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Assignment 1

The due date for submitting this assignment has passed.

Due on 2020-09-30, 23:59 IST.

Assignment submitted on 2020-09-21, 12:42 IST

1) Which of the following is true about a computer program? 1 point

- (•) It is a sequence of instructions
- ( ) Instructions that are written in simple english
- ( ) There is only one universal programming language
- ( ) It is meant for only software developers

Yes, the answer is correct.
Score: 1
Accepted Answers:
It is a sequence of instructions

2) Assume you are given two images, each displaying two basic positions of situps. Identify the set of commands to perform an exercise with both images. 1 point

- ( ) Turn clockwise 90 degree / Turn clockwise -90 degrees
- ( ) Move 10 steps / Move -10 steps
- (•) Hide / Show
- ( ) point in direction 90 / point in direction -90

Yes, the answer is correct.
Score: 1
Accepted Answers:
Hide / Show

3) Choose the best command to be used at the start of your code, to locate the sprite at an initial position every time you play the animation. 1 point

- change x to val
- set x to val / set y to val
- point in direction 90
- point towards mouse pointer

No, the answer is incorrect.
Score: 0
Accepted Answers:
set x to val / set y to val

4) Assume the sprite is a ball and predict the output of the following control structure. 1 point

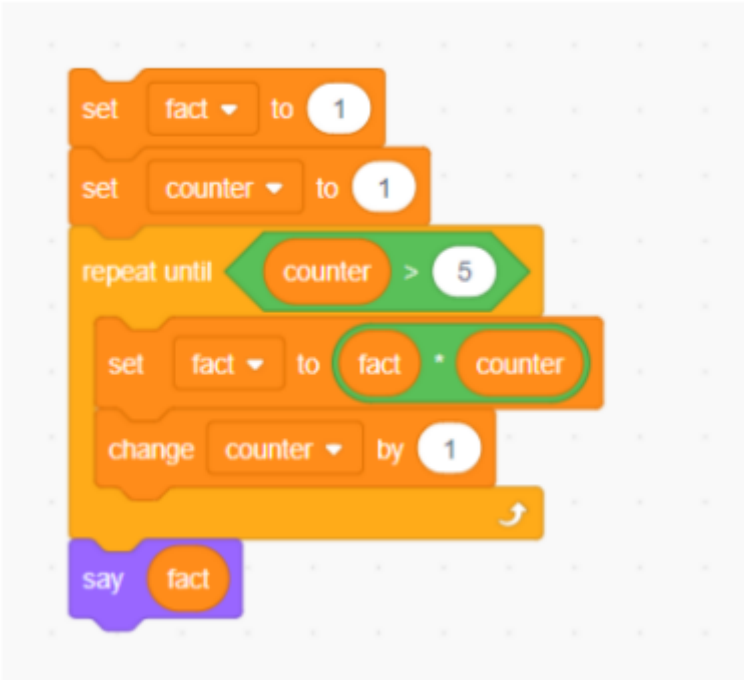
- The ball glides to a random position in 1 second
- The ball glides to 10 random positions taking 1 second to reach each position
- The ball glides to a random position and waits there for 10 seconds
- The ball glides to 10 random positions within 1 second

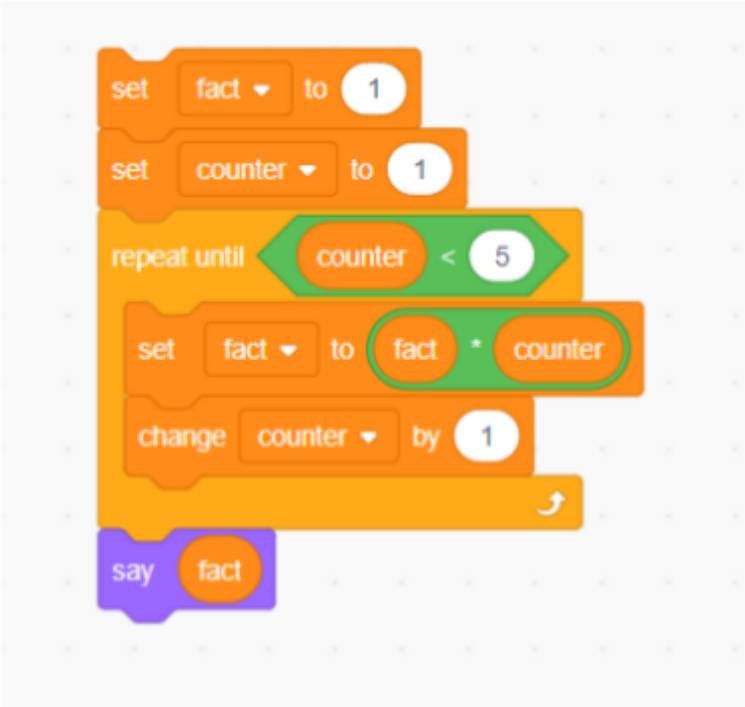
Yes, the answer is correct.
Score: 1
Accepted Answers:
The ball glides to 10 random positions taking 1 second to reach each position

5) Pick the snippet that helps the sprite to find the factorial of 5 as output. 1 point

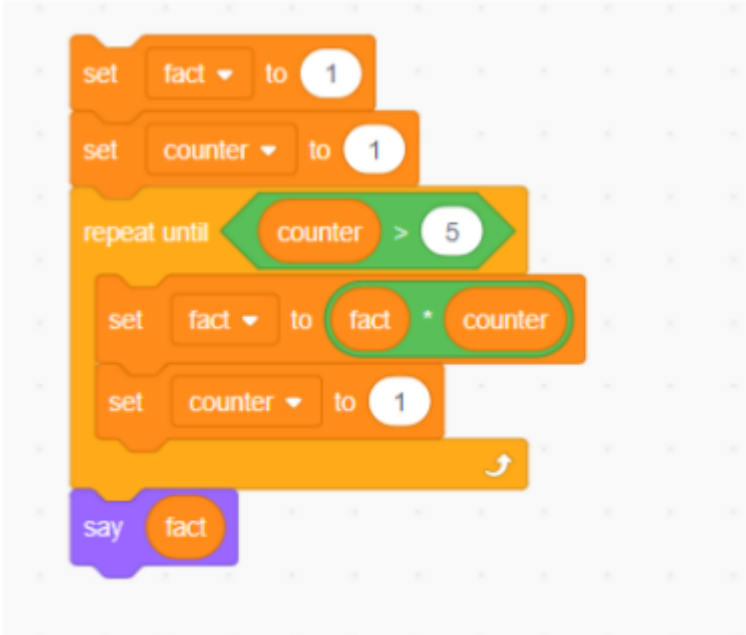
Given:

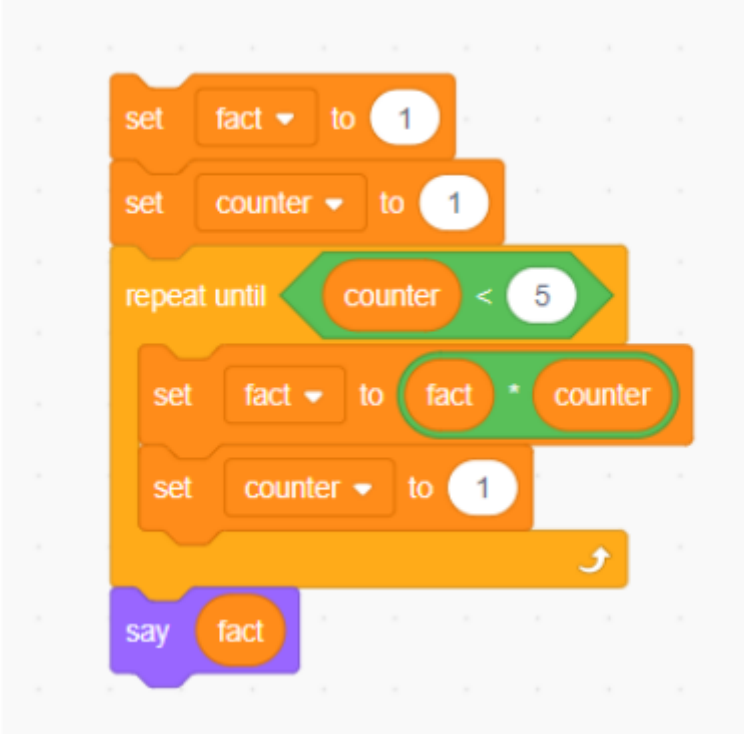
Factorial (n)=1 x 2 x 3 x .. x (n-1) x n





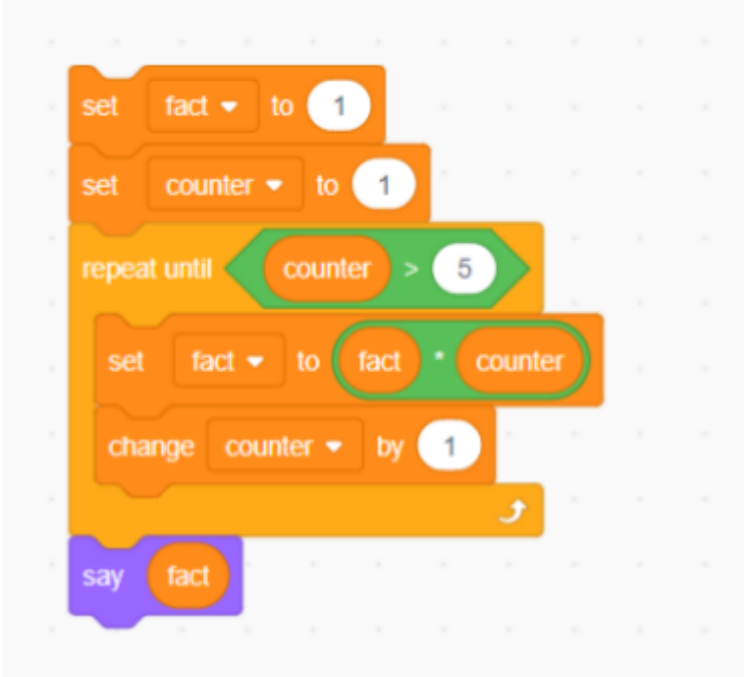
December 13 Programming test - Session 2 (8PM to 9PM)



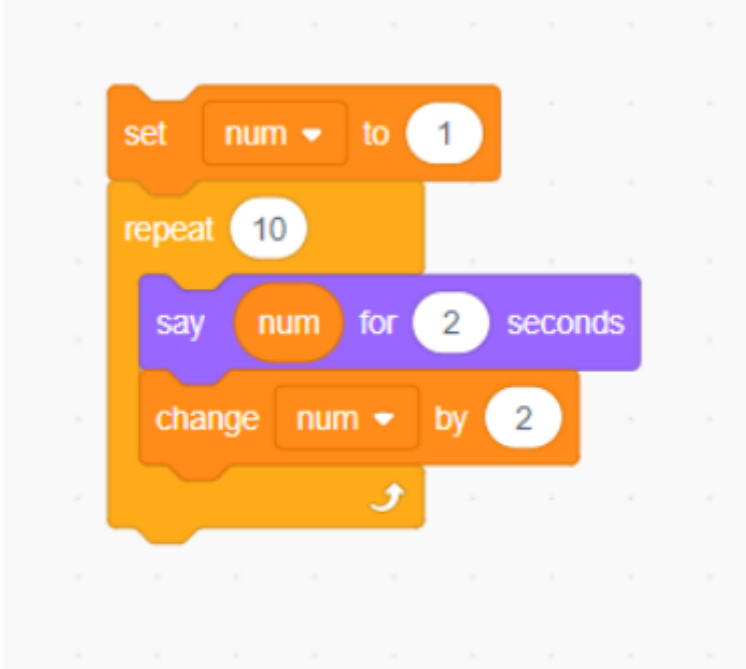


No, the answer is incorrect.
Score: 0

Accepted Answers:



6) Predict the sequence of numbers that the sprite recites: 1 point



- 1, 2, 3, . . , 19
- 1, 3, 5, . . , 19
- 3, 5, 7, . . , 19
- 1, 2, 3, . . , 20

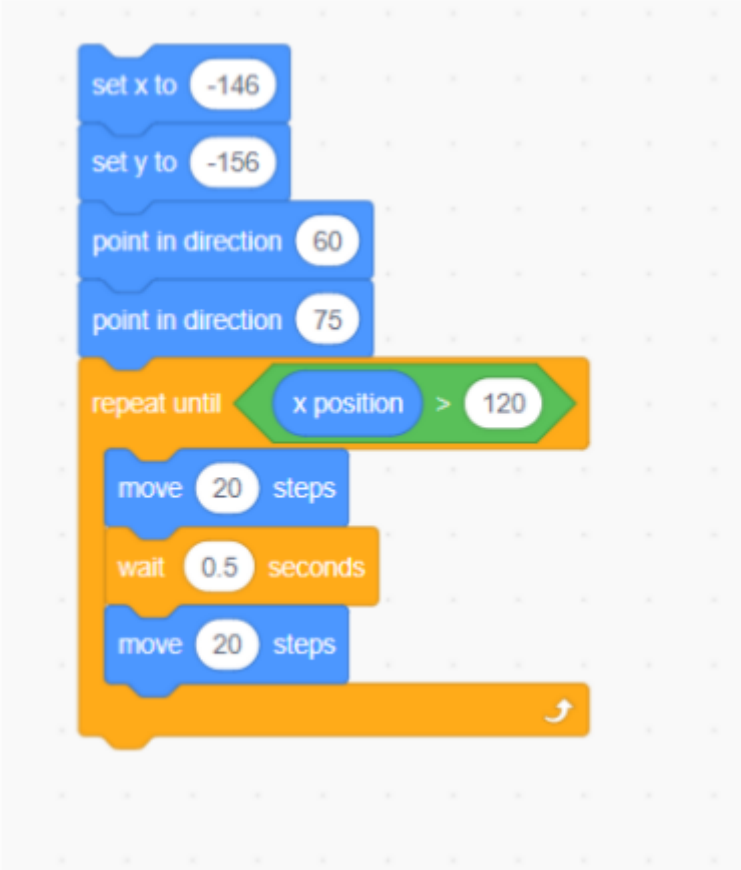
Yes, the answer is correct.
Score: 1

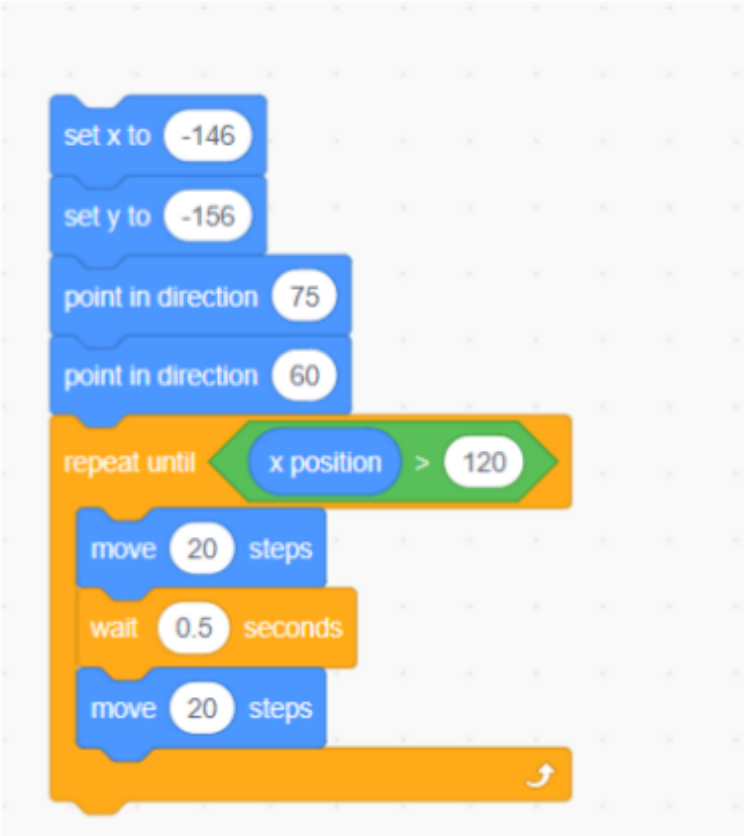
Accepted Answers:
1, 3, 5, . . , 19

7) Consider a road inclined at an angle of 30° and we have a car sprite to be driven over this road. Pick the code that helps to perform the same. 1 point

Hint: The initial direction of the sprite is 90° .

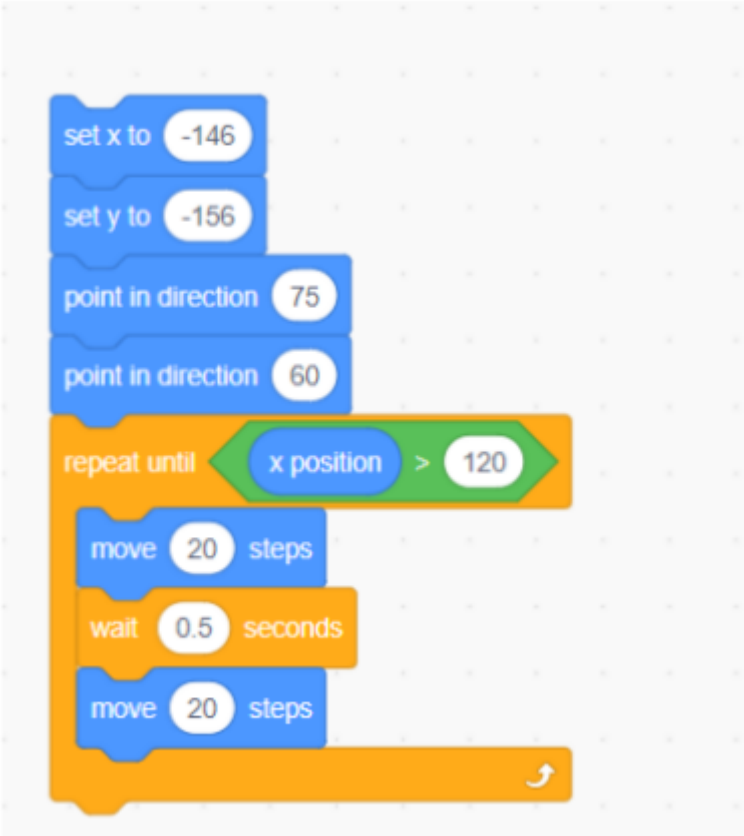

set x to -146
set y to -156
point in direction 180
point in direction 30
repeat until x position > 120
move 20 steps
wait 0.5 seconds
move 20 steps


set x to -146
set y to -156
point in direction 60
point in direction 75
repeat until x position > 120
move 20 steps
wait 0.5 seconds
move 20 steps



No, the answer is incorrect.
Score: 0

Accepted Answers:



8) Identify the command to communicate across multiple sprites. 1 point

- say message
- play sound
- Broadcast message
- touching color

Yes, the answer is correct.
Score: 1

Accepted Answers:
Broadcast message

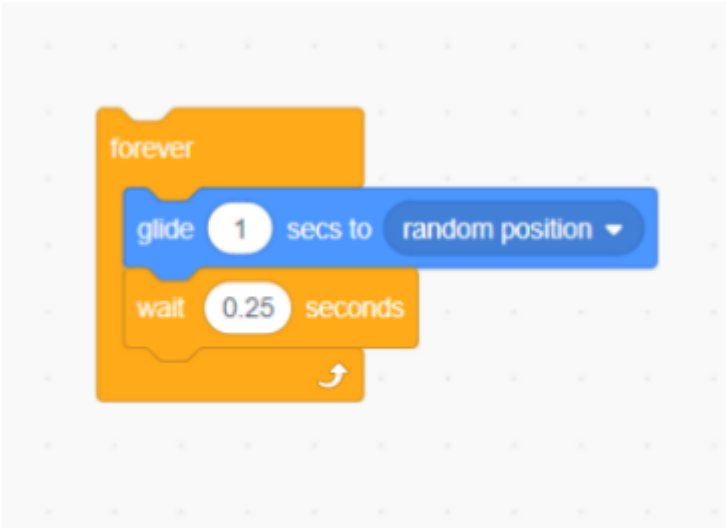
9) Pick out the scratch library that provides the functionality to switch backdrop? 1 point

- Motion
- Control
- Looks
- Sensing

Yes, the answer is correct.
Score: 1

Accepted Answers:
Looks

10) Imagine a Magic wand sprite and predict the output for the following set of instructions. 1 point



- The Magic wand flies to a random position takes 1 sec pause and then reaches another random position.
- The Magic wand flies to a random position in 1 sec and after a 0.25 sec pause, it repeats the same until it is stopped.
- The Magic wand reaches all edges of the screen in a uniform pattern
- The Magic wand flies between the top and bottom edges repeatedly.

Yes, the answer is correct.
Score: 1

Accepted Answers:
The Magic wand flies to a random position in 1 sec and after a 0.25 sec pause, it repeats the same until it is stopped.

Assignment 2

The due date for submitting this assignment has passed. **Due on 2020-09-30, 23:59 IST.**

Assignment submitted on 2020-09-29, 21:16 IST

NOTE: Python 3.7 has been used for this Assignment

Identify the statement with an invalid syntax. Expected Output: Stay Safe! Friends ***1 point***

- print(“Stay Safe!”,“Friends”)
- print(“Stay Safe! Friends”)
- print(‘Stay Safe! Friends’)
- print(Stay Safe Friends)

Yes, the answer is correct.
Score: 1

Accepted Answers:
print(Stay Safe Friends)

Predict the output for the following code that checks the eligibility to vote. ***1 point***

```
age=19
if age>=18
        print('Hey! You are eligible to vote')
else:
        print('OOPS! You are not eligible to vote')
```

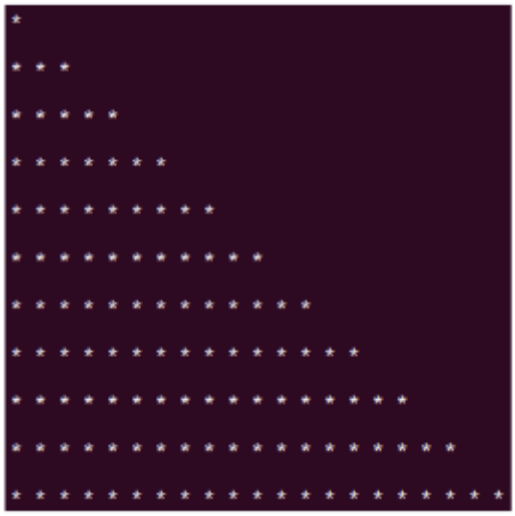
- Hey! You are eligible to vote
- OOPS! You are not eligible to vote
- Syntax Error: invalid syntax
- Invalid age

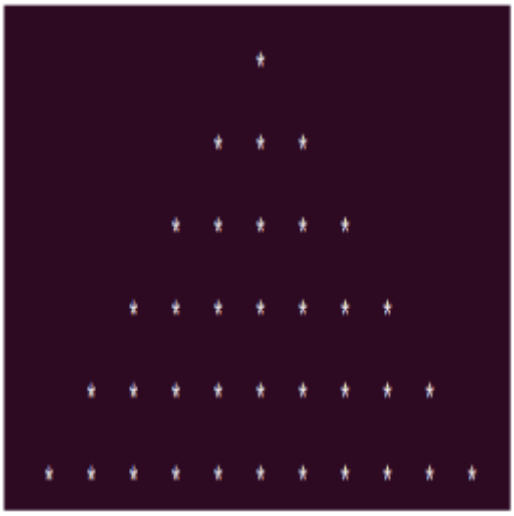
No, the answer is incorrect.
Score: 0

Accepted Answers:
Syntax Error: invalid syntax

What is the output of the following code? ***0 points***

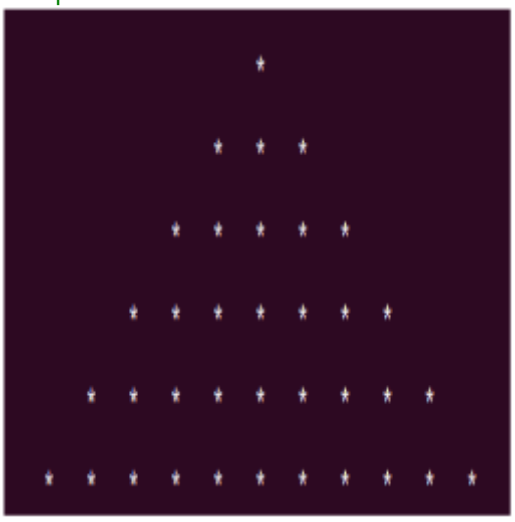
```
def func():
        print()
        c=10
        i=0
        while(i<=5):
                j=1
                while(j<=20):
                        print(' ',end=' ')
                        if(j>=10-i and j<=10+i):
                                print('*',end=" ")
                        else:
                                print(' ',end=" ")
                        j=j+1
                print('\n')
                i=i+1
func()
```





Yes, the answer is correct.
Score: 0

Accepted Answers:



With n as input, the code below computes **0 points**

```
def mul(num):
        if(num==1):
                return(-1)
        return(-1*mul(num-1))
n=int(input("Enter the value of n"))
print(mul(n))
```

- $-1 \times n$ −1×n
- $-1 + n$ −1+n
- $(-1)^n$ (−1)n
- $n^{(-1)}$ n(−1)

Yes, the answer is correct.
Score: 0

Accepted Answers:
$(-1)^n$ (−1)n

For the given code, what is the value of ‘total’ variable at the end of execution? **1 point**

```
m1 = '98'
m2 = '79'
m3 = '87'
total = m1 + m2 + m3
print(total)
```

- syntax error
- 264
- 988779
- 987987

Yes, the answer is correct.
Score: 1

Accepted Answers:
987987

Replace the given set of instructions with a for loop. **1 point**

```
n=2
print(n)
n=n*2
print(n)
n=n*2
print(n)
n=n*2
print(n)
n=n*2
print(n)
```

-
```
for i in range(1,6):
print(pow(2,i))
```

-
```
for i in range(1,6):
        print(pow(i,2))
```

-
```
for i in range(1,6):
        print(pow(2,i))
```

-
```
for i in range(1,5):
        print(pow(2,i))
```

Yes, the answer is correct.
Score: 1

Accepted Answers:

```
for i in range(1,6):
        print(pow(2,i))
```

Which of the following is the output for the given code? ***1 point***

```
n=5;print(n+5);print(n+5);print(n+5);print(n+5);
```

- 10 10 10 10
- 5 10 15 20
- 10
  10
  10
  10
  5
- 10
  15
  20

Yes, the answer is correct.
Score: 1

Accepted Answers:

```
10
10
10
10
```

Identify the appropriate output. ***1 point***

```
name='Avani Chaturvedi!'
print('Hello!', name, 'How are you?')
print('Proud to meet you!')
```

- Hello! Avani Chaturvedi! How are you? Proud to meet you!
- Hello! Avani Chaturvedi!
  How are you?
  Proud to meet you!
- Hello!
  Avani Chaturvedi!
  How are you?
  Proud to meet you!
- Hello! Avani Chaturvedi! How are you?
  Proud to meet you!

Yes, the answer is correct.
Score: 1

Accepted Answers:
Hello! Avani Chaturvedi! How are you?
Proud to meet you!

What happens if we key in number 5 for the variable c in the below code? ***1 point***

```
c=1
while(c==1):
        print('hello')
        c=int(input('Enter choice:0/1:'))
```

- Loop terminates
- Continues execution
- Program restarts execution
- None of the above

Yes, the answer is correct.
Score: 1

Accepted Answers:
Loop terminates

What is the output of the following code? ***1 point***

```
d=-20
while(d>0):
    print(d)
if(d<0):
    print(-1*d)
```

- Infinite loop
- -20 20
- 20
- -20

Yes, the answer is correct.
Score: 1

Accepted Answers:
20

Assignment 3

The due date for submitting this assignment has passed. **Due on 2020-10-07, 23:59 IST.**

Assignment submitted on 2020-10-07, 23:54 IST

NOTE: Python 3.7 has been used for this Assignment

What is the expected output for the following code? ***1 point***

```
cart=['coffee','sugar','cheese','butter']
for item in cart:
        if item=='sugar':
                print('jaggery')
        else:
                print(item)
```

- [' coffee ' , ' jaggery ' , ' cheese ' , ' butter ']
- [' coffee ' , ' sugar ' , ' cheese ' , ' butter ']
- coffee
  jaggery
  cheese
  butter
- coffee jaggery cheese butter

Yes, the answer is correct.
Score: 1

Accepted Answers:
coffee
jaggery
cheese
butter

Which of the following code prints the sum of weights of people in the lift? ***1 point***

```
sum=0
weights=[97, 52, 65, 43, 77]
for w in weights:
        sum=sum+w
print(sum)
```

```
sum=0
weights=[97, 52, 65, 43, 77]
for w in range(len(weights)):
        sum=sum+w
print(sum)
```

```
sum=0
weights=[97, 52, 65, 43, 77]
for w in weights:
sum=sum+w
print(sum)
```

```
sum=0
weights=[97, 52, 65, 43, 77]
for w in weights:
        sum=w
print(sum)
```

Yes, the answer is correct.
Score: 1

Accepted Answers:

```
sum=0
weights=[97, 52, 65, 43, 77]
for w in weights:
        sum=sum+w
print(sum)
```

Consider a python list named ‘book titles’. Pick the statement to add ‘Who moved my cheese?’ as the third item. ***1 point***
Given: book titles = [‘Exam Warriors’, ‘Evil in the Mahabharata’, ‘6 TIMES THINNER’, ‘The Driver in the Driverless Car’, ‘Evolution’]

- book titles.append(2,‘Who moved my cheese?’)
- book titles.insert(2,‘Who moved my cheese?’)
- book titles.insert(3,‘Who moved my cheese?’)
- book titles.append(3,‘Who moved my cheese?’)

Yes, the answer is correct.
Score: 1

Accepted Answers:
book titles.insert(2,‘Who moved my cheese?’)

Pick the relevant output for the given code. ***1 point***

```
n=[1,4,2,8,21,17]
n.reverse()
print(n)
```

- [1, 2, 4, 8, 17, 21]
- [21, 17, 8, 4, 2, 1]
- [17, 21, 8, 2, 4, 1]
- [1, 4, 2, 8, 21, 17]

Yes, the answer is correct.
Score: 1

Accepted Answers:
[17, 21, 8, 2, 4, 1]

Specify the purpose of ‘break’ statement inside a nested loop. ***1 point***

- Ends execution of the program
- Ends execution of the outermost loop
- Skips the current iteration of the loop
- Ends the execution of the loop

No, the answer is incorrect.
Score: 0

Accepted Answers:
Ends the execution of the loop

You are given a list, ‘marks’ scored by 30 students. Identify the instruction to find the 2% trimmed mean for the given data. ***1 point***

- m=stats.trim_mean(marks,0.2)
- m=stats.trim_mean(marks,0.03)
- m=stats.trim_mean(30,0.02)
- m=stats.trim_mean(marks,0.02)

Yes, the answer is correct.
Score: 1

Accepted Answers:
m=stats.trim_mean(marks,0.02)

How will you simulate ‘Rolling a Dice’ with six faces by making use of ‘random’ library? ***1 point***

- roll= random.choice(1,2,3,4,5,6)
- roll= random.range(1,5)
- roll= random.randint(1,6)
- roll= random.random(6)

Yes, the answer is correct.
Score: 1

Accepted Answers:
roll= random.randint(1,6)

Consider a python list named ‘book_titles’. ***1 point***
Given: book_titles = [‘Exam Warriors’, ‘Evil in the Mahabharata’, ‘6 TIMES THINNER’, ‘The Driver in the Driverless Car’, ‘Evolution’]

What is the output for the following operation?

book_titles[4:]

- [‘Evolution’]
- [‘Exam Warriors’,‘Evil in the Mahabharata’, ‘6 TIMES THINNER’, ‘The Driver in the Driverless Car’]
- [ ]
- [‘Exam Warriors’, ‘Evil in the Mahabharata’, ‘6 TIMES THINNER’]

Yes, the answer is correct.
Score: 1

Accepted Answers:
[‘Evolution’]

Assuming, there is no file named ‘file.txt’ on my computer, what does the following code do? ***1 point***

```
with open('file.txt','w') as f:
        f.write('Hey! I am writing.');
f.close()
with open('file.txt','w') as f:
        f.write('Hey I am writing the second line.');
f.close()
with open('file.txt','r') as f:
        print(f.read())
f.close()
```

- Shows error
- Displays: Hey I am writing the second line
- Displays: Hey! I am writing.Hey I am writing the second line.
- Displays: Hey! I am writing.

Yes, the answer is correct.
Score: 1

Accepted Answers:
Displays: Hey I am writing the second line

Predict the output **1 point**

```
my_para='i am to go to KT in A'
print(list(my_para))
```

- ['i', ' ', 'a', 'm', ' ', 't', 'o', ' ', 'g', 'o', ' ', 't', 'o', ' ', 'K', 'T', ' ', 'i', 'n', ' ', 'A']
- ['i', 'a', 'm', 't', 'o', 'g', 'o', 't', 'o', 'K', 'T', 'i', 'n', 'A']
- ['i', 'am', 'to', 'go', 'to', 'KT', 'in', 'A']
- ['i', ' ', 'am',' ', 'to',' ', 'go',' ', 'to',' ', 'KT',' ', 'in',' ', 'A']

Yes, the answer is correct.
Score: 1

Accepted Answers:

```
['i', ' ', 'a', 'm', ' ', 't', 'o', ' ', 'g', 'o', ' ', 't', 'o', ' ', 'K', 'T', ' ', 'i', 'n', ' ', 'A']
```

Assignment 4

The due date for submitting this assignment has passed. **Due on 2020-10-14, 23:59 IST.**

Assignment submitted on 2020-10-14, 21:33 IST

NOTE: Python 3.7 has been used for this Assignment

Which statement can be used to come out of an infinite loop? ***1 point***

- continue
- break
- try
- catch

Yes, the answer is correct.
Score: 1

Accepted Answers:
break

You are supposed to code your 'To do' list that contains all the activities that you plan to perform in a day. Assume you recharged your mobile and want to delete it from the list. Identify the statement to perform the same.
Given: to_do=['Send Email', 'Recharge Mobile', 'Workshop preparation'] ***1 point***

- to_do.delete("Recharge Mobile ")
- to_do.clear("Recharge Mobile")
- to_do.remove("Recharge Mobile")
- to_do.pop()

Yes, the answer is correct.
Score: 1

Accepted Answers:
to_do.remove("Recharge Mobile")

Simulate a 'Lot Box' that contains all alphabets from 'A' to 'Z'. Draw and Display. ***0 points***

- print(random.choice(list(string.ascii_letters)))
- print(random.choice(list(string.ascii_uppercase)))
- print(random.choice(list(string.ascii_lowercase)))
- print(random.choice(string.ascii_uppercase))

Yes, the answer is correct.
Score: 0

Accepted Answers:
print(random.choice(list(string.ascii_uppercase)))

The following snippet produces TypeError: int object not callable. Pick out the correct code. ***1 point***
r e s u l t=a (b+(c * * 2)) where a , b **and** c a r e **any** i n t e g e r s

- result=ax(b+(c**2))
- result=a//(b+(c**2))
- result=a*(b+(c**2))
- result=a.(b+(c**2))

Yes, the answer is correct.
Score: 1

Accepted Answers:
result=a(b+(c**2))*

How will you display the current date in 'mm/dd/yy' format? ***1 point***

- print(datetime.datetime.now().strftime('%c'))
- print(datetime.datetime.now().strftime('%B'))
- print(datetime.datetime.now().strftime('%C'))

print(datetime.datetime.now().strftime('%x'))

Yes, the answer is correct.
Score: 1

Accepted Answers:
print(datetime.datetime.now().strftime('%x'))

What does the following code do? ***0 points***

```
s1=input('Enter a string')
s2=input('Enter another string')
for each in list(s2):
        for each2 in list(s1):
                if(each==each2):
                        print(`yes')
                        break
```

prints yes if both strings are same
prints yes if both strings have atleast one common character
prints yes if first string is contained in the second
none of the above

Yes, the answer is correct.
Score: 0

Accepted Answers:
prints yes if both strings have atleast one common character

What does the following function do? ***1 point***

```
def leap(year):
        if(year % 400 == 0 or (year % 100 != 0 and year % 4 == 0)):
                return 1
        else:
                return 0
```

returns true for century year and false for non century year
returns true for leap year and false for non leap year
returns false for century year and true for non century year
none of the above

Yes, the answer is correct.
Score: 1

Accepted Answers:
returns true for leap year and false for non leap year

Given a $n \times n$ n×n square matrix mx in the form of list of lists in figure, what is the output of the statement func(mx,2) given n=7? ***1 point***


```
def func(mx,i):
        for ind in range(i,n-i):
                print(mx[i][ind],end=' ')
        for ind in range(i+1,n-i):
                print(mx[ind][n-1-i],end=' ')
        for ind in range(n-2-i,i,-1):
                print(mx[n-1-i][ind],end=' ')
        for ind in range(n-i-1,i,-1):
                print(mx[ind][i],end=' ')
```

- 3 2 1 8 5 6 7 6
- 3 2 1 6 7 8 7 6 5
- 3 2 1 1 8 5 5 6 7 7 6 3
- 3 6 7 7 7 2 1 8 5

Yes, the answer is correct.
Score: 1

Accepted Answers:
3 2 1 8 5 6 7 6

Pick out the snippet to perform integer division. ***1 point***

- a // b
- a / b
- a mod b
- a % b

Yes, the answer is correct.
Score: 1

Accepted Answers:
a // b

Pick out the valid function call to the definition given below: ***1 point***

```
def is_participating(name,participants):
        c=participants.count(name)
        if c==0:
                return(False)
        else:
                return(True)
```

- is_participating(‘Raji’,‘Shiva’,‘Raji’,‘Priya’)
- is_participating(‘Raji’,[‘Shiva’,‘Raji’,‘Priya’])
- is_participating[‘Raji’,{‘Shiva’,‘Vani’,‘Priya’}]
- is_participating(’Raji’,{‘Shiva’,‘Raji’,‘Priya’})

Yes, the answer is correct.
Score: 1

Accepted Answers:
is_participating(‘Raji’,[‘Shiva’,‘Raji’,‘Priya’])

Assignment 5

The due date for submitting this assignment has passed. **Due on 2020-10-21, 23:59 IST.**

Assignment submitted on 2020-10-21, 23:42 IST

NOTE: Python 3.7 has been used for this Assignment

Select the command to empty or reset the 'employee' dictionary. ***1 point***

- del employee
- del employee[0:2]
- employee.remove()
- employee.clear()

Yes, the answer is correct.
Score: 1

Accepted Answers:
employee.clear()

Which of the following code represents creating a dictionary from a list where keys are the unique elements from the list and the value corresponding to a key is the number of times that key occurs in the list. ***1 point***

```
dict1={}
list1=[1,2,4,5,3,2,4,5,6,7,8,1,2,3,4,6,9,10]
for each in list1:
        if each not in dict1:
                dict1[each]=1
        else:
                dict1[each]=dict1[each]+list1.count(each)
print(dict1)
```

```
dict1={}
list1=[1,2,4,5,3,2,4,5,6,7,8,1,2,3,4,6,9,10]
for each in list1:
        if each not in dict1:
                dict1[each]=0
        else:
                dict1[each]=dict1[each]+list1.count(each)
print(dict1)
```

```
dict1={}
list1=[1,2,4,5,3,2,4,5,6,7,8,1,2,3,4,6,9,10]
for each in list1:
        if each not in dict1:
                dict1[each]=1
        else:
                dict1[each]=dict1[each]+1
print(dict1)
```

- none of these

Yes, the answer is correct.
Score: 1

Accepted Answers:

```
dict1={}
list1=[1,2,4,5,3,2,4,5,6,7,8,1,2,3,4,6,9,10]
for each in list1:
        if each not in dict1:
                dict1[each]=1
        else:
                dict1[each]=dict1[each]+1
print(dict1)
```

Identify the audio file format that is NOT supported by Python Speech Recognition Module. ***1 point***

- FLAC
- AIFF
- WAV
- MP3

Yes, the answer is correct.
Score: 1

Accepted Answers:
MP3

Which of the following exception can be used to handle the error that occurs when Google cannot understand the audio content in speech recognition? ***1 point***

- UnknownValueError
- RequestError
- ValueError
- RunTimeError

Yes, the answer is correct.
Score: 1

Accepted Answers:
UnknownValueError

Which of the following statements is correct for the Monte Hall problem? ***1 point***

Statement I: If you choose the correct door on the first try, then switching loses
Statement II: Contestants who switch have 2/3 chances to win whereas contestants who donot switch have 1/3 chances of win.

- I only
- II only
- Both I & II
- None

Yes, the answer is correct.
Score: 1

Accepted Answers:
Both I & II

Which of the random experiments from the options does the code represent? ***1 point***

```
import random
p1=['rock','paper','scissor']
p2=['rock','paper','scissor']
c1=random.choice(p1)
c2=random.choice(p2)
if(c1==c2):
        print('SUCCESS')
else:
        print('FAIL')
```

- Prints a success when both people select the same object
- Prints a success when both people select “rock”
- Prints a success when both people select different objects
- None of the above

Yes, the answer is correct.
Score: 1

Accepted Answers:
Prints a success when both people select the same object

What does the following code represent? ***1 point***

```
import random
x=0
y=0
while(1):
        r = random.uniform(0,1)
        if (r<0.4):
                x=x+1
        elif (r<0.8):
                y=y+1
        else:
                x=x+1
                y=y+1
        print 'location=(',x,',',y,')'
        input("enter a key to continue")
```

- A drunkard moving on a straight line, moving one step forward with probability 0.4, one step backward with probability 0.4 and staying at the same place with probability 0.2
- A drunkard moving on a XY plane, moving right with probability 0.4, upwards with probability 0.8 and diagonally up-right with probability 1.
- A drunkard moving on a XY plane, moving right with probability 0.4, upwards with probability 0.4 and diagonally up-right with probability 0.2.
- A drunkard moving on a XY plane, moving left with probability 0.4, downwards with probability 0.8 and diagonally down-left with probability 1.

Yes, the answer is correct.
Score: 1

Accepted Answers:
A drunkard moving on a XY plane, moving right with probability 0.4, upwards with probability 0.4 and diagonally up-right with probability 0.2.

The following code takes a list as input and prints the sorted list as an output. The outer for loop is to count the number of iterations. What is the purpose of the inner for loop? ***1 point***

```
def bubble(mylist):
        n=len(mylist)
        for i in range(n):
                for j in range(0,n-i-1):
                        if mylist[j]>mylist[j+1]:
                                mylist[j],mylist[j+1]=mylist[j
                                    +1] ,mylist[j]
        print(mylist)
```

- To fetch the pair of consecutive elements to be compared
- Index of the element for which the right position is to be found
- To identify the max element
- To check if the list is sorted

No, the answer is incorrect.
Score: 0

Accepted Answers:
To fetch the pair of consecutive elements to be compared

The following code to its best, represents a scenario: ***1 point***

```
def func(i,f):
        print(i)
        if(i==0):
                f=1
                func(i+1,f)
        if(i==128):
                f=-1
                func(i-1,f)
        if(f==1):
                func(i+1,f)
        if(f==-1):
                func(i-1,f)
```

- A cake getting eaten by half of its current amount every time
- A student attempting alternate questions, starting from a given question
- Viruses doubling inside a body and killing the person once their population becomes 128 or more.
- Metro train serving 128 stations to and from

Yes, the answer is correct.
Score: 1

Accepted Answers:
Metro train serving 128 stations to and from

Given that you have a sorted list of 1000 elements and the element to find is at the end of your list(worst case), ***1 point***
what is the number of comparisons to search such an element using linear search and binary search?

- 1000, 10
- 10, 2
- 1000, 2
- 10, 10

Yes, the answer is correct.
Score: 1

Accepted Answers:
1000, 10

Assignment 6

The due date for submitting this assignment has passed. **Due on 2020-10-28, 23:59 IST.**

Assignment submitted on 2020-10-28, 21:30 IST

NOTE: Python 3.7 has been used for this Assignment

Look at the following functions. ***1 point***

```
import random
import string

def create_encryption_key(string1):
    chars=list(set(list(string1)))
    keydict={}
    taken =[]
    for each in chars:
        while(1):
            r=random.choice(chars)
            if(r not in taken) :
                keydict[each]= r
                taken.append(r)
                break
    return(keydict)

def reverse(d):
    d1={}
    for each in d :
        d1[d[each]]= each
    return d1

def encrypt(letter,key):
    l=[]
    for i in range(0,len(letter)):
        l.append(key[letter[i]])
    return(l)
```

Which of the following set of statements correctly represent encryption and decryption using substitution cipher?
It is also given that the set of characters for substitution is chosen from the plain text.

```
plain_text=input("Enter the string you want to encrypt")
key=create_encryption_key(plain_text)
cipher_list= encrypt(plain_text,key)
cipher_text=(‘ ’.join(cipher_list))
plain_list= encrypt(cipher_list,reverse(key))
plain_text= (‘ ’.join(plain_list))
```

```
plain_text=input("Enter the string you want to encrypt")
key=create_encryption_key(plain_text)
cipher_list= encrypt(plain_text,key)
cipher_text=(‘ ’.join(cipher_list))
plain_list= encrypt(cipher_list,key)
plain_text= (‘ ’.join(plain_list))
```

```
plain_text=input("Enter the string you want to encrypt")
key=create_encryption_key(plain_text)
```

cipher_list= encrypt(plain_text,key)
cipher_text=(‘ ’.join(cipher_list))
plain_list= encrypt(plain_list,reverse(key))
plain_text= (‘ ’.join(plain_list))

- None of the above

Yes, the answer is correct.
Score: 1

Accepted Answers:
plain_text=input("Enter the string you want to encrypt")
key=create_encryption_key(plain_text)
cipher_list= encrypt(plain_text,key)
cipher_text=(‘ ’.join(cipher_list))
plain_list= encrypt(cipher_list,reverse(key))
plain_text= (‘ ’.join(plain_list))

Assuming, there is no file named 'file.txt' on my computer, what does the following code do? ***1 point***

```
with open('file.txt','w') as f:
    print(f.read())
        f.write('Hey! I am writing');
f.close()
```

- Creates a file named file.txt and adds ‘Hey! I am writing’ to it
- Shows an error because file does not exist
- shows an error because file in not opened in the reading mode
- None of the above

No, the answer is incorrect.
Score: 0

Accepted Answers:
None of the above

What does the function ’confidential’ do? ***1 point***

```
def confidential(mob_num):
        subs_dict={}
        sec_num=[0] * len(mob_num)
        for i in range(len(string.digits)):
            subs_dict[string.digits[i]]=string.digits[i-1]
        for j in range(len(mob_num)):
            sec_num[j]=subs_dict[mob_num[j]]
        return(sec_num)
```

- Generates the secret code for the given mobile number with every digit coded with the next digit.
- Generates the secret code for the given mobile number with every digit coded with the previous digit.
- Generates the secret code for the given mobile number with every digit coded with a random digit.
- Generates the secret code for the given mobile number with every digit coded with a special character.

Yes, the answer is correct.
Score: 1

Accepted Answers:
Generates the secret code for the given mobile number with every digit coded with the previous digit.

What is the output for the given code? ***1 point***

```
import numpy
mat=numpy.array([[1,2,3],[4,5,6],[7,8,9]])

def add(mat):
        sum=0
        for i in range(2):
                for j in range(2):
                        if i==j:
                                sum=sum+mat[i][j]
        return(sum)

print(add(mat))
```

- 15
- 9
- 6
- 24

No, the answer is incorrect.
Score: 0

Accepted Answers:
6

Which of the following can be used to see the dimension of a numpy array named 'arr' ? ***1 point***

- dim(arr)
- shape(arr)
- arr.shape
- arr.shape()

Yes, the answer is correct.
Score: 1

Accepted Answers:
arr.shape

What happens if we fail to check the anchor case in a recursive function? ***1 point***

- Results in an infinite loop
- RunTimeError
- Never gets executed
- Returns a wrong output

Yes, the answer is correct.
Score: 1

Accepted Answers:
Results in an infinite loop

What is the output of the following code ? ***1 point***

```
print('ab'.isalpha())
```

- True
- False
- None
- Error

Yes, the answer is correct.
Score: 1

Accepted Answers:
True

If GOLD is encoded as FNKC, then how is PLATINUM encoded? ***1 point***

- NKYRGLSK
- OKZSHMUL
- NJYRGLSK
- OKZSHMTL

Yes, the answer is correct.
Score: 1

Accepted Answers:
OKZSHMTL

Which of these statements is true? ***1 point***

- Recursion can solve only a subset of problems which Iteration can.
- Recursion is not related to Iteration.
- Recursion cannot solve the problems that can be solved by iteration.
- Any problem that Recursion can solve, can also be solved by Iteration

Yes, the answer is correct.
Score: 1

Accepted Answers:
Any problem that Recursion can solve, can also be solved by Iteration

Which of the following strategy of play does Tic Tac Toe belong to? ***1 point***

- Max-max
- Min-max
- Max-min
- Min-min

Yes, the answer is correct.
Score: 1

Accepted Answers:
Min-max

Assignment 7

The due date for submitting this assignment has passed. **Due on 2020-11-04, 23:59 IST.**

Assignment submitted on 2020-11-04, 20:47 IST

NOTE: Python 3.7 has been used for this Assignment

Imagine a single player snakes and ladders game. The code below represents ***1 point***

```
import random

def play(psn,flag):
        snake_begin=-1
        snake_end=-1
        while(snake_begin <= snake_end):
                snake_begin=random.randint(1,99)
                snake_end=random.randint(1,99)
        print('Snake from',snake_begin,'to',snake_end)
        r = random.randint(1,6)
        print('Dice rolled:',r)
        if(psn==0):
                if(r==1 or r==6):
                        psn=1
        else:
                psn=psn+r
        print('Position=',psn)
        #input()
        if(psn==snake_begin and flag==0):
                print('Bitten by snake')
                psn=snake_end
                flag=1
        if(psn>=100):
                print('You won')
                return
        play(psn,flag)

position=0
print('Position=',position)
play(position,0)
```

- A snakes and ladders game with one snake whose position remains constant while the player is playing. The position also remains the same during any subsequent plays (i.e. the game board does not change while you sleep and play again the next day).
- A snakes and ladders game with one snake whose position remains constant while the player is playing. However, the position can change during any subsequent plays (i.e. the game board might change while you sleep and play again the next day).
- A snakes and ladders game with one snake where the snake can change its position during the game and also during any subsequent plays (a board game where the snakes keep moving). Further, the snake can bite you any number of times.
- A snakes and ladders game with one snake where the snake can change its position during the game and also during any subsequent plays (a board game where the snake keeps moving). Further, the snake can bite you only once when you play.

Yes, the answer is correct.
Score: 1

Accepted Answers:
A snakes and ladders game with one snake where the snake can change its position during the game and also during any subsequent plays (a board game where the snake keeps moving). Further, the snake can bite you only once when you play.

Consider the code given below. Assume your current position being 19 and what happens when you roll 2? ***1 point***

```
import random
end=100

def snake_ladder(pos):
        sl_dict={1:38,4:14,8:30,21:42,28:76,32:10,
        36:6,48:26,50:67,62:18,71:92,80:99,88:24,95:56,97:78}
        if pos in sl_dict.keys():
                return(sl_dict[pos])
        else:
                return(pos)
def play():
        pos=0
        turn=0
        print('Let's play Snakes ans Ladders!')
        while(1):
                c=input('Press 1 to roll Dice/0 to Quit')
                if c=='0':
                        break
                roll=random.randint(1,6)
                turn=turn+1
                pos_roll=pos+roll
                pos=snake_ladder(pos_roll)
                if pos>pos_roll:
                        print('Hurray! You climbed a ladder.
                        Your score is ',pos)
                elif pos<pos_roll:
                        print('OOPS! You are bitten by a snake.
                         Your score is ',pos)
                else:
                        print('Your position is ', pos)
                if pos>=end:
                        print('You won in ',turn,' turns')
                        break
play()
```

- You climb up the ladder to reach 42
- You are bitten by a snake to reach 42
- You win
- You Quit

Yes, the answer is correct.
Score: 1

Accepted Answers:
You climb up the ladder to reach 42

Imagine a single player snakes and ladders game. The code below represents ***1 point***

```
import random

def play(psn):
        snake_begin=-1
        snake_end=-1
        while(snake_begin <= snake_end):
                snake_begin=random.randint(1,99)
                snake_end=random.randint(1,99)
        r = random.randint(1,6)
        print('Dice rolled:',r)
        if(psn==0):
                if(r==1 or r==6):
                        psn=1
        else:
                psn=psn+r
        if(psn==snake_begin):


                print('Bitten by snake')
                psn=snake_end
        if(psn>=100):
                print('You won')
                return
        play(psn)

position=0
play(position)
```

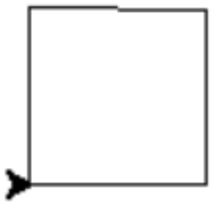
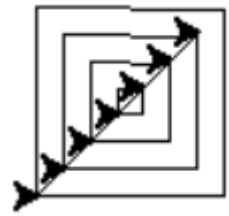
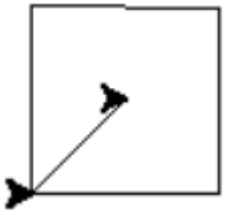
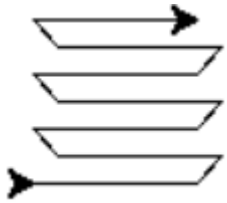
- A snakes and ladders game with one snake whose position remains constant while the player is playing. The position also remains the same during any subsequent plays (i.e. the game board does not change while you sleep and play again the next day).
- A snakes and ladders game with one snake whose position remains constant while the player is playing. However, the position can change during any subsequent plays (i.e. the game board might change while you sleep and play again the next day).
- A snakes and ladders game with one snake where the snake can change its position during the game and also during any subsequent plays (a board game where the snakes keep moving). Further, the snake can bite you any number of times.
- A snakes and ladders game with one snake where the snake can change its position during the game and also during any subsequent plays (a board game where the snake keeps moving). Further, the snake can bite you only ones when you play.

Yes, the answer is correct.
Score: 1

Accepted Answers:
A snakes and ladders game with one snake where the snake can change its position during the game and also during any subsequent plays (a board game where the snakes keep moving). Further, the snake can bite you any number of times.

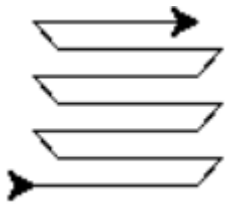
Predict the output of the calling function func(mx) for a given square matrix, mx of dimension 70 × 70. ***1 point***

```
def func(mx):
        f=1
        n=len(mx)
        tur = turtle.Turtle()
        tur.setpos(0,0)
        j=0
        while(j<n):
                if(f==1):
                        i=0
                        while(i<=n-1):
                                turtle.goto(i,j)
                                i=i+10
                if(f==0):
                        i=n-1
                        while(i>-1):
                                turtle.goto(i,j)
                                i=i-10
                f=(f+1)
                if(f==2):
                        f=0
                j=j+10
        turtle.done()
```

- 
- 
- 
- 

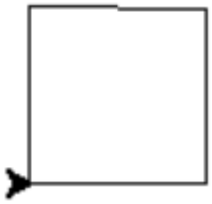
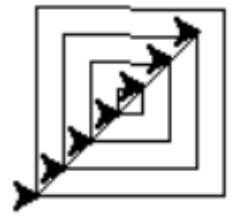
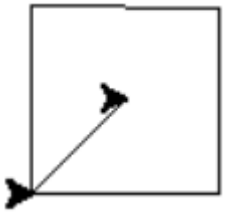
Yes, the answer is correct.
Score: 1

Accepted Answers:



Predict the output of the calling function func() for a given square matrix mx of dimension 70 × 70. ***1 point***

```
import turtle

def func():
    tur = turtle.Turtle()
    tur.setpos(0,0)
    n=len(mx)
    second=int(n/2)
    turtle.goto(second-1,second-1)
    turtle.goto(second-1,second)
    turtle.goto(second,second-1)
    turtle.goto(second,second)
    turtle.done()


func()
```

- 
- 
- 
- 

Yes, the answer is correct.
Score: 1

Accepted Answers:

Identify the package that is used to import an image. ***1 point***

- Pandas
- Scipy
- PIL
- numpy

Yes, the answer is correct.
Score: 1

Accepted Answers:
PIL

Given a $n \times n$ n×n square matrix mx in the form of list of lists in the following figure, what is the output of the statement func(mx)? ***1 point***


```
def func1(mx,i):
        for ind in range(i,n-i):
                print(mx[i][ind],end=' ')
        for ind in range(i+1,n-i):
                print(mx[ind][n-1-i],end=' ')
        for ind in range(n-2-i,i,-1):
                print(mx[n-1-i][ind],end=' ')
        for ind in range(n-i-1,i,-1):
                print(mx[ind][i],end=' ')
```

```
def func(mx):
        for i in range(n):
                func1(mx,i)
                print()
```

- 3 2 1 8 5 6 7 6
- 1 2 3 4 5 6 7 6 3 0 3 6 7 8 9 0 9 8 7 2 9 4 5 8
  9 0 9 8 7 2 9 4 5 4 3 2 1 8 5 4
  3 2 1 8 5 6 7 6
  7
- 1 2 3 4 5 6 7 6 3 0 3 6 7 8 9 0 9 8 7 2 9 4 5 8 9 0 9 8 7 2 9 4 5 4
  3 2 1 8 5 4 3 2 1 8 5 6 7

```
3 6 7 7 7 2 1 8 5
```

Yes, the answer is correct.
Score: 1

Accepted Answers:

```
1 2 3 4 5 6 7 6 3 0 3 6 7 8 9 0 9 8 7 2 9 4 5 8
9 0 9 8 7 2 9 4 5 4 3 2 1 8 5 4
3 2 1 8 5 6 7 6
7
```

How do you create a base map using gmplot package? ***1 point***

- gmap=gmplot.GoogleMapPlotter(cent_lat,cent_long, zoom)
- gmap=gmplot.GoogleMapPlotter(cent_long,cent_lat, zoom)
- gmap=gmplot.GoogleMapPlotter(cent_lat,cent_long)
- gmap=gmplot.GoogleMapPlotter(zoom,cent_lat,cent_long)

Yes, the answer is correct.
Score: 1

Accepted Answers:
gmap=gmplot.GoogleMapPlotter(cent_lat,cent_long, zoom)

Comment on the following code: ***1 point***

```
import csv
from gmplot import gmplot

gmap=gmplot.GoogleMapPlotter(9.920227,78.158252,12)

gmap.coloricon = 'http://www.googlemapsmarkers.com/v1/%s'

with open('path1.csv','r') as d:
    reader = csv.reader(d)
    k=0

    for row in reader:
        lat=float(row[0])
        long=float(row[1])
        if(k==0):
            gmap.marker(lat,long,'red')
            k = 1
        else:
            gmap.marker(lat,long,'yellow')

gmap.draw('mymap.html')
```

- Red marker is used for initial and final positions
- Yellow marker is used for the final position only
- Yellow marker is placed for all positions except first position which has a red marker.
- Red marker is placed for all positions except first position which has a yellow marker

Yes, the answer is correct.
Score: 1

Accepted Answers:
Yellow marker is placed for all positions except first position which has a red marker.

How will you download and install packages that are unavailable in conda cloud? ***1 point***

- pip install packagename
- conda list
- conda install packagename
- sudo apt-get install packagename

Yes, the answer is correct.
Score: 1

Accepted Answers:
pip install packagename

Assignment 8

The due date for submitting this assignment has passed. **Due on 2020-11-11, 23:59 IST.**

Assignment submitted on 2020-11-11, 19:53 IST

NOTE: Python 3.7 has been used for this Assignment

What is the output of the following snippet? ***1 point***

```
t1=('Amit','Simran','Neeru','Ravi','Shubhadha')
t2=t1+t1
print(len(t2))
```

- 5
- 10
- Error, because there is no len() function for Tuple
- Error, because Tuples are immutable

Yes, the answer is correct.
Score: 1

Accepted Answers:
10

Which of the following instruction produces a tuple, Team with 'Poonam' as the sixth member? ***1 point***
Given:

```
Team=('Amit','Simran','Neeru','Ravi','Shubhadha')
```

- Team=Team.append('Poonam')
- Team=Team+tuple('Poonam')
- Team=Team+('Poonam')
- Team=Team+('Poonam',)

Yes, the answer is correct.
Score: 1

Accepted Answers:
Team=Team+('Poonam',)

Which of the scenarios in the options does the following code represent? ***1 point***

```
import random
def play():
        a=input('Enter a number from 1 to 10')
        r=random.randint(1,10)
        if(a==r):
                return 1
        else:
                return 0

amt=0
for i in range(1,366):
        amt=amt+play()

print(amt)
```

- A person going to the bar for a year. Daily he guesses a number from 1 to 10. If the guessed number is equal to the number randomly generated by bar authority, he gains one gold coin.
- A person going to the bar for a month. Daily he guesses a number from 1 to 10. If the guessed number is equal to the number randomly generated by bar authority, he gains one gold coin.
- A person going to the bar for a year. Daily he guesses a number from 1 to 10. If the guessed number is equal to the number randomly generated by bar authority, he loses one gold coin.
- A person going to the bar for a month. Daily he guesses a number from 1 to 10. If the guessed number is equal to the number randomly generated by bar authority, he loses one gold coin.

Yes, the answer is correct.
Score: 1

Accepted Answers:
A person going to the bar for a year. Daily he guesses a number from 1 to 10. If the guessed number is equal to the number randomly generated by bar authority, he gains one gold coin.

Consider the following two codes: ***1 point***

Game 1

```
import random
r=random.uniform(0,1)
if(r<=0.5):
        print('won')
```

Game 2

```
import random
r=random.choice(range(1,6))
if(r%2==0):
        print('Won')
```

- Probability of winning in Game 1 > Probability of winning in Game 2.
- Probability of winning in Game 1 < Probability of winning in Game 2.

- Probability of winning in Game 1 = Probability of winning in Game 2.
- Can't say

No, the answer is incorrect.
Score: 0

Accepted Answers:
Probability of winning in Game 1 > Probability of winning in Game 2.

Choose the appropriate instruction to retrieve the mirror image of the given image. **1 point**

- mirror_image=img.transpose(Image.FLIP_TOP_BOTTOM)
- mirror_image=img.flip(Image.FLIP_LEFT_RIGHT)
- mirror_image=img.transpose(Image.FLIP_LEFT_RIGHT)
- mirror_image=img.composite(Image.FLIP_LEFT_RIGHT)

Yes, the answer is correct.
Score: 1

Accepted Answers:
mirror_image=img.transpose(Image.FLIP_LEFT_RIGHT)

Identify the technique that can be used to enhance image in cv2. **1 point**

- enh_img=clahe.apply(gray)
- enh_img=canny.apply(gray)
- enh_img=sobel.apply(gray)
- enh_img=enhance.apply(gray)

Yes, the answer is correct.
Score: 1

Accepted Answers:
enh_img=clahe.apply(gray)

Identify the best instruction to debug the following code that checks if the given strings are Anagrams: **1 point**

```
s1=input('Enter first string:')

s2=input('Enter Second string:')
if s1.sort()!=s2.sort():
        print('These are Anagrams')
else:
        print('Not Anagrams')
```

- if s1.sort()==s2.sort():
- if s1.sorted()==s2.sorted():
- if sorted(s1)==sorted(s2):
- if sorted(s1)!=sorted(s2):

Yes, the answer is correct.
Score: 1

Accepted Answers:
if sorted(s1)==sorted(s2):

Which of the following libraries helps us to find the intensity of emotion in sentiment analysis? **1 point**

- vader
- nltk
- pandas
- scipy

Yes, the answer is correct.
Score: 1

Accepted Answers:
vader

The isalpha() function in NLTK **1 point**

- returns true if any of the words in a sentence are composed of alphabetic characters and false otherwise
- returns true if all the characters in a word are alphabets and false otherwise
- returns true if all the characters in a word are alphabets or numerics and false otherwise
- None of the above

Yes, the answer is correct.
Score: 1

Accepted Answers:
returns true if all the characters in a word are alphabets and false otherwise

Every character, either alphabet or digit or special character has an ASCII value. Choose the appropriate method to find the ASCII value of ‘f’. **1 point**

- ASCII(‘f’)
- ord(‘f’)
- int(‘f’)
- ASC_val(‘f’)

Yes, the answer is correct.
Score: 1

Accepted Answers:
ord(‘f’)

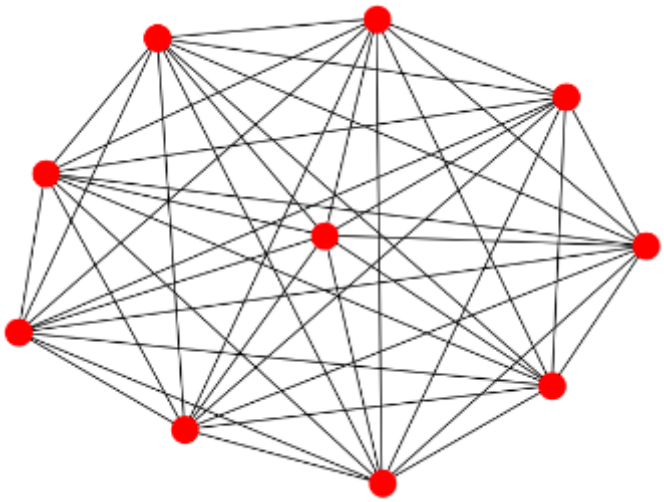
Assignment 9

The due date for submitting this assignment has passed. **Due on 2020-11-18, 23:59 IST.**

Assignment submitted on 2020-11-18, 20:11 IST

NOTE: Python 3.7 has been used for this Assignment

Which of the following commands is used to draw the following graph? ***1 point***



- G = nx.complete_graph(10)
- G = nx.complete_graph(9)
- G = nx.Graph(10)
- G = nx.Digraph(10)

Yes, the answer is correct.
Score: 1

Accepted Answers:
G = nx.complete_graph(10)

Identify the option that best describes the graph output of the following code. ***1 point***

```
import networkx as nx
import matplotlib.pyplot as plt

G = nx.Graph()
for i in range(1,11):
        G.add_node(i)
e = [(1,2),(2,3),(3,4),(4,5),(5,6),(6,7),(7,8),(8,9),(9,10)]
G.add_edges_from(e)

nx.draw(G)
plt.show()
```

- A complete graph with 10 nodes
- A complete graph with 9 nodes
- A connected graph with 10 nodes
- A connected graph with 9 nodes

Yes, the answer is correct.
Score: 1

Accepted Answers:

A connected graph with 10 nodes

How will you convert a graph, g into gexf format? ***1 point***

- nx.build_gexf(g,'Friendship.gexf')
- nx.create_gexf(g,'Friendship.gexf')
- nx.write(g,'Friendship.gexf')
- nx.write_gexf(g,'Friendship.gexf')

Yes, the answer is correct.
Score: 1

Accepted Answers:
nx.write_gexf(g,'Friendship.gexf')

What does p and q represent in the following instruction to find the shortest path length? ***1 point***

```
networkx.shortest_path_length(H,p,q)
```

- p and q represent to two lists of nodes
- p represents the source node and q represents the target node
- p represents the target node and q represents source the node
- p and q represent two paths

Yes, the answer is correct.
Score: 1

Accepted Answers:
p represents the source node and q represents the target node

Given a newspaper article, the first step to perform text analytics is to break down the paragraph into smaller chunks of words. Select the instruction that does it for you. ***1 point***

- word_tokenize(text)
- word_sent(text)
- text.word_tokenizer()
- text.sent_tokenizer()

Yes, the answer is correct.
Score: 1

Accepted Answers:
word_tokenize(text)

Predict the output for the given code: ***1 point***

```
from nltk.tokenize import word_tokenize
#nltk.download('punkt')
text='This is a 100% excellent opportunity to build your
    programming skills. Practice a whole lot of programming.'
tokens=word_tokenize(text)
l= ([token for token in tokens if any(not c.isalpha() for c in
    token)])
print(l)
```

- ['This', 'is', 'a', 'excellent', 'opportunity', 'to', 'build', 'your', 'programming', 'skills. Practice', 'a', 'whole', 'lot', 'of', 'programming']
- ['100', '%', '.', '.']
- ['100%']
- ['This', 'is', 'a', 'excellent', 'opportunity', 'to', 'build', 'your', 'programming', 'skills', 'Practice', 'a', 'whole', 'lot', 'of', 'programming']

Yes, the answer is correct.
Score: 1

Accepted Answers:

['100', '%', '.', '.']

Pick out the valid function to find the frequency distribution. **1 point**

- nltk.FreqDist()
- nltk.Freq_Dist()
- nltk.Frequency_Dist()
- nltk.FDist()

Yes, the answer is correct.
Score: 1

Accepted Answers:
nltk.FreqDist()

Which of the following commands is used to create an image for an array? **1 point**

- Image.array(array)
- Image.fromarray(array)
- Image.imagefromarray(array)
- Image.imgarray(array)

Yes, the answer is correct.
Score: 1

Accepted Answers:
Image.fromarray(array)

What is the output of the following snippet? **1 point**

```
arr=np.zeros([200,200,3],dtype=np.uint8)
arr[:100,:]=[255,0,0]
arr[100:,:]=[0,0,255]
img=Image.fromarray(arr)
img.save('test.png')
```

- Image of size 200 x 200 with Red on left and Blue on right
- Image of size 200 x 3 with Red on top and Blue at the bottom
- Image of size 200 x 200 with Red on top and Green at the bottom
- Image of size 200 x 200 with Red on top and Blue at the bottom

Yes, the answer is correct.
Score: 1

Accepted Answers:
Image of size 200 x 200 with Red on top and Blue at the bottom

Consider the program to estimate the area calcuation of your state. How can you increase the accuracy of the estimate? **1 point**

- By increasing the number of iterations the experiment is performed.
- By decreasing the number of iterations the experiment is performed.
- By reducing the number of iterations the experiment to one.
- By increasing the number of iterations to 100.

Yes, the answer is correct.
Score: 1

Accepted Answers:
By increasing the number of iterations the experiment is performed.

Assignment 10

The due date for submitting this assignment has passed. **Due on 2020-11-25, 23:59 IST.**

Assignment submitted on 2020-11-25, 19:33 IST

NOTE: Python 3.7 has been used for this Assignment

Which of the following attributes is used to obtain picture size using PIL in Python? ***1 point***

- len
- size
- dimension
- length

Yes, the answer is correct.
Score: 1

Accepted Answers:
size

Predict the output. ***1 point***

```
l1=[1,2,3,4,5]
l2=[1,4,6,12]
l=[]
for i in l1:
        for j in l2:
                if i==j:
                        l.append(i)
print(l)
```

- 1,4
- [1, 4, 6, 12]
- [1, 4]
- [2, 3, 5, 6, 12]

Yes, the answer is correct.
Score: 1

Accepted Answers:
[1, 4]

What is the output for the following snippet? ***1 point***

```
import numpy as np
m=np.array([[9,10,11],[19,20,21]])
print(m.T)
```

- [[9 19]
  [10 20]]
- [[9 19 10 20]]
- [[9 19 11]
  [10 20 21]]

```
[[ 9  19]
[10  20]
[11  21]]
```

Yes, the answer is correct.
Score: 1

Accepted Answers:

```
[[ 9  19]
[10  20]
[11  21]]
```

What does the following command perform? ***1 point***

```
print('Chennai and Madras are same. Madras and Chennai are same.
    Chennai=Madras, Madras=Chennai'.replace('Madras','Chennai'
    ,2))
```

- Chennai and Chennai are same. Chennai and Chennai are same. Chennai=Chennai, Chennai=Chennai
- Chennai and Chennai are same. Chennai and Chennai are same. Chennai=Madras, Madras=Chennai
- Madras and Madras are same. Madras and Madras are same. Chennai=Madras, Madras=Chennai
- Chennai and Chennai are same. Chennai and Chennai are same. Chennai=Chennai, Madras=Chennai

Yes, the answer is correct.
Score: 1

Accepted Answers:
Chennai and Chennai are same. Chennai and Chennai are same. Chennai=Madras, Madras=Chennai

Given: ***1 point***

```
p=[[1,2,3],
[4,5,6]]
```

What is the output for the following command?

```
numpy.sum(p, axis=2)
```

- array([5, 7, 9])
- array([6, 15])
- AxisError: axis 2 is out of bounds for array of dimension 2
- array([15])

Yes, the answer is correct.
Score: 1

Accepted Answers:
AxisError: axis 2 is out of bounds for array of dimension 2

Pick out the correct output. ***1 point***

```
numpy . ones ( ( 3 , 3 ) )
```

-
```
array([[1.,  1.,  1.],
       [1.,  1.,  1.],
       [1.,  1.,  1.]])
```

```
array([[1., 1., 1.],
       [1., 1., 1.]])
```

```
array([[1., 0., 0.],
       [0., 1., 0.],
       [0., 0., 1.]])
```

```
array([[0., 0., 1.],
       [0., 1., 0.],
       [1., 0., 0.]])
```

Yes, the answer is correct.
Score: 1

Accepted Answers:

```
array([[1., 1., 1.],
       [1., 1., 1.],
       [1., 1., 1.]])
```

How will you create a blank image of the same size and type of a given image? ***1 point***

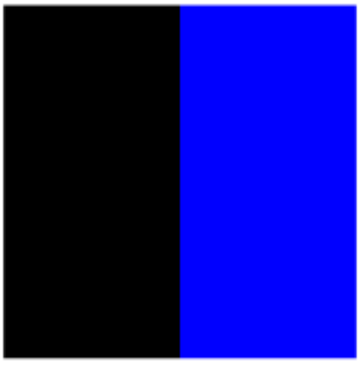
- img=Image.new(im.mode,im.shape)
- img=Image.new(im.mode,im.size)
- img=Image.new(im.type,im.size)
- img=Image.blank(im.mode,im.size)

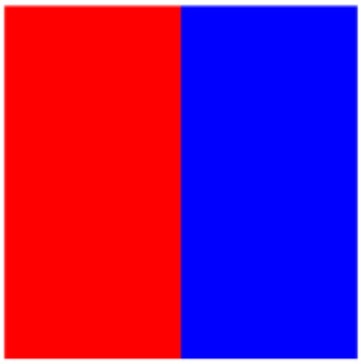
No, the answer is incorrect.
Score: 0

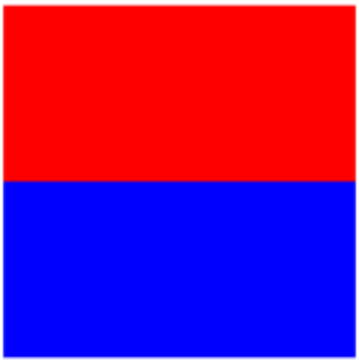
Accepted Answers:
img=Image.new(im.mode,im.size)

Choose the relevant image for test3.png created by the given code. ***1 point***

```
import numpy as np
from  PIL import Image

array1=np.zeros([200,200,3],dtype=np.uint8)
array2=np.zeros([200,200,3],dtype=np.uint8)

array1[:,:100]=[255,0,0]
array2[:,100:]=[0,0,255]
array3=np.add(array1,array2)

img1=Image.fromarray(array1)
img2=Image.fromarray(array2)
img3=Image.fromarray(array3)

img3.save('test3.png')
```

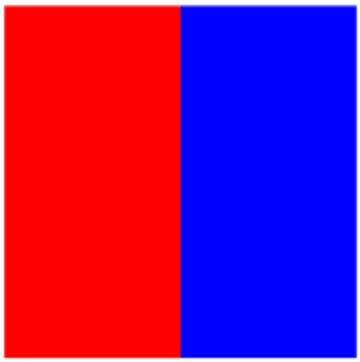






Yes, the answer is correct.
Score: 1

Accepted Answers:



Predict the output. ***1 point***

```
corpus='The Josephus problem is a theoretical problem related to
    a certain counting-out game.'

print(corpus.index('problem'))
```

- 13
- 38
- 14
- 39

Yes, the answer is correct.
Score: 1

Accepted Answers:
13

Which of the following options is a best description of the output for the following command? ***1 point***

```
numpy.random.randint(1,5,(2,5))
```

- 2 x 5 numpy array with random integers from 1 to 5
- 1 x 5 numpy array with random integers from 2 to 4
- 2 x 5 numpy array with random integers from 1 to 4
- 1 x 5 numpy array with random integers from 2 to 5

Yes, the answer is correct.
Score: 1

Accepted Answers:
2 x 5 numpy array with random integers from 1 to 4

Assignment 11

The due date for submitting this assignment has passed. **Due on 2020-12-02, 23:59 IST.**

Assignment submitted on 2020-11-29, 16:11 IST

NOTE: Python 3.7 has been used for this Assignment

Which of the following methods cannot be used to identify an element on the web page? ***1 point***

- find_element_by_id()
- find_element_by_link_text()
- find_element_by_class_name()
- send_keys()

Yes, the answer is correct.
Score: 1

Accepted Answers:
send_keys()

Identify the python library required for Browser Automation. ***1 point***

- Selenium
- Time
- Webdriver
- Chromedriver

Yes, the answer is correct.
Score: 1

Accepted Answers:
Selenium

Pick out the driver method to open a website in selenium. ***1 point***

- driver.getwebpage()
- driver.get()
- driver.request()
- driver.open()

Yes, the answer is correct.
Score: 1

Accepted Answers:
driver.get()

What is the purpose of the given command when we request to open a web page? ***1 point***

$$\text{wait=WebDriverWait(driver ,600)}$$

- To record login information
- To check certificate information of the web page
- To give buffer time for the driver in case there is a slow network connection
- To collect cookies information

Yes, the answer is correct.
Score: 1

Accepted Answers:
To give buffer time for the driver in case there is a slow network connection

In Browser automation, you have identified the login box. Identify the instruction to type your name and press ENTER. ***1 point***

- login_box.send_keys(name + Keys.ENTER)
- login_box.press_keys(name + Keys.ENTER)

- login_box.send_keys(name + ENTER)
- login_box.hot_key(name + Keys.ENTER)

Yes, the answer is correct.
Score: 1

Accepted Answers:
login_box.send_keys(name + Keys.ENTER)

Which of the following libraries can be used to print time according to different timezones? ***1 point***

- datetime
- date
- calendar
- pytz

Yes, the answer is correct.
Score: 1

Accepted Answers:
pytz

How will you find the day of the week, given a date? ***0 points***

```
import calendar
week_days=['Sunday','Monday','Tuesday','Wednesday','
    Thursday','Friday','Saturday']
i=calendar.weekday(2006,12,11)
print(week_days[i])
```

```
import calendar
i=calendar.weekday(2006,12,11)
print(i)
```

```
import calendar
i=calendar.day_of_week(2006,12,11)
print(i)
```

```
import datetime
i=datetime.weekday(2006,12,11)
print(i)
```

No, the answer is incorrect.
Score: 0

Accepted Answers:

```
import calendar
week_days=['Sunday','Monday','Tuesday','Wednesday','
    Thursday','Friday','Saturday']
i=calendar.weekday(2006,12,11)
print(week_days[i])
```

Find the output: ***1 point***

```
from datetime import datetime

a = datetime(2019, 10, 11, 2, 45, 34, 323234)
print('month =', a.month)
```

- month=10
- month=11
- month=23
- month=2

Yes, the answer is correct.
Score: 1

Accepted Answers:
month=10

What is the last argument for the datetime function in the following command? ***0 points***

```
a = datetime(2019, 10, 11, 2, 45, 34, 323234)
```

- nanoseconds
- milliseconds
- minutes
- microseconds

Yes, the answer is correct.
Score: 0

Accepted Answers:
microseconds

How will you retrieve current date using date library? ***1 point***

- date.today()
- date.now()
- date.current date()
- date.date()

Yes, the answer is correct.
Score: 1

Accepted Answers:
date.today()

Assignment 12

The due date for submitting this assignment has passed. **Due on 2020-12-09, 23:59 IST.**

Assignment submitted on 2020-12-09, 19:55 IST

NOTE: Python 3.7 has been used for this Assignment

In a page rank algorithm, after taking an optimum number of random walks in a web graph, what can you say about the nodes with maximum points? ***1 point***

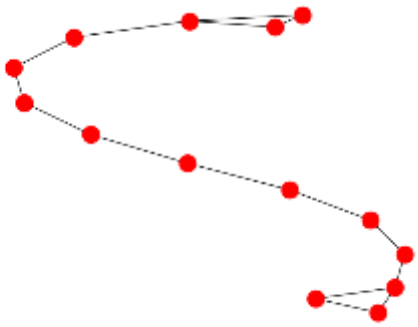
- These nodes are the most visited
- These nodes are least visited
- These nodes have maximum number of in-links
- These nodes have maximum number of out-links

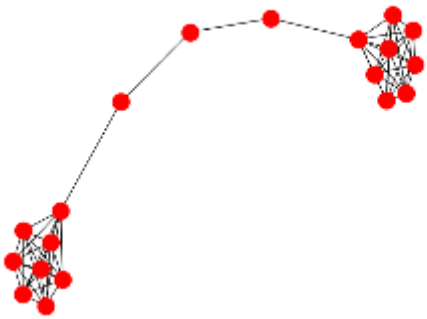
Yes, the answer is correct.
Score: 1

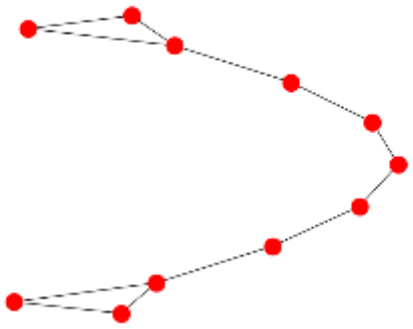
Accepted Answers:
These nodes are the most visited

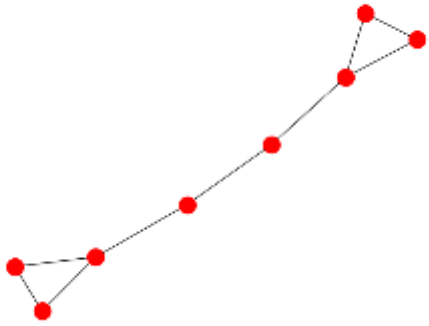
Identify the graph created using the following command. ***1 point***

```
G = networkx.barbell_graph(8,3)
```



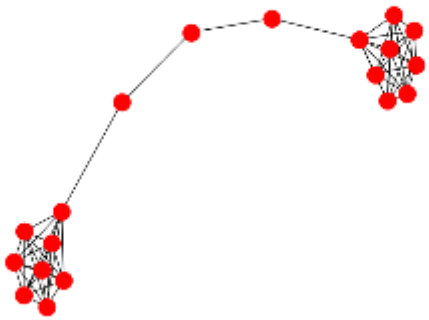




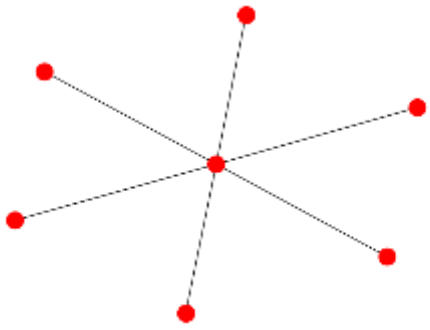


Yes, the answer is correct.
Score: 1

Accepted Answers:



Which of the following commands is used to create the graph given below: ***1 point***



- G = networkx.complete_graph(7)
- G = networkx.cycle_graph(6)
- G = networkx.star_graph(6)
- G = networkx.star_graph(7)

Yes, the answer is correct.
Score: 1

Accepted Answers:
G = networkx.star_graph(6)

Comment on the purpose of the following command. ***1 point***

```
sorted(p.items(),key=operator.itemgetter(1))
```

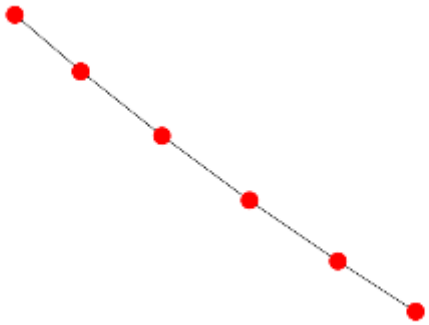
- Sort the items of dictionary, p by key
- Sort the items of dictionary, p by values
- Sort the elements of list, p by values
- Sort the items of Tuple, p by values

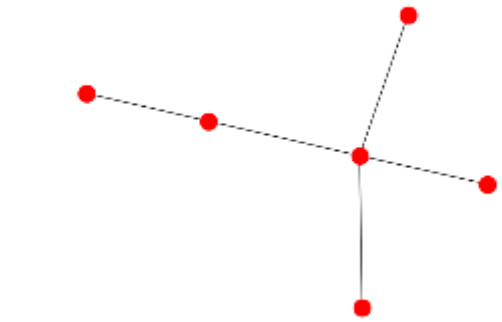
Yes, the answer is correct.
Score: 1

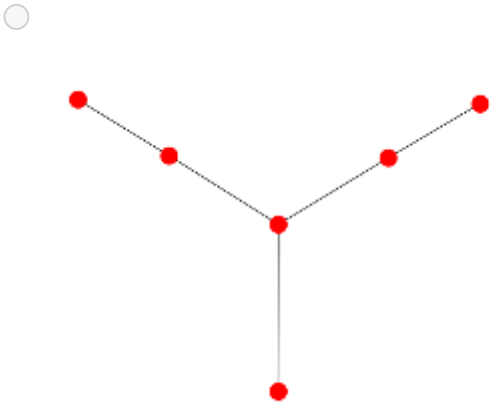
Accepted Answers:
Sort the items of dictionary, p by values

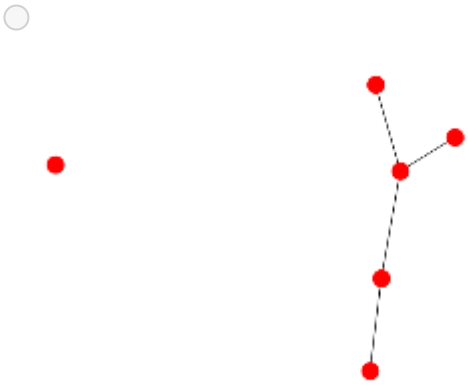
Identify the graph that can never be an output of the following code. ***1 point***

```
import random
import networkx as nx
import matplotlib.pyplot as plt

G = nx.Graph()
G.add_nodes_from([i for i in range(6)])
while (nx.is_connected(G)!=True):
        x=random.choice(list(G.nodes()))
        y=random.choice(list(G.nodes()))
        if (x!=y):
                G.add_edge(x,y)

        else:
                continue

nx.draw(G)
plt.show()
```



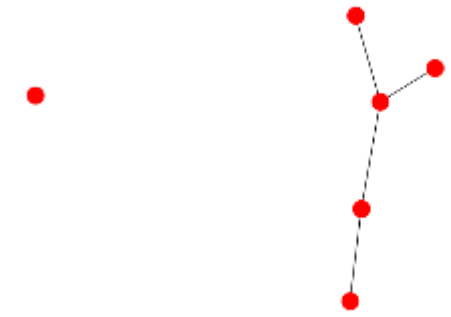






Yes, the answer is correct.
Score: 1

Accepted Answers:



Which of the following real world networks represent an undirected graph? ***1 point***

- Wikigraph
- Citation network
- Facebook Friendship network
- World wide web

Yes, the answer is correct.
Score: 1

Accepted Answers:
Facebook Friendship network

What happens to the total Points with every iteration in the Points distribution method? ***1 point***

- Increases every iteration
- Decreases for every iteration
- Increases or decreases depending on the structure of the graph
- Remains constant

Yes, the answer is correct.
Score: 1

Accepted Answers:
Remains constant

How many iterations does the number, 75 take to converge in Collatz Conjecture? ***0 points***

- 14
- 15
- 13
- 12

No, the answer is incorrect.
Score: 0

Accepted Answers:
14

Which of the sequence do you obtain by executing 3n+1 algorithm for n = 10? ***1 point***

- 31, 15, 7, 3, 1
- 5, 16, 8, 4, 2, 1
- 5, 3, 2, 1
- doesnot converge

Yes, the answer is correct.
Score: 1

Accepted Answers:
5, 16, 8, 4, 2, 1

How will you choose the next node to traverse in a random walk method of Page Rank algorithm? ***1 point***

- Choose the node that has not been traversed yet
- Choose the most weighted out-link
- Randomly choose one of the out-links
- Choose the least weighted out-link

Yes, the answer is correct.
Score: 1

Accepted Answers:
Randomly choose one of the out-links