=0:  
        print("The sum is odd")  
random_dictionary=  
{"a":1,"b":2,"c":3,"d":4,"e":5}  
dictionary(random_dictionary)
```



Output no 1

```
"C:\Users\User\PycharmProjects\Advent of code 2021\  
The keys are as following :  
a  
b  
c  
d  
e  
The values are as following:  
1  
2  
3  
4  
5  
The sum is odd
```

Program no 2

```
def tuple_product(x):  
    product = 1  
    for i in x:  
        product*=i  
    y = product  
    return product  
print(tuple_product(random_tuple))
```



Output no 2

```
"C:\Users\User\PycharmProjects\Advent of code 2021\  
3326400
```

```
Process finished with exit code 0
```

Program no 3

```
def random(x):  
    n = int(input("Enter the number you  
want to search in the nested list :"))  
    for i in x:  
        for j in i :  
            if n == j :  
                y = True  
                break  
            else :  
                y = False  
        if y == True :  
            break  
    return y  
  
print(random([[2,3],[5,3],[89,78]]))
```



Output no 3

```
C:\Users\User\PycharmProjects\pythonProject34\venv\Scripts\python.exe "C:
Enter the number you want to search in the nested list :2
True

Process finished with exit code 0
```

Program no 4

```
grades = {
    "A": 4.0,
    "A-": 3.67,
    "B+": 3.33,
    "B": 3.0,
    "B-": 2.67,
    "C+": 2.33,
    "C": 2.0,
    "C-": 1.67,
    "D+": 1.33,
    "D": 1.0,
    "F": 0
}

subjects = int(input("Enter the number of
total subjects :"))
result_1 = 0
sum = 0
for i in range(1, subjects+1):
    a = str(input("Enter the grade in
subject "+str(i)))
    b = int(input("Enter the credit
```



```
hours of subject "+str(i)))
    product = grades[a]*b
    result_1 +=product
    sum +=b
    result = (result_1/sum)
print("The Gpa of the given person is ",
result)
```

Output no 4

```
C:\Users\User\PycharmProjects\pythonProject34\venv\Scripts\python.exe
Enter the number of total subjects :4
Enter the grade in subject 1A
Enter the credit hours of subject 13
Enter the grade in subject 2B-
Enter the credit hours of subject 23
Enter the grade in subject 3C
Enter the credit hours of subject 33
Enter the grade in subject 4D
Enter the credit hours of subject 43
The Gpa of the given person is 2.4175

Process finished with exit code 0
|
```