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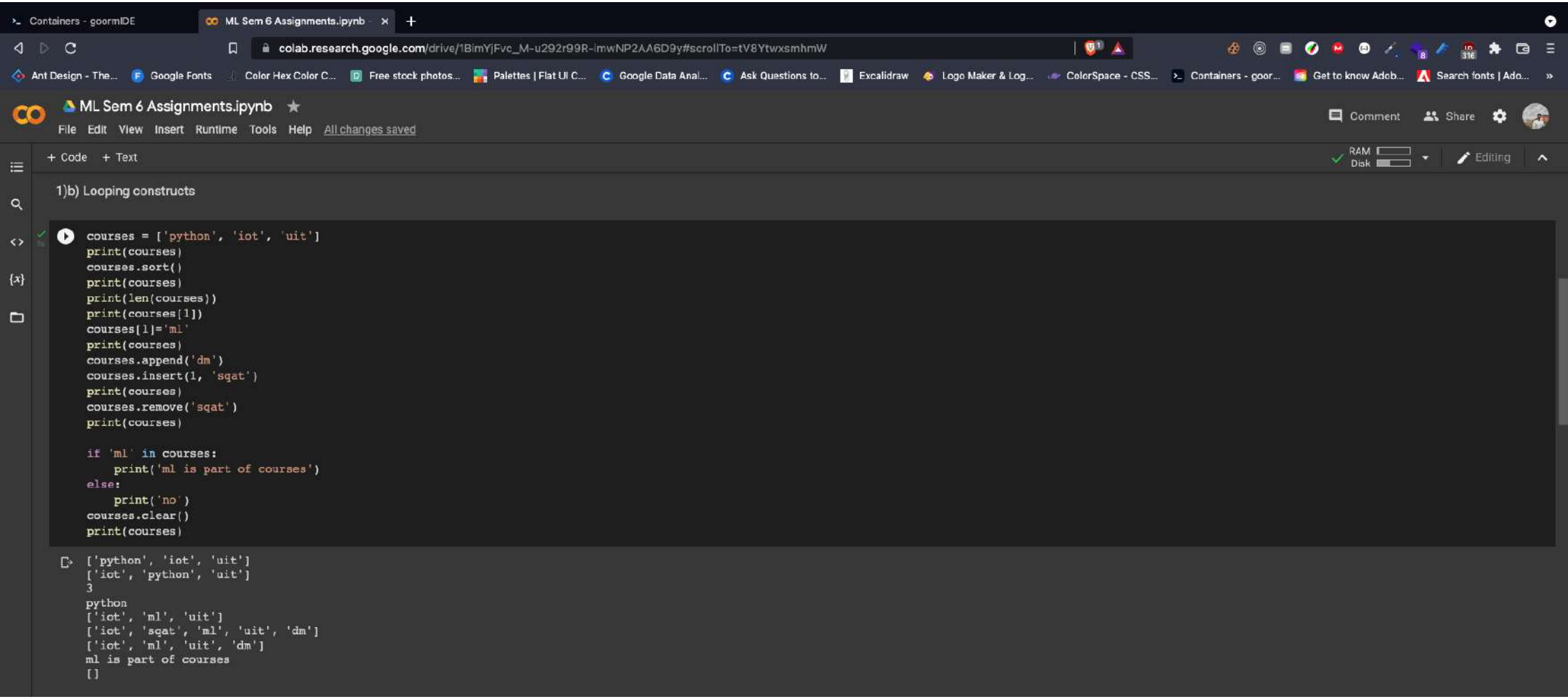
1) a) Handling Input and output

```
name=input("Enter your name: ")
print("Your name is: ", name)
print (type (name))
age=input("Enter your age: ")
print("Your age is: ", age)
print (type (age))
sal = input ("Enter your sal: ")
print("Your sal is: ", sal)
print (type (sal))
age = 22
sal = 10.50
complex = 3+5j
print (type(age))
print (type(sal))
print (type (complex))
```

```
Enter your name:  sivasai
Your name is:   sivasai
<class 'str'>
Enter your age: 21
Your age is:  21
<class 'str'>
Enter your sal: 1,00,000
Your sal is:  1,00,000
<class 'str'>
<class 'int'>
<class 'float'>
<class 'complex'>
```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1)b) Looping constructs
courses = ['python', 'iot', 'uit']
print(courses)
courses.sort()
print(courses)
print(len(courses))
print(courses[1])
courses[1]='ml'
print(courses)
courses.append('dm')
courses.insert(1, 'sqat')
print(courses)
courses.remove('sqat')
print(courses)
if 'ml' in courses:
print('ml is part of courses')
else:
print('no')
courses.clear()
print(courses)
['python', 'iot', 'uit']
['iot', 'python', 'uit']
3
python
['iot', 'ml', 'uit']
['iot', 'sqat', 'ml', 'uit', 'dm']
['iot', 'ml', 'uit', 'dm']
ml is part of courses
[]

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1)c) Arrays, List,Sets,Dictionaries

```
dcourses = {
    "python": "x",
    "iot": "y",
    "uit": "z"
}
print(dcourses)
print(dcourses["python"])
dcourses["python"] = "a"
print(dcourses)
for i in dcourses:
    print(i)
for j in dcourses.values():
    print(j)
for (i, j) in dcourses.items():
    print(i, j)
```

```
{'python': 'x', 'iot': 'y', 'uit': 'z'}
x
{'python': 'a', 'iot': 'y', 'uit': 'z'}
python
iot
uit
a
y
z
python a
iot y
uit z
```

2)a) Modules and Functions

```
[10] def add(a,b):
        return a+b
     def sub(a, b):
        return a-b
     def mul(a, b):
        return a*b
     def div(a, b):
        return a/b
     num1=input("Enter Number 1: ")
```

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2)a) Modules and Functions

```
def add(a,b):
      return a+b
def sub(a, b):
      return a-b
def mul(a, b):
      return a*b
def div(a, b):
      return a/b
num1=input("Enter Number 1: ")
num2=input("Enter Number 2: ")
result = add(int(num1), int (num2))

print('Sum of ', num1," and ", num2, "is ", result)
result = sub(int (num1), int(num2))
print("Subtraction of ", num1, "and", num2, "is", result)
result = mul (int (num1), int (num2))
print("Multiplication of ", num1," and ", num2, "is", result)
result =div(int (num1), int(num2))
print("Division of ", num1," and ", num2, "is", result)
```

```
Enter Number 1: 50
Enter Number 2: 40
Sum of  50  and  40 is  90
Subtraction of  50 and 40 is 10
Multiplication of  50  and  40 is 2000
Division of  50  and  40 is 1.25
```

2)b) File handling

```
[12] fwrite = open("filewrite.txt", "w")
     fwrite.write("Line of text added to the file")
     fwrite = open("filewrite.txt", "a")
     fwrite.write("Line of text appended to the file")
     fwrite.close()
     fread = open("filewrite.txt", "r")
     print(fread.read())
     fread.close()
```

```
Line of text added to the fileLine of text appended to the file
```

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2)c) Exception handling

```
try:
    print(x)
except:
    print("An exception occurred")
try:
    print(x)
except NameError:
    print("Variable X is not declared")
except:
    print("An exception occurred")
try:
    fopen = open("nofile.txt", "r")
    fopen.write("test")
except:
    print("Cannot write to file, as it is opened in read mode")
```

```
An exception occurred
Variable X is not declared
Cannot write to file, as it is opened in read mode
```

3) From a given List, find second highest value from the list.

Input: [6,5,2,1,6,4] Output: 5

```
list1=list (map(int, input("Input: ").split()))
mx=max(list1[0],list1[1])
secondmax=min (list1[0], list1[1])
n=len(list1)
for i in range (2,n):
    if list1[i]>mx:
        secondmax=mx
        mx=list1[i]
    elif list1[i]>secondmax and \
        mx != list1[i]:
        secondmax=list1[i]
print("Output: ",\
      str(secondmax))
```

```
Input: 6 5 2 1 6 4
```

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for i in range (2,n):
    if list1[i]>mx:
        secondmax=mx
        mx=list1[i]
    elif list1[i]>secondmax and \
        mx != list1[i]:
        secondmax=list1[i]
print("Output: ",\
      str(secondmax))
```

```
Input: 6 5 2 1 6 4
Output:  5
```

14s completed at 16:09