PROGRAM (1).

INPUT

python - Notepad

File Edit Format View Help

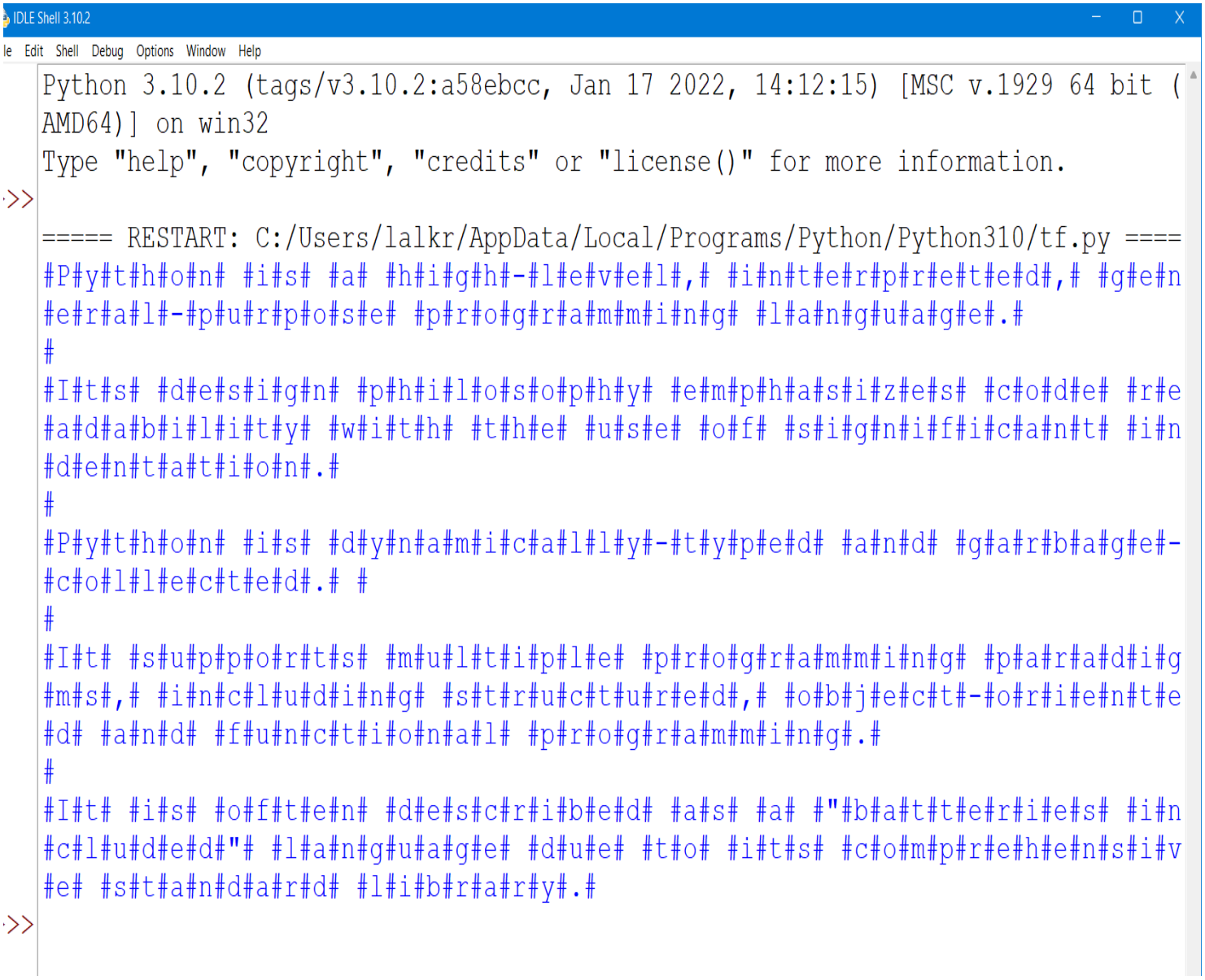
```
Python is a high-level, interpreted, general-purpose programming language.
Its design philosophy emphasizes code readability with the use of significant
indentation.
Python is dynamically-typed and garbage-collected.
It supports multiple programming paradigms, including structured, object-oriented and
functional programming.
It is often described as a "batteries included" language due to its comprehensive
standard library.
```

tf.py - C:/Users/lalkr/AppData/Local/Programs/Python/Python310/tf.py (3.10.2)

File Edit Format Run Options Window Help

```
# Read a text file line by line and display each word separated by a #.
file=open('C:/Users/lalkr/OneDrive/Desktop/python/python.txt','r')
data=file.readlines()
for i in data:
        print(i.replace("","#"))
```

OUTPUT


IDLE Shell 3.10.2
le Edit Shell Debug Options Window Help
Python 3.10.2 (tags/v3.10.2:a58ebcc, Jan 17 2022, 14:12:15) [MSC v.1929 64 bit (
AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>
===== RESTART: C:/Users/lalkr/AppData/Local/Programs/Python/Python310/tf.py ====
#P#y#t#h#o#n# #i#s# #a# #h#i#g#h#-#l#e#v#e#l#,# #i#n#t#e#r#p#r#e#t#e#d#,# #g#e#n
#e#r#a#l#-#p#u#r#p#o#s#e# #p#r#o#g#r#a#m#m#i#n#g# #l#a#n#g#u#a#g#e#.#
#
#I#t#s# #d#e#s#i#g#n# #p#h#i#l#o#s#o#p#h#y# #e#m#p#h#a#s#i#z#e#s# #c#o#d#e# #r#e
#a#d#a#b#i#l#i#t#y# #w#i#t#h# #t#h#e# #u#s#e# #o#f# #s#i#g#n#i#f#i#c#a#n#t# #i#n
#d#e#n#t#a#t#i#o#n#.#
#
#P#y#t#h#o#n# #i#s# #d#y#n#a#m#i#c#a#l#l#y#-#t#y#p#e#d# #a#n#d# #g#a#r#b#a#g#e#-
#c#o#l#l#e#c#t#e#d#.# #
#
#I#t# #s#u#p#p#o#r#t#s# #m#u#l#t#i#p#l#e# #p#r#o#g#r#a#m#m#i#n#g# #p#a#r#a#d#i#g
#m#s#,# #i#n#c#l#u#d#i#n#g# #s#t#r#u#c#t#u#r#e#d#,# #o#b#j#e#c#t#-#o#r#i#e#n#t#e
#d# #a#n#d# #f#u#n#c#t#i#o#n#a#l# #p#r#o#g#r#a#m#m#i#n#g#.#
#
#I#t# #i#s# #o#f#t#e#n# #d#e#s#c#r#i#b#e#d# #a#s# #a# #"#b#a#t#t#e#r#i#e#s# #i#n
#c#l#u#d#e#d#"# #l#a#n#g#u#a#g#e# #d#u#e# #t#o# #i#t#s# #c#o#m#p#r#e#h#e#n#s#i#v
#e# #s#t#a#n#d#a#r#d# #l#i#b#r#a#r#y#.#
>>

```
Vowels are :  39
consonants are :  61
Lower case letters are :  98
Upper case letters are :  2
>>>
```

```
# Read a text file and displaythe number of
#vowels/consonants/uppercase/lowercase characters in the file.
f=open("test2.txt","r")
cont=f.read()
v=0
cons=0
l_c_l=0
u_c_l=0
for ch in cont:
    if (ch.islower()):
        l_c_l+=1
    elif(ch.isupper()):
        u_c_l+=1
    ch=ch.lower()
    if( ch in ['a','e','i','o','u']):
        v+=1
    elif (ch in ['b','c','d','f','g',
                 'h','j','k','l','m',
                 'n','p','q','r','s',
                 't','v','w','x','y','z']):
        cons+=1
f.close()
print("Vowels are : ",v)
print("consonants are : ",cons)
print("Lower case letters are : ",l_c_l)
print("Upper case letters are : ",u_c_l)
```

OUTPUT OF PROGRAM (2).

INPUT OF PROGRAM (3

```
#Remove all the lines that contain the character 'a' in a file and write it to another file.
print("Remove all the lines that contain the character 'a' in a file and write it to another file. ")
myfile = open("book.txt", "r")
newfile = open("story.txt", "w")
line = myfile.readlines()
print()
print("data in first file ")
print(line)
print()
for data in line:
   if 'a'  not in data:
      newfile.write(data)
newfile= open("story.txt", "r")
line = newfile.readlines()
print("Data get copied in second file")
print(line)
```

OUTPUT OF PROGRAM (3).

```
Remove all the lines that contain the character 'a' in a file and write it to another file.

data in first file
['Write\n', 'a \n', 'Python\n', 'program\n', 'to \n', 'implement \n', 'a \n', 'stack \n', 'using \n', 'list.']

Data get copied in second file
['Write\n', 'Python\n', 'to \n', 'implement \n', 'using \n', 'list.']
>>>
```

INPUT OF PROGRAM (4

```
#Create a binary file with name and roll number.
#Search for a given roll number and display the name, if not found
#display appropriate messageimport pickle
import sys
import csv
dict={}
def write_in_file():
    file=open("stud2.csv","ab")
    no=int(input("ENTER NO OF STUDENTS: "))
    for i in range(no):
        print("Enter details of student ", i+1)
        dict["roll"]=int(input("Enter roll number: "))
        dict["name"]=input("enter the name: ")
        pickle.dump(dict,file)
    file.close()
def display():
    file=open("stud2.csv","rb")
    try:
        while True:
            stud=pickle.load(file)
            print(stud)
    except EOFError:
        pass
    file.close()
def search():
    file=open("stud2.csv","rb")
    r=int(input("enter the rollno to search: "))
    found=0
    try:
        while True:
            data=pickle.load(file)
            if data["roll"]==r:
```

```
    file.close()
def search():
    file=open("stud2.csv","rb")
    r=int(input("enter the rollno to search: "))
    found=0
    try:
        while True:
            data=pickle.load(file)
            if data["roll"]==r:
                print("The rollno =",r," record found")
                print(data)
                found=1
                break
    except EOFError:
        pass
    if found==0:
        print("The rollno =",r," record is not found")
    file.close()
while True:
    print("MENU \n 1-Write in a file \n 2-display ")
    print(" 3-search\n 4-exit \n")
    ch=int(input("Enter your choice = "))
    if ch==1:
        write_in_file()
    if ch==2:
        display()
    if ch==3:
        search()
    if ch==4:
        print(" Thank you ")
        sys.exit()
```

```
MENU
 1-Write in a file
 2-display
 3-search
 4-exit

Enter your choice = 1
ENTER NO OF STUDENTS: 2
Enter details of student  1
Enter roll number: 2
enter the name: abhigyan
Enter details of student  2
Enter roll number: 4
enter the name: anurag
MENU
 1-Write in a file
 2-display
 3-search
 4-exit

Enter your choice = 2
{'roll': 2, 'name': 'abhigyan'}
{'roll': 4, 'name': 'anurag'}
MENU
 1-Write in a file
 2-display
 3-search
 4-exit

Enter your choice = 3
enter the rollno to search: 2
The rollno = 2  record found
{'roll': 2, 'name': 'abhigyan'}
MENU
 1-Write in a file
 2-display
 3-search
 4-exit

Enter your choice = 4
 Thank you
>>>
```

OUTPUT OF PROGRAM (4).

INPUT OF PROGRAM (5).

```
#Create a binary file with roll number, name and marks.
#Input a roll number and update the marks.
import pickle
f=open("records.dat", "wb")
pickle.dump([1, "Wakil", 90], f)
pickle.dump([2, "Tanish", 80], f)
pickle.dump([3, "Priyashi", 90], f)
pickle.dump([4, "Kanupriya", 80], f)
pickle.dump([5, "Ashutosh", 85], f)
f.close()
f=open("records.dat", "rb")
roll=int(input("Enter the Roll Number: "))
marks=float(input("Enter the updated marks: "))
List = [ ]
flag = False
while True:
    try:
        record=pickle.load(f)
        List.append(record)
    except EOFError:
        break
f.close()
f=open("records.dat", "wb")
for rec in List:
    if rec[0]==roll:
        rec[2] = marks
        pickle.dump(rec, f)
        print("Record updated successfully")
        flag = True
    else:
```

```
Enter the Roll Number: 2
Enter the updated marks: 23
Record updated successfully
>>>
```

```
        f.close()
        if flag==False:
            print("This roll number does not exist")
```

OUTPUT OF PROGRAM (5).

INPUT OF PROGRAM (6).

```
# Write a random number generator that generates random numbers
#between 1 and 6 (simulates a dice).
import random
def rolladice():
  counter = 0
  myList = []
  while (counter) < 6:
     randomNumber = random.randint(1,6)
     myList.append(randomNumber)
     counter = counter + 1
     if (counter)>=6:
        pass
     else:
        return myList

# Take user input here
n=1
while(n==1):
  n = int(input("Enter 1 to roll a dice and get a random number:"))
  print(rolladice())
```

```
Enter 1 to roll a dice and get a random number:1
[2]
Enter 1 to roll a dice and get a random number:2
[6]
>>>
```

OUTPUT OF PROGRAM (6).

INPUT OF PROGRAM (7).

```
# Write a Python program to implement a stack using list.
class Node:
    def __init__(self, data):
        self.data = data
        self.next = None

class Stack:
    def __init__(self):
        self.head = None

    def push(self, data):
        if self.head is None:
            self.head = Node(data)
        else:
            new_node = Node(data)
            new_node.next = self.head
            self.head = new_node

    def pop(self):
        if self.head is None:
            return None
        else:
            popped = self.head.data
            self.head = self.head.next
            return popped
```

```
a_stack = Stack()
while True:
    print('push <value>')
    print('pop')
    print('quit')
    do = input('What would you like to do? ').split()

    operation = do[0].strip().lower()
    if operation == 'push':
        a_stack.push(int(do[1]))
    elif operation == 'pop':
        popped = a_stack.pop()
        if popped is None:
            print('Stack is empty.')
        else:
            print('Popped value: ', int(popped))
    elif operation == 'quit':
        break
```

OUTPUT OF PROGRAM (7).

```
push <value>
pop
quit
What would you like to do? push 15
push <value>
pop
quit
What would you like to do? push 3
push <value>
pop
quit
What would you like to do? pop
Popped value:  3
push <value>
pop
quit
What would you like to do? pop
Popped value:  15
push <value>
pop
quit
What would you like to do? quit
>>> /
```

INPUT OF PROGRAM (8).

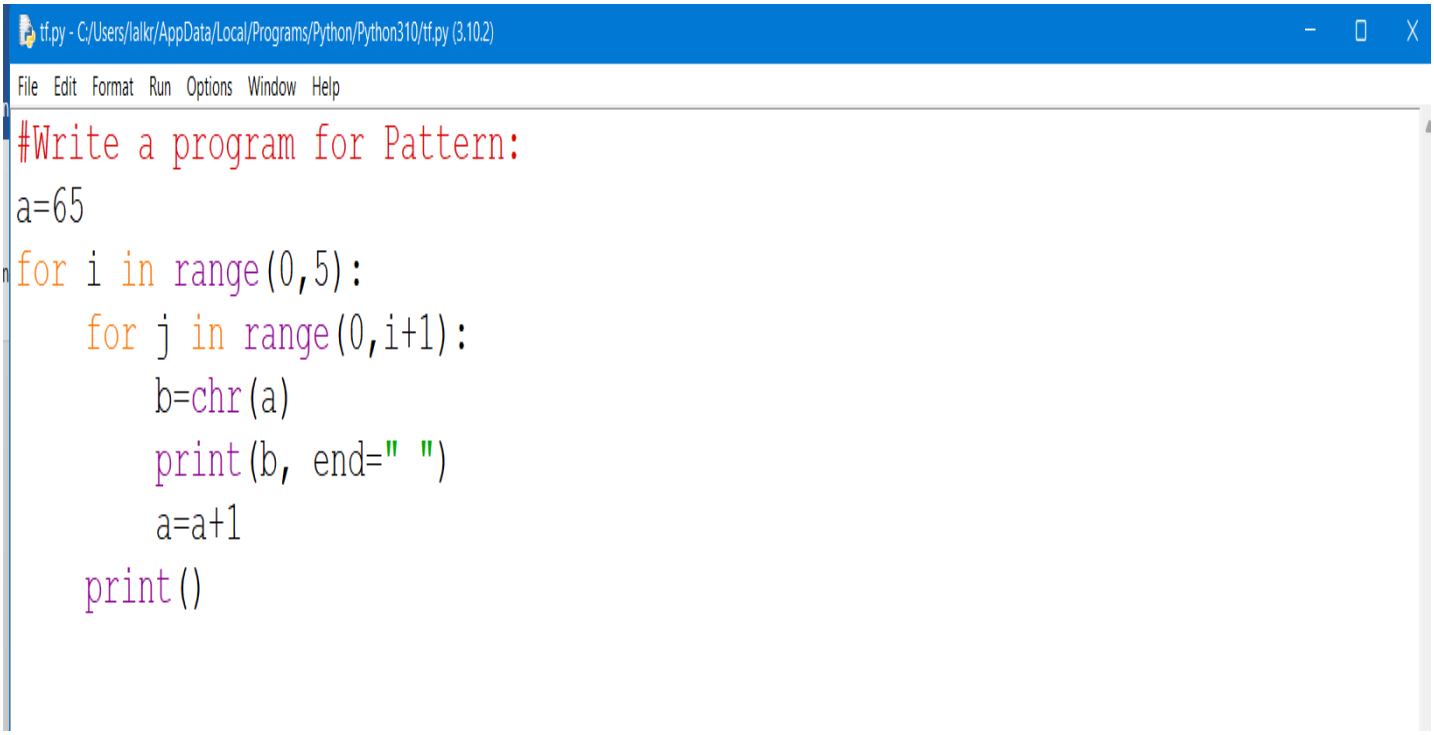
```
enter id: abhigyankushwaha72@gmail.com
enter password: abhigyan111222333888777555
press Y/y to continue and N/n to terminate the program
n
enter the user id to be searched
abhigyankushwaha72@gmail.com
abhigyan111222333888777555
>>>
```

```
#Create a CSV file by entering user-id and password, read and
#search the password for given user id
import csv
with open("user_info.csv", "w") as obj:
    fileobj = csv.writer(obj)
    fileobj.writerow(["User Id", "password"])
    while(True):
        user_id = input("enter id: ")
        password = input("enter password: ")
        record = [user_id, password]
        fileobj.writerow(record)
        x = input("press Y/y to continue and N/n to terminate the program\n")
        if x in "Nn":
            break
        elif x in "Yy":
            continue
with open("user_info.csv", "r") as obj2:
    fileobj2 = csv.reader(obj2)
    given = input("enter the user id to be searched\n")
    for i in fileobj2:
        next(fileobj2)
        # print(i,given)
        if i[0] == given:
            print(i[1])
            break
```

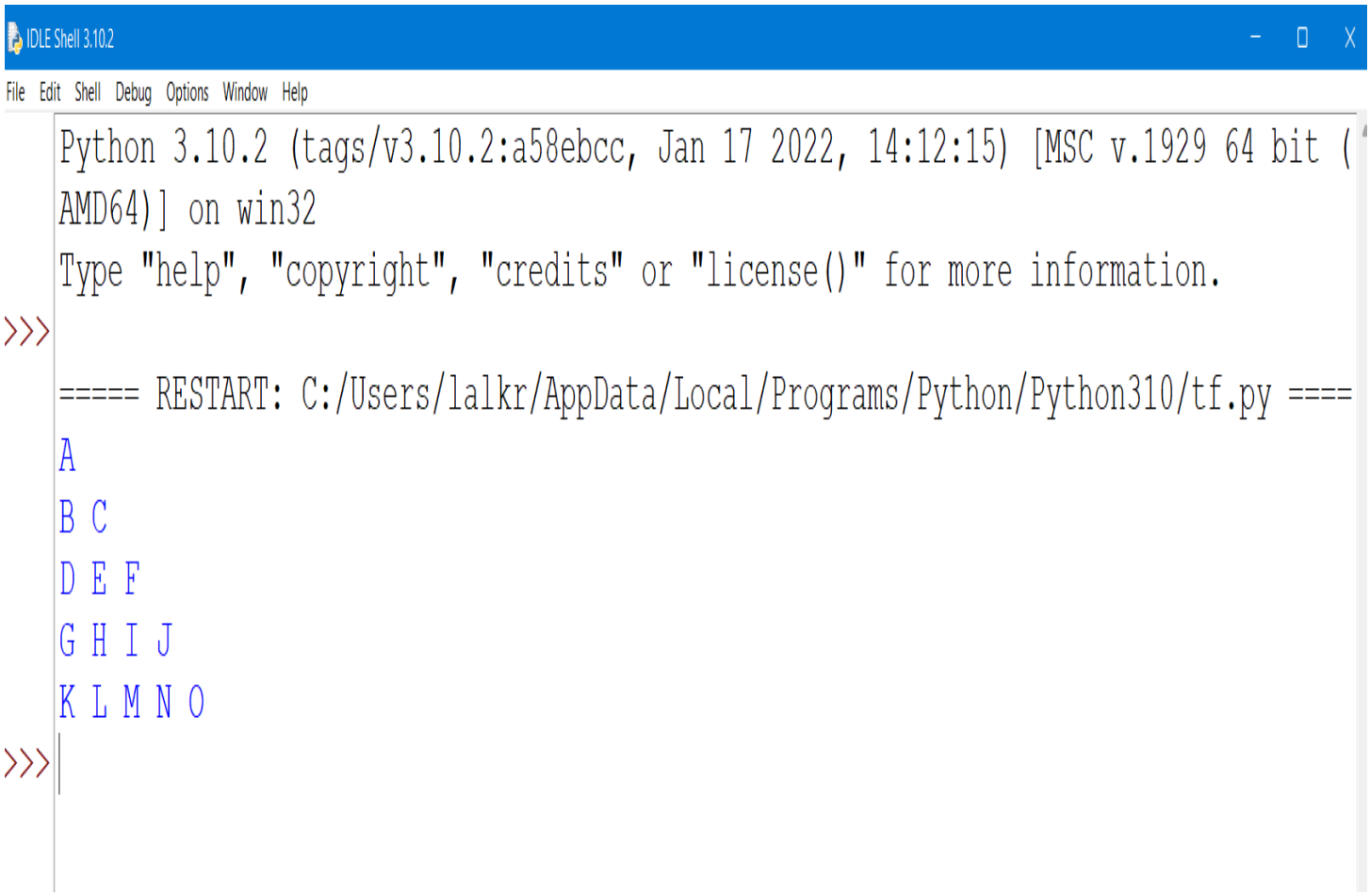
OUTPUT OF PROGRAM (8).

PROGRAM 9(A).

INPUT

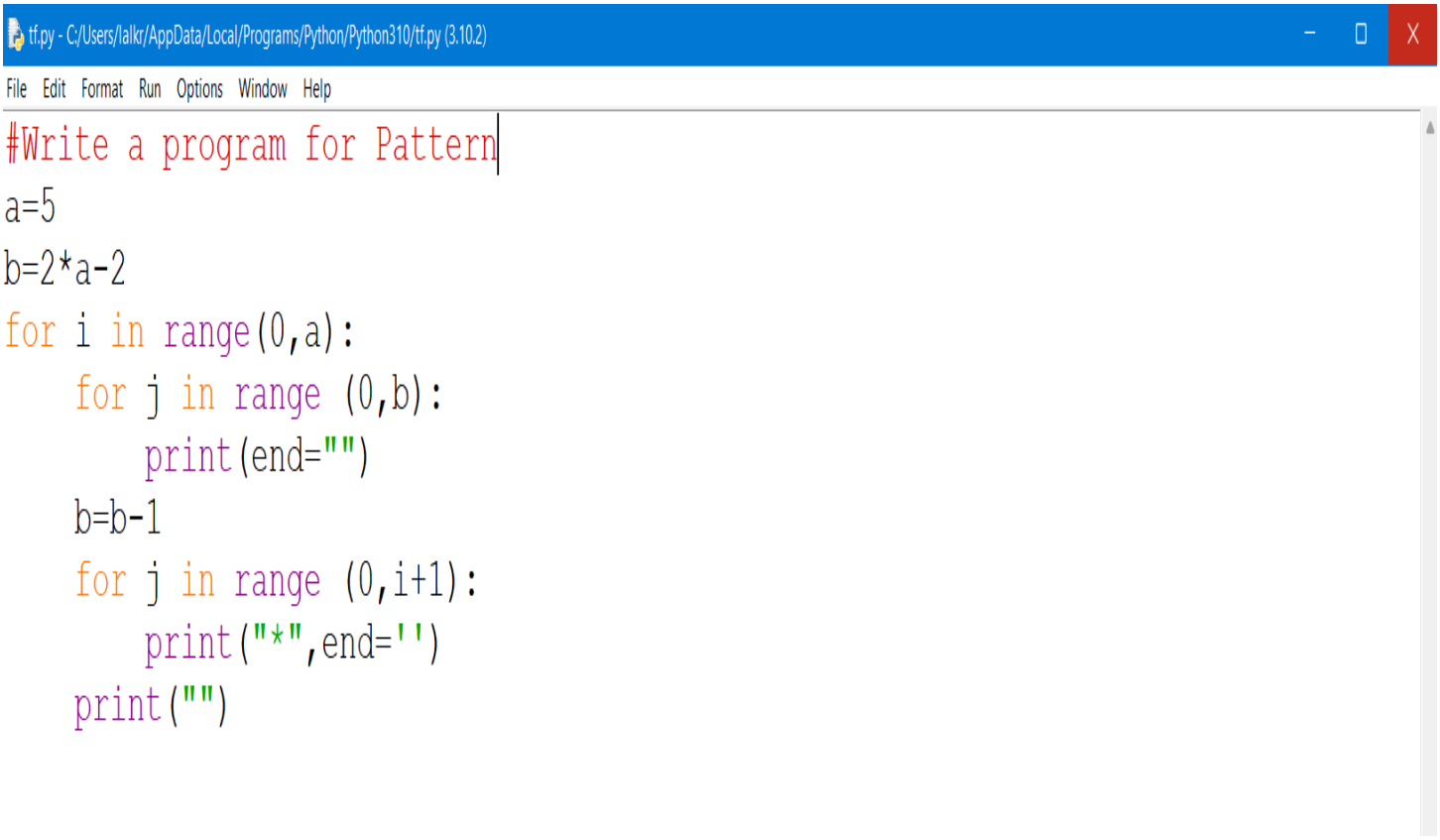


OUTPUT

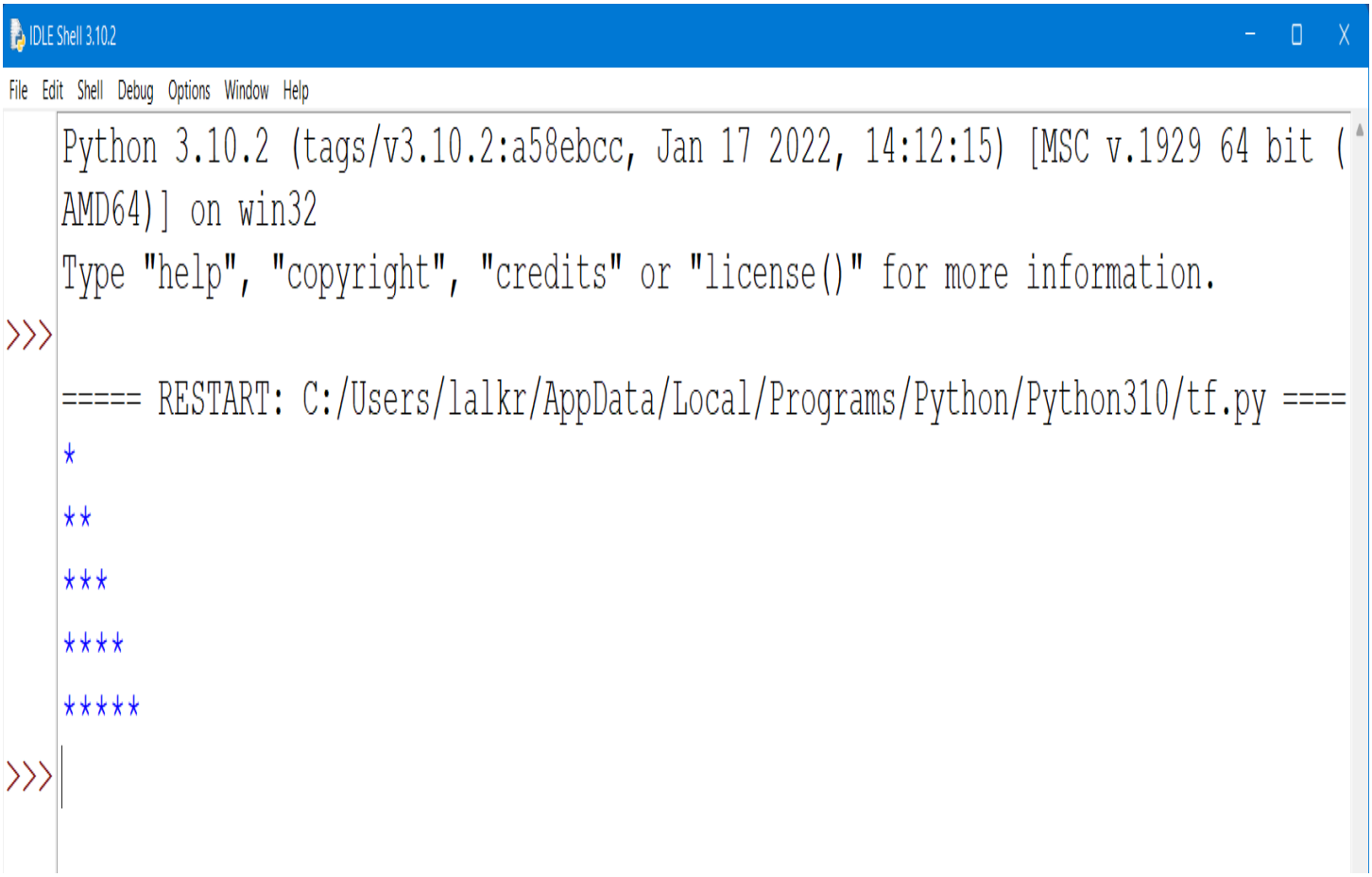

IDLE Shell 3.10.2
File Edit Shell Debug Options Window Help
Python 3.10.2 (tags/v3.10.2:a58ebcc, Jan 17 2022, 14:12:15) [MSC v.1929 64 bit (
AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: C:/Users/lalkr/AppData/Local/Programs/Python/Python310/tf.py ====
A
B C
D E F
G H I J
K L M N O
>>>

PROGRAM 9(B).

INPUT

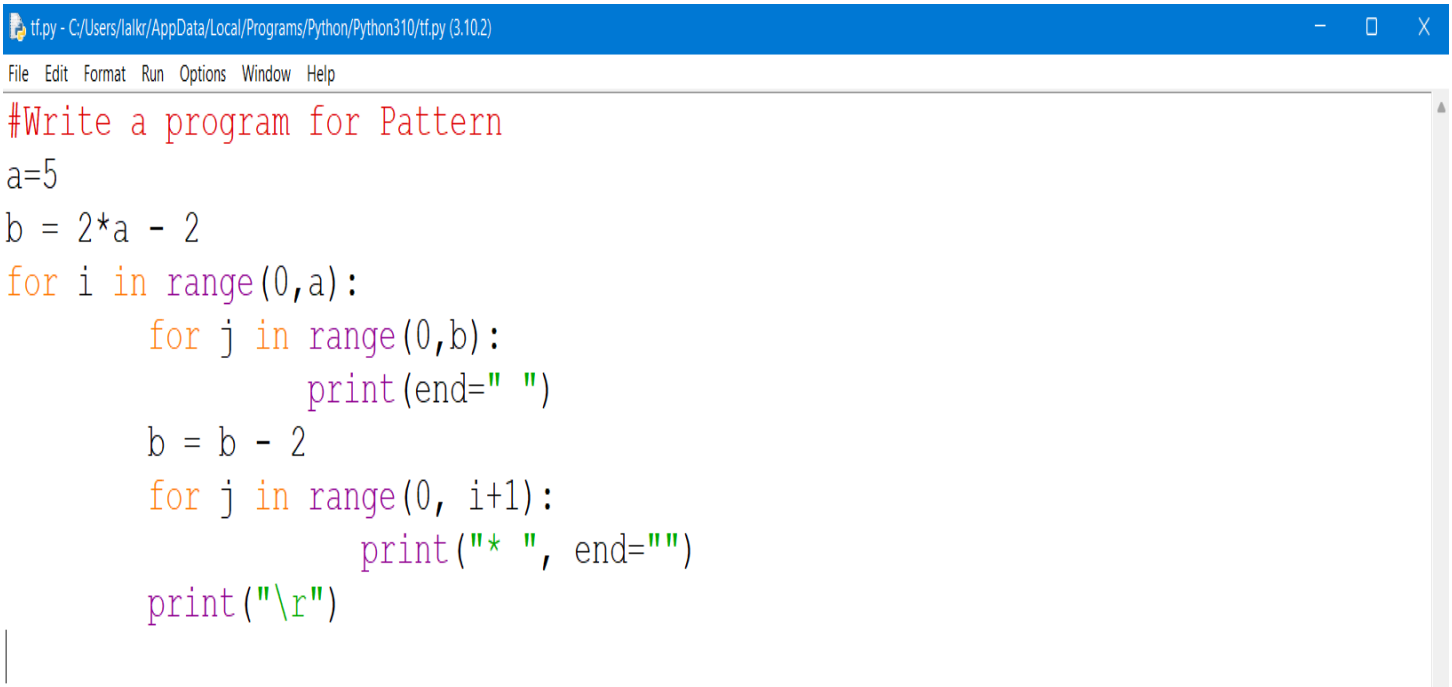


OUTPUT

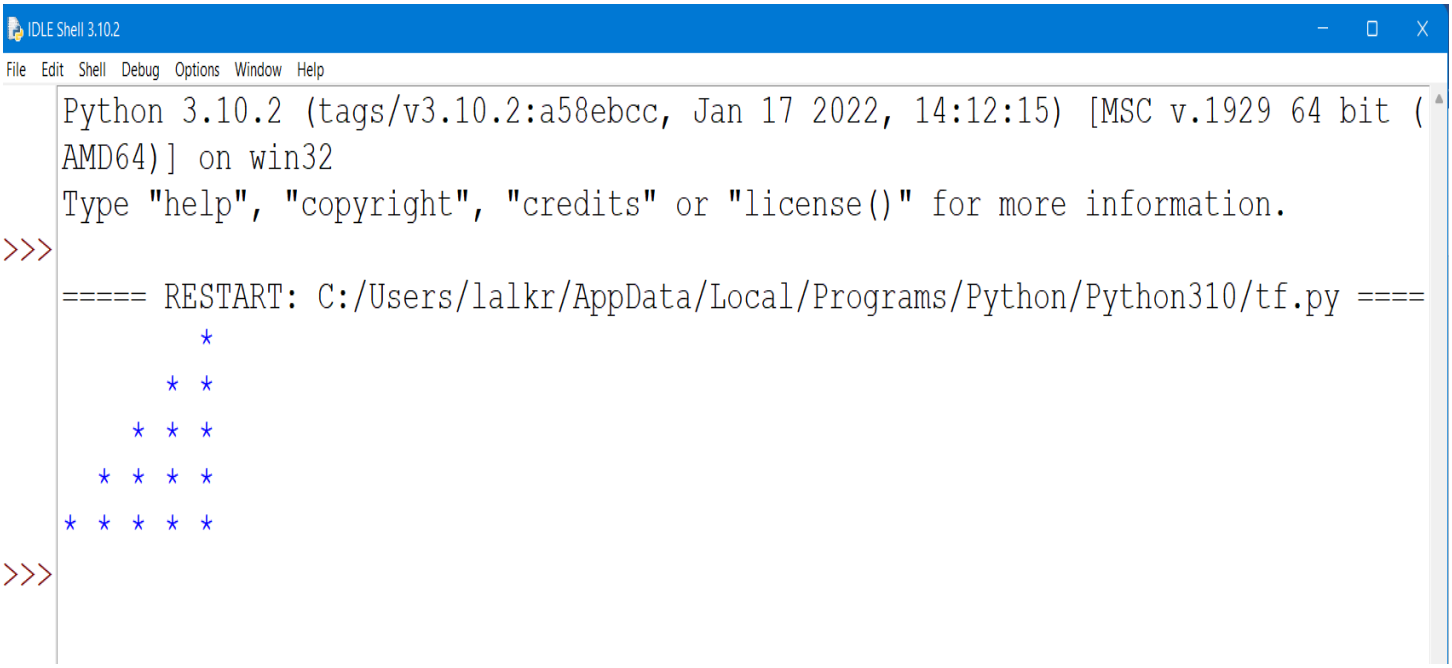

IDLE Shell 3.10.2
File Edit Shell Debug Options Window Help
Python 3.10.2 (tags/v3.10.2:a58ebcc, Jan 17 2022, 14:12:15) [MSC v.1929 64 bit (
AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: C:/Users/lalkr/AppData/Local/Programs/Python/Python310/tf.py ====
*
**
***
****
*****
>>>

PROGRAM 9(C).

INPUT

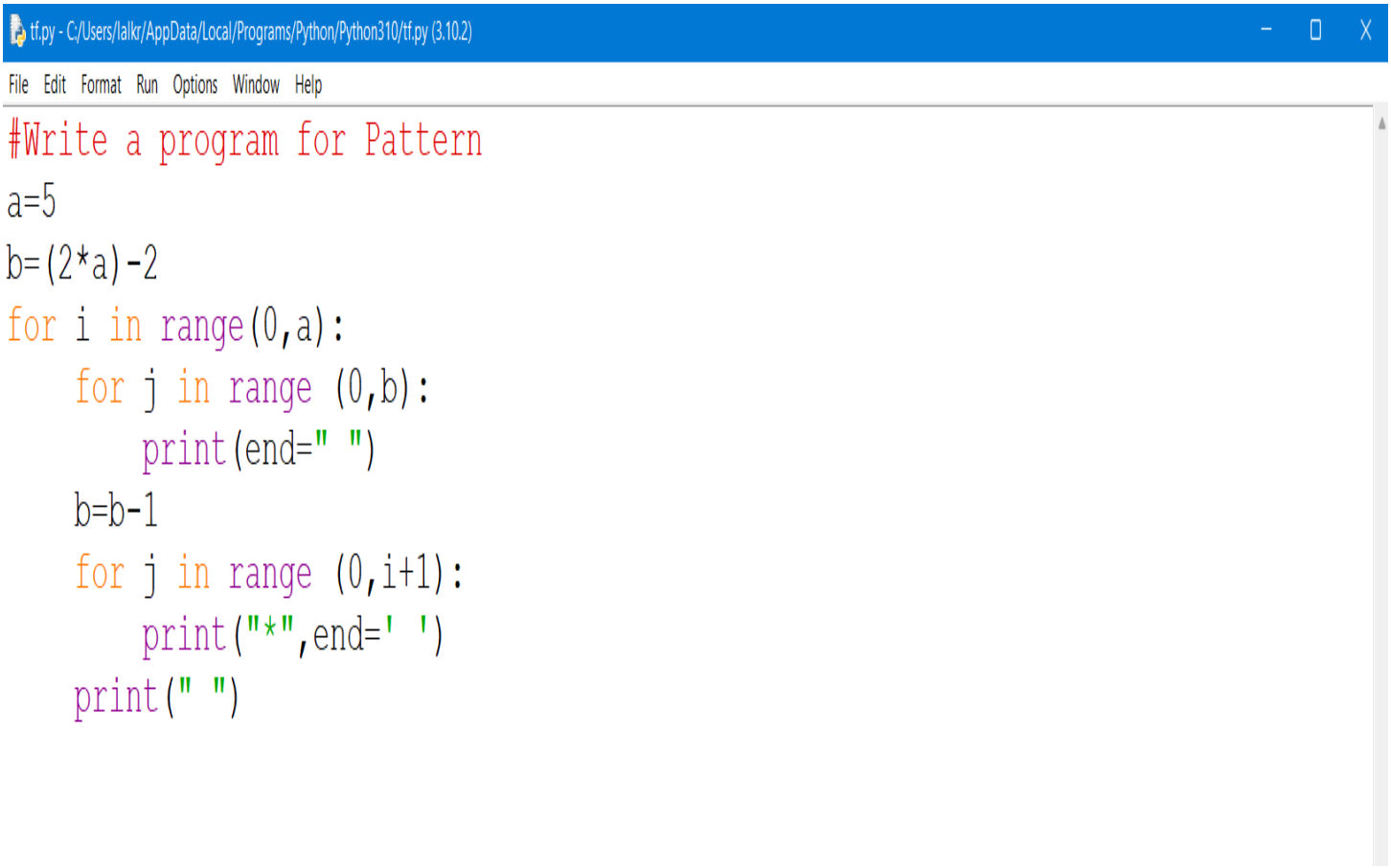


OUTPUT

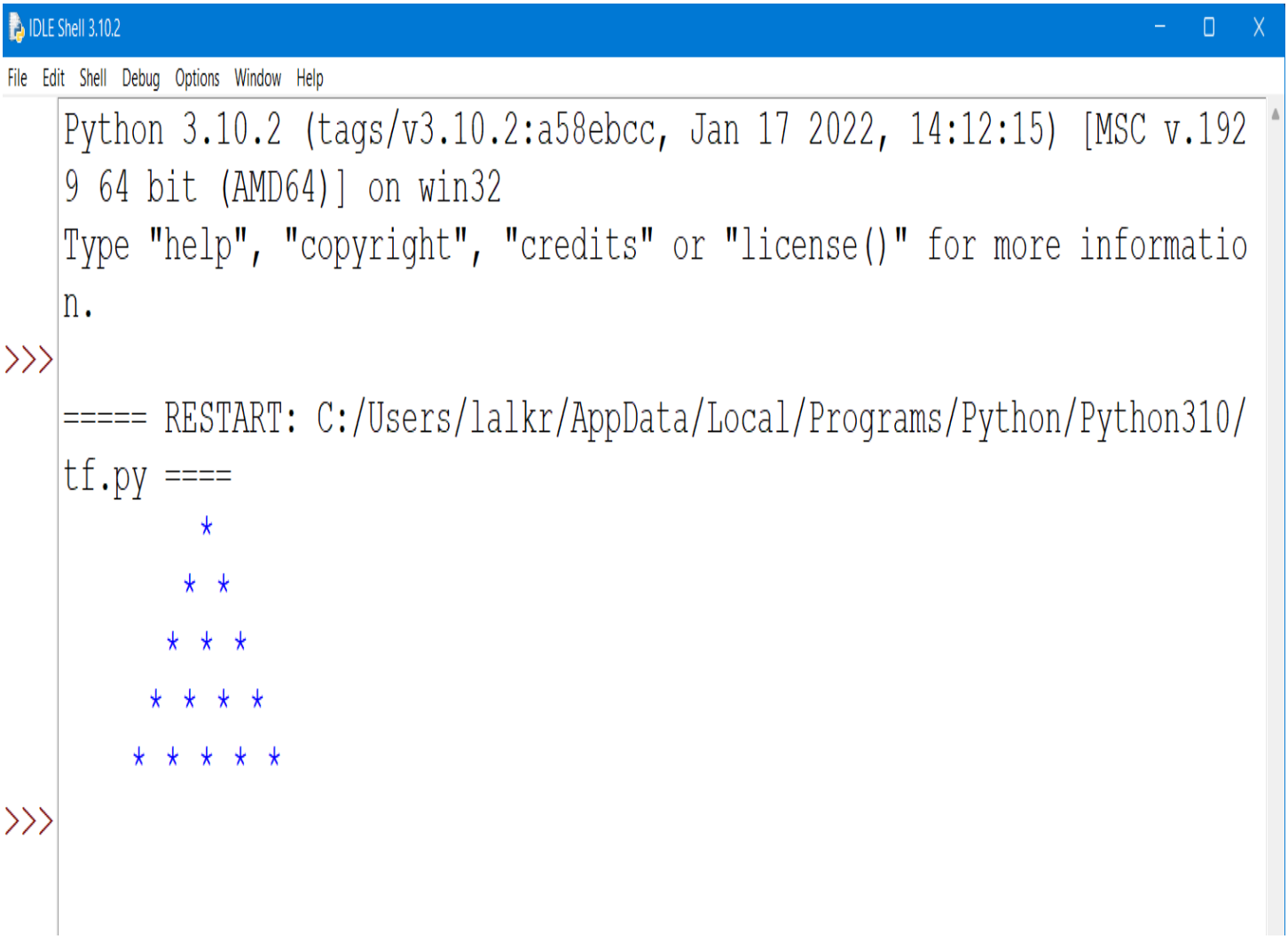

IDLE Shell 3.10.2
File Edit Shell Debug Options Window Help
Python 3.10.2 (tags/v3.10.2:a58ebcc, Jan 17 2022, 14:12:15) [MSC v.1929 64 bit (
AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: C:/Users/lalkr/AppData/Local/Programs/Python/Python310/tf.py ====
*
* *
* * *
* * * *
* * * * *
>>>

PROGRAM 9(D).

INPUT

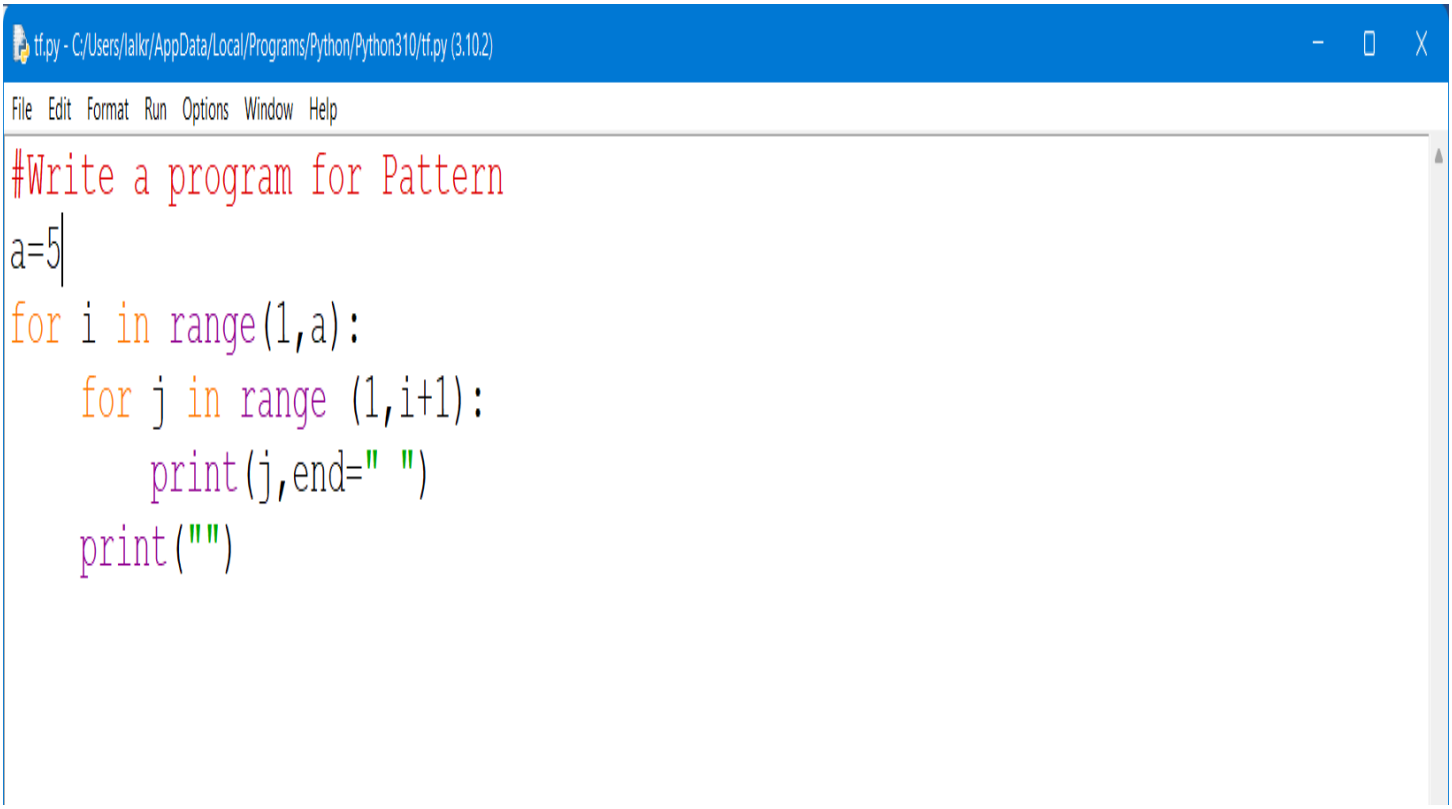


OUTPUT

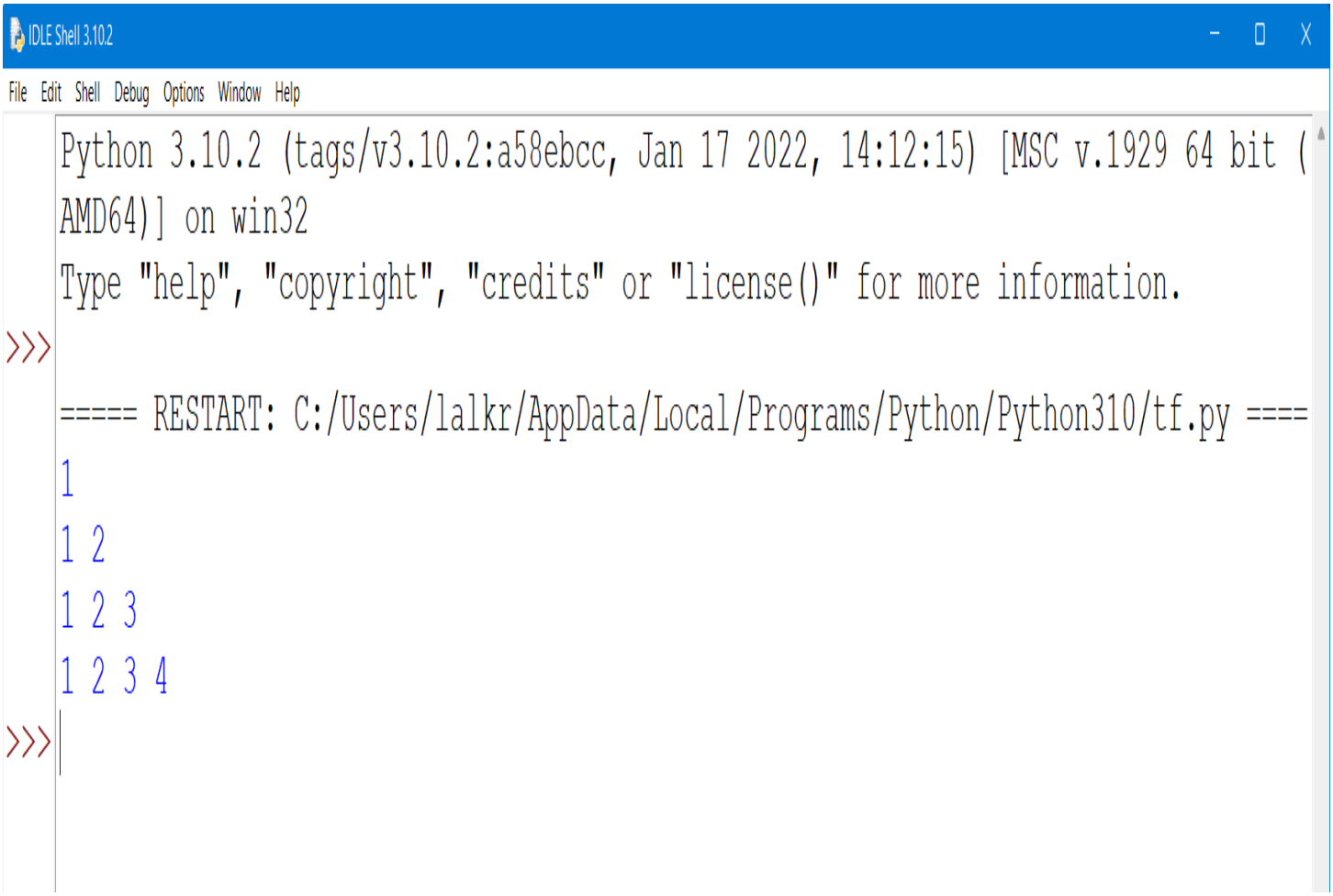

IDLE Shell 3.10.2
File Edit Shell Debug Options Window Help
Python 3.10.2 (tags/v3.10.2:a58ebcc, Jan 17 2022, 14:12:15) [MSC v.1929 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: C:/Users/lalkr/AppData/Local/Programs/Python/Python310/tf.py ====
*
* *
* * *
* * * *
* * * * *
>>>

PROGRAM 9(E).

INPUT

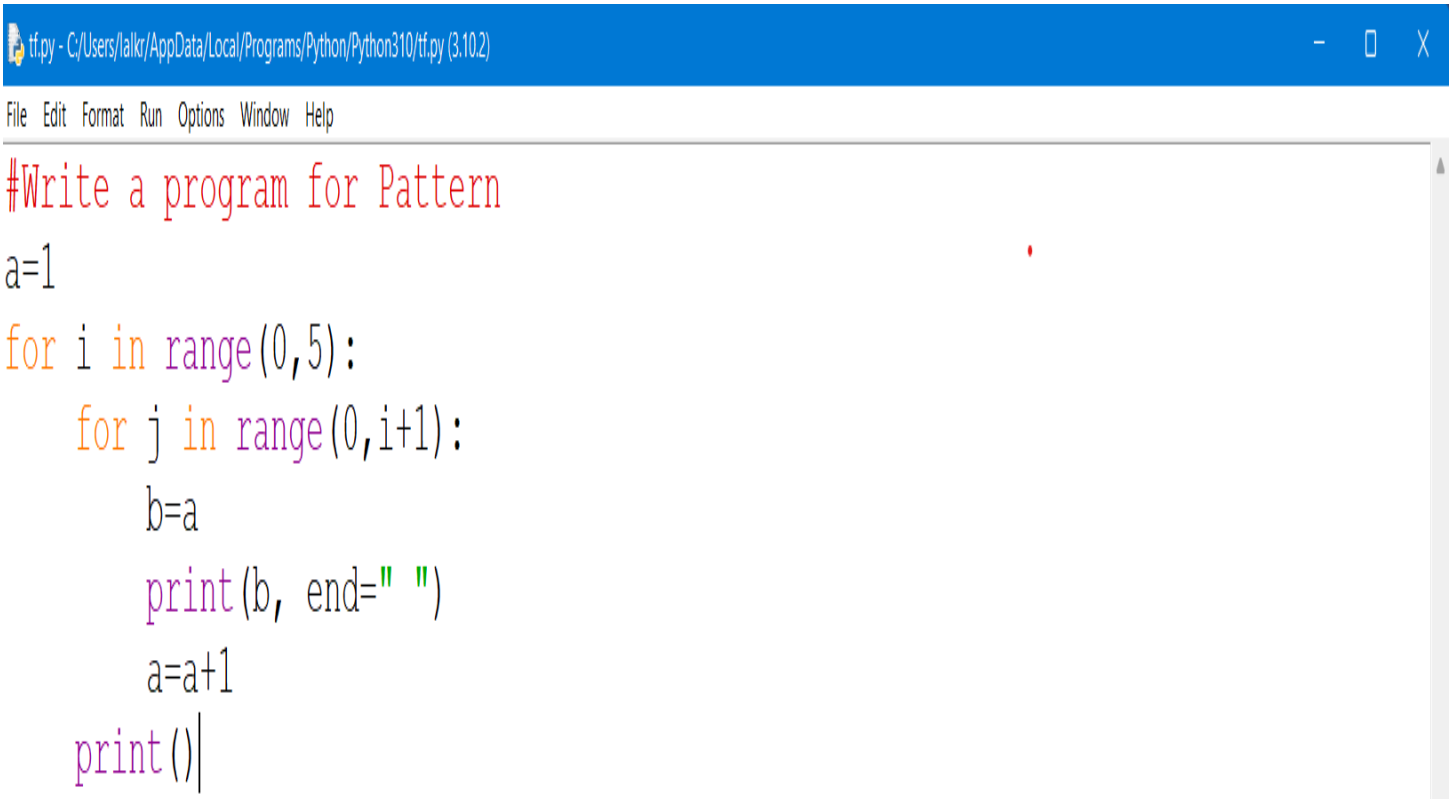


OUTPUT

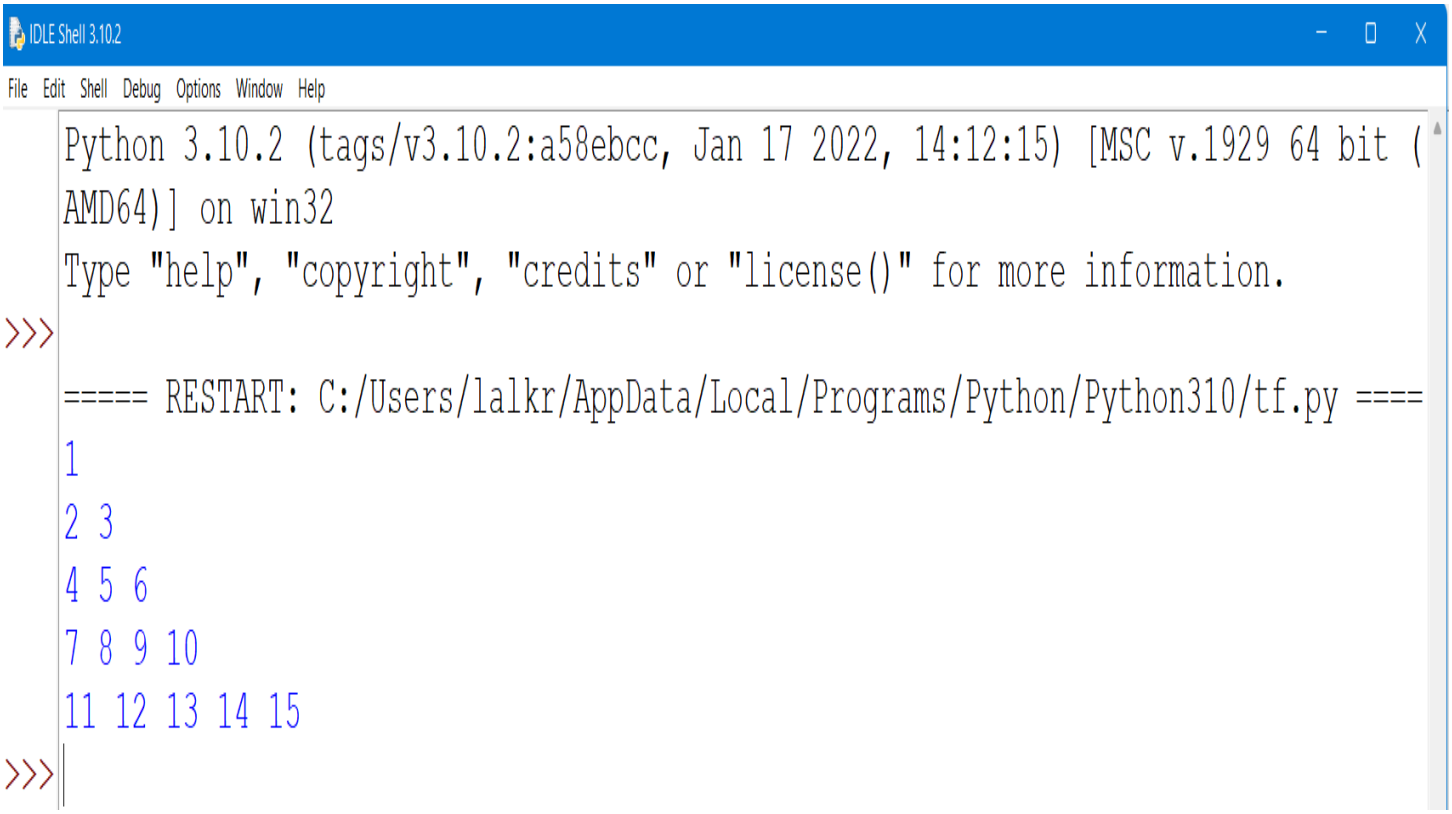

IDLE Shell 3.10.2
File Edit Shell Debug Options Window Help
Python 3.10.2 (tags/v3.10.2:a58ebcc, Jan 17 2022, 14:12:15) [MSC v.1929 64 bit (
AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: C:/Users/lalkr/AppData/Local/Programs/Python/Python310/tf.py ====
1
1 2
1 2 3
1 2 3 4
>>>

PROGRAM 9(F).

INPUT

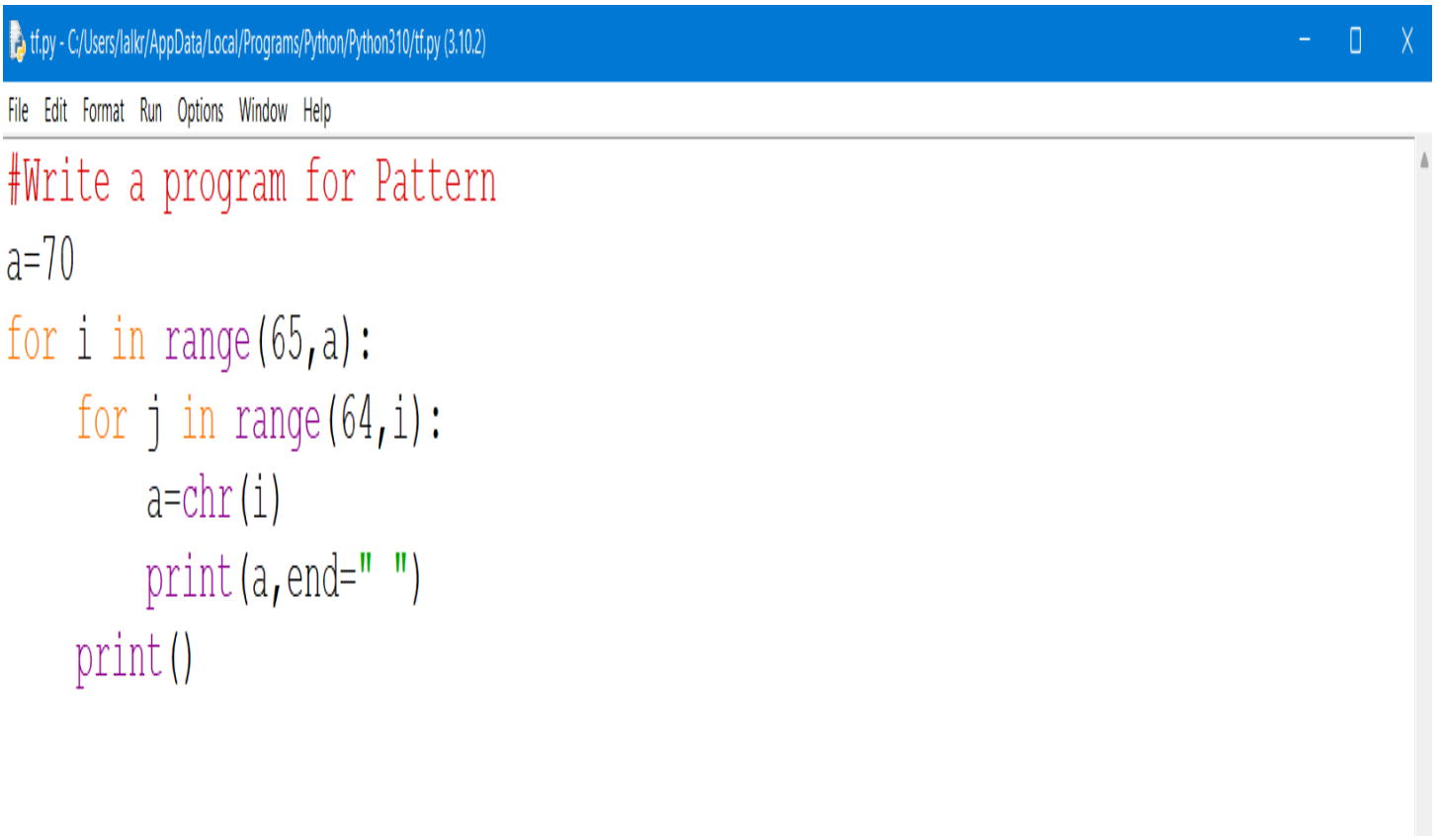


OUTPUT

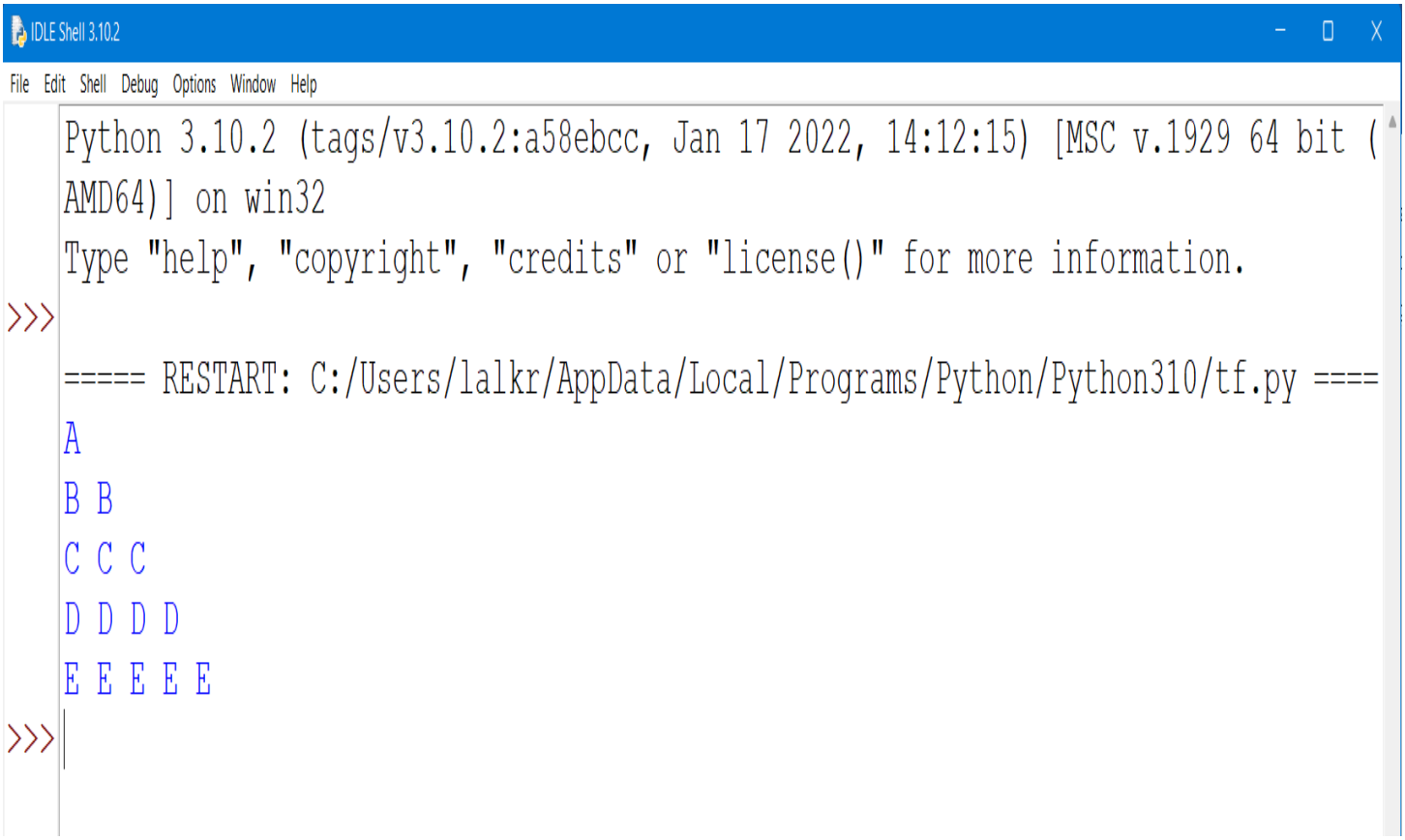

IDLE Shell 3.10.2
File Edit Shell Debug Options Window Help
Python 3.10.2 (tags/v3.10.2:a58ebcc, Jan 17 2022, 14:12:15) [MSC v.1929 64 bit (
AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: C:/Users/lalkr/AppData/Local/Programs/Python/Python310/tf.py ====
1
2 3
4 5 6
7 8 9 10
11 12 13 14 15
>>>

PROGRAM 9(G).

INPUT



OUTPUT


IDLE Shell 3.10.2
File Edit Shell Debug Options Window Help
Python 3.10.2 (tags/v3.10.2:a58ebcc, Jan 17 2022, 14:12:15) [MSC v.1929 64 bit (
AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: C:/Users/lalkr/AppData/Local/Programs/Python/Python310/tf.py ====
A
B B
C C C
D D D D
E E E E E
>>>