

INFYTQ SCREENING TEST (PYTHON) 21ST OF FEB, 2020 11 AM SLOT

Question 1

Consider the code given below.

```
def info(name, no_of_seats=100, *marks):
    pass
```

Which of the following function calls will execute successfully?

- info("John", 350, 21)
- info("John")
- info("John", 100, 21, 46)
- All the given function calls

Reset

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Question 2

Consider the code given below:

```
class Flat:
    def __init__(self, flat_rent):
        self.__flat_rent = flat_rent
        self.__total_rent = None
    def get_total_rent(self):
        return self.__total_rent
    def set_total_rent(self, value):
        self.__total_rent = value
    def calculate_total_rent(self, maintenance_cost):
        self.__total_rent = self.__flat_rent + maintenance_cost

class FurnishedFlat(Flat):
    def __init__(self, flat_rent, amenity_cost):
        super().__init__(flat_rent)
        self.amenity_cost = amenity_cost
    def calculate_total_rent(self, maintenance_cost):
        _____ # Line 1
        _____ # Line 2

ff=FurnishedFlat(5000,1000)
ff.calculate_total_rent(500)
print(ff.get_total_rent())
```

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written at Line 1 and Line 2 so that the output of the above program is 6500?

```
ff.calculate_total_rent(500)
print(ff.get_total_rent())
```

What must be written at Line 1 and Line 2 so that the output of the above program is 6500?

Note: Line numbers are only for reference

- Line 1: self.calculate_total_rent(maintenance_cost)
Line 2: self.__total_rent=self.__total_rent+self.amenity_cost
- Line 1: super().calculate_total_rent(maintenance_cost)
Line 2: self.__total_rent=self.__total_rent+self.amenity_cost
- Line 1: self.calculate_total_rent(maintenance_cost)
Line 2: self.set_total_rent(self.get_total_rent()+self.amenity_cost)
- Line 1: super().calculate_total_rent(maintenance_cost)
Line 2: self.set_total_rent(self.get_total_rent()+self.amenity_cost)

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Consider the below **input_stack**:

input_stack (Top to Bottom): 1, 7, 2, 5, 7, 1, 3, 6

What will be the content of **linked_list** from head to tail after the execution of the function **perform** with **input_stack** as parameter?

```
def modify_linked_list(input_linked_list,str1):
    temp=input_linked_list.get_head()
    #get_head() returns the head node
    while(temp.get_next().get_next() !=None):
        #get_next() returns the address of the next node
        if str1 in temp.get_next().get_data():
            #get_data() returns the data stored in the node
            input_linked_list.add(temp.get_data())
            # add(data) inserts a node with 'data' as value at the end of the LinkedList
            temp=temp.get_next()
        elif(temp.get_data().isdigit()):
            input_linked_list.add(temp.get_data())
            temp=temp.get_next()
    return input_linked_list
```

Assumption: Stack and **LinkedList** classes, with the necessary methods, are available.

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Question 3

Consider the below `input_stack`:

`input_stack` (Top to Bottom): 1, 7, 2, 5, 7, 1, 3, 6

What will be the content of `linked_list` from head to tail after the execution of the function `perform` with `input_stack` as parameter?

```
def modify_linked_list(input_linked_list,str1):
    temp=input_linked_list.get_head()
    #get_head() returns the head node
    while(temp.get_next() !=None):
        #get_next() returns the address of the next node
        if str1 in temp.get_next().get_data():
            #get_data() returns the data stored in the node
            input_linked_list.add(temp.get_data())
            # add(data) inserts a node with 'data' as value at the end of the LinkedList
            temp=temp.get_next()
        elif(temp.get_data().isdigit()):
            input_linked_list.add(temp.get_data())
            temp=temp.get_next()
    return input_linked_list
```

Assumption: Stack and LinkedList classes, with the necessary methods, are available

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```
input_linked_list.add(temp.get_data())
# add(data) inserts a node with 'data' as value at the end of the LinkedList
temp=temp.get_next()
elif(temp.get_data().isdigit()):
    input_linked_list.add(temp.get_data())
temp=temp.get_next()
return input_linked_list
```

Assumption: Stack and LinkedList classes, with the necessary methods, are available

9
3
6
9
12
15
18

- 24 ->14 ->14 ->3
- 20 ->6 ->6 ->7
- 20 ->6 ->6 ->14
- 24 ->14 ->14 ->6

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Question 4

Consider the following function `reverse_linkedList`, which is supposed to reverse a linked list containing unique elements:

```
def reverse_linkedList(original_list):
    reverse_list=LinkedList()
    templ=original_list.get_head() # get_head() returns the head node
    temp2=original_list.get_tail() # get_tail() returns the tail node
    count=0
    while templ is not None:
        count+=1
        templ=templ.get_next() # get_next() returns the address of the next node
    while(count>0):
        temp2=original_list.get_tail() # add(data) inserts a node with 'data' as value at the end of the LinkedList
        # delete(data) deletes the first node in LinkedList whose value is the input data
        _____ #Line 1
        _____ #Line 2
        count-=1
    original_list=reverse_list
    return original_list
```

Which of the following options must be added at Line 1 and Line 2 so that the code performs correctly?

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Assumption: LinkedList class, with the necessary methods, is available

Note: Line numbers are only for reference

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```
    count-=1
    original_list=reverse_list
    return original_list
```

Which of the following options must be added at Line 1 and Line 2 so that the code performs correctly?

Assumption: LinkedList class, with the necessary methods, is available

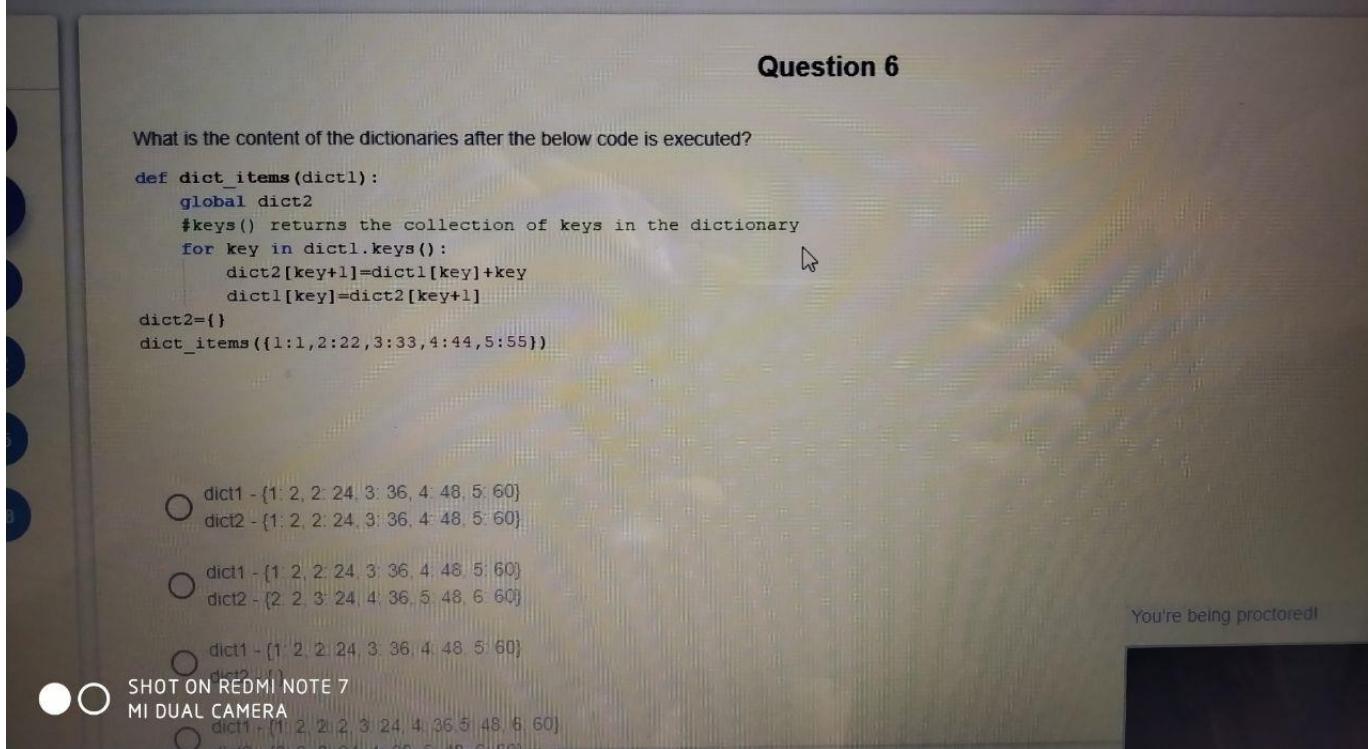
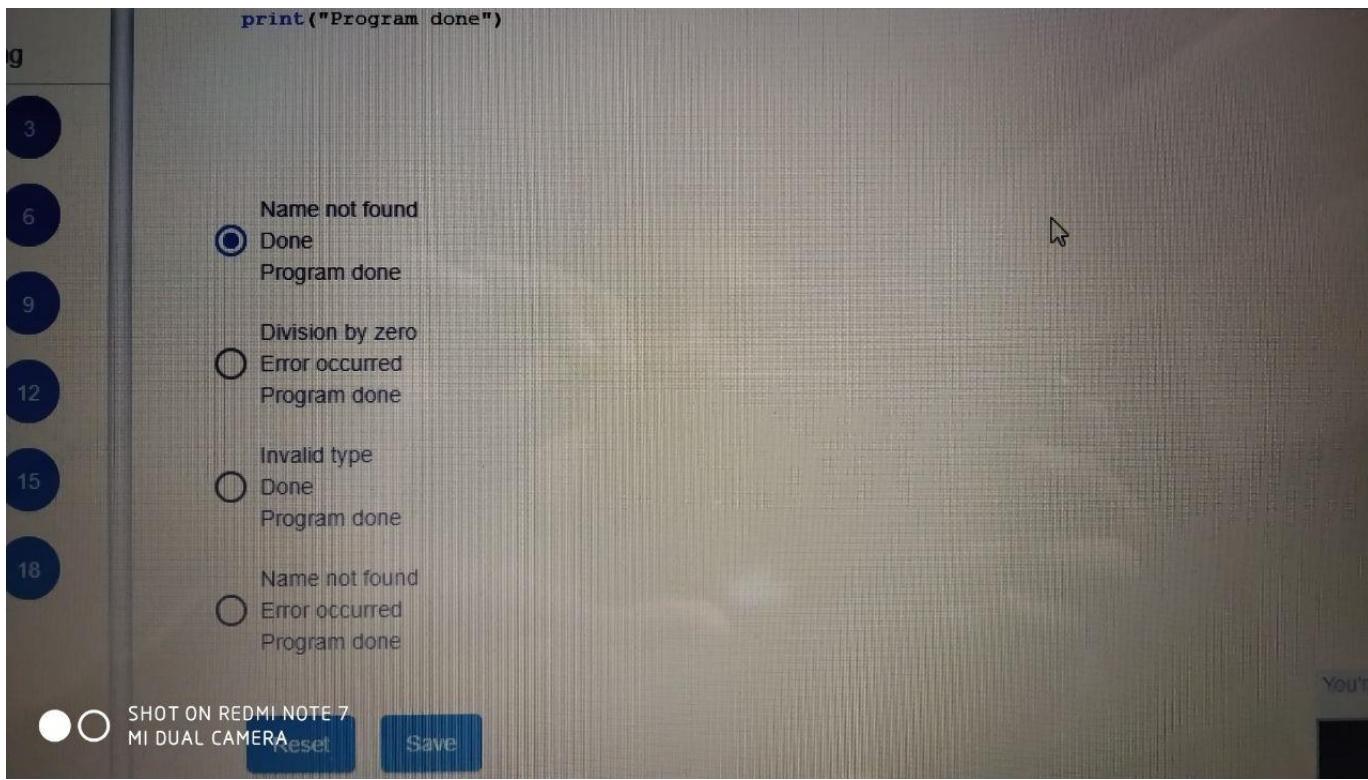
Note: Line numbers are only for reference

- Line 1: `original_list.add(temp2.get_data())`
Line 2: `reverse_list.delete(temp2.get_data())`
- Line 1: `reverse_list.add(temp2)`
Line 2: `original_list.delete(temp2)`
- Line 1: `reverse_list.add(temp2.get_data())`
Line 2: `original_list.delete(temp2.get_data())`
- Line 1: `original_list.add(temp2)`
Line 2: `reverse_list.delete(temp2)`

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```
3      for key in dict1.keys():
        dict2[key+1]=dict1[key]+key
        dict1[key]=dict2[key+1]
dict2={}
dict_items({1:1,2:22,3:33,4:44,5:55})
```

6

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18

- dict1 - {1: 2, 2: 24, 3: 36, 4: 48, 5: 60}
dict2 - {1: 2, 2: 24, 3: 36, 4: 48, 5: 60}
- dict1 - {1: 2, 2: 24, 3: 36, 4: 48, 5: 60}
dict2 - {2: 2, 3: 24, 4: 36, 5: 48, 6: 60}
- dict1 - {1: 2, 2: 24, 3: 36, 4: 48, 5: 60}
dict2 - {}
- dict1 - {1: 2, 2: 2, 3: 24, 4: 36, 5: 48, 6: 60}
dict2 - {2: 2, 3: 24, 4: 36, 5: 48, 6: 60}

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```
self.__brand=brand

def calling_feature(self):
    print("Voice calls can be made using Phone")

class SmartPhone(Phone):
    def calling_feature(self):
        print("Voice calls as well as video calls can be made using Smart Phone")
```

2

5

8

- Only Inheritance and Encapsulation
- Only Inheritance and Polymorphism
- Inheritance, Encapsulation and Polymorphism
- Only Polymorphism and Encapsulation

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Question 7

Alex has an account on a popular social networking site which supports any user to follow any other user. Alex has more than thousand such followers.

He wants to effectively organize his followers considering only his immediate followers and followers of his immediate followers.

Identify the most suitable data structure that can be used by Alex to organize his followers.

- Queue
- Hash table
- Tree
- Graph

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MCQ QUESTIONS

Question 8

Identify the OOP principles that have been implemented in the below code:

```
class Phone:  
    def __init__(self,imei_number,brand):  
        self.__imei_number=imei_number  
        self.__brand=brand  
  
    def calling_feature(self):  
        print("Voice calls can be made using Phone")  
  
class SmartPhone(Phone):  
    def calling_feature(self):  
        print("Voice calls as well as video calls can be made using Smart Phone")
```

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Only Inheritance and Encapsulation

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Question 9

The following numbers are to be stored in a hash table(arriving in the order shown) using the hash function,

$$h(k)=k\%5$$

4, 7, 16, 8, 18

Identify for which numbers collision will NOT occur after mapping the numbers with the given hash function.

- 4, 7, 16 and 8
- 4, 7 and 16
- 4, 7, 16 and 18
- 4 and 7

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Question 10

Consider the following statements:

1. Public attributes can only be accessed inside the class.
2. In python language, prefixing the attribute with leading double underscores(_) makes it private.
3. Private attributes can be accessed outside the class with the help of corresponding getter methods.
4. Methods cannot be made private.

Which of the above statement(s) is/are TRUE?

- Only 2 and 3
- All 1, 2, 3 and 4
- Only 1 and 4
- Only 2

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Question 11

One of the top rated hotels by name "FiveStar" is in the process of automating their operational activities related to room booking. As a part of allocating a room, the availability of the room is checked based on the room type. Also customers with membership cards are provided with the discount based on the card type. The bill amount is calculated after the above mentioned steps are completed.

Which among the following options would be an optimized way to implement the above scenario?

- One function containing all the required logic
- 2 functions: 'check_room_availability(room_type)', 'identify_discount(card_type)'
- 2 functions: 'check_room_availability(room_type)', 'calculate_bill_amount(card_type)'
- 3 functions: 'check_room_availability(room_type)', 'identify_discount(card_type)' and 'calculate_bill_amount()'

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Question 12

Consider the below code snippet:

```
class Car:  
    __counter=100  
    types=['SUV','Hatchback','Coupe']  
    def __init__(self,model,doors): #Line 1  
        self.model=model  
        self.doors=doors  
        self.color=None  
  
car1=Car("Ford",4)  
car2=Car("Porsche",2)
```

How many static variables, local variables and instance variables respectively are present in the given code snippet?

Notes:

- While counting the variables do not consider **self** present at Line 1
- Line numbers are only for reference

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- Static=2, Local=2, Instance=3
- Static=2, Local=3, Instance=3

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Question 13

What is the output of the below Python code?

```
class ClassA:  
    def __init__(self, num):  
        self.__num=num  
  
    def get_num(self):  
        return self.__num  
  
    def set_num(self, num):  
        self.__num = num  
  
    def method1(self, var):  
        return self.__num+var  
  
class ClassB:  
    def __init__(self, ref_a):  
        self.ref_a=ref_a  
        self.num1=10  
  
    def method2(self, val):  
        self.ref_a.set_num(self.num1+val)
```

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6

How many static variables, local variables and instance variables respectively are present in the given code snippet?

Notes:

- While counting the variables do not consider **self** present at Line 1
- Line numbers are only for reference

9

12

15

18

- Static=2, Local=2, Instance=3
- Static=2, Local=3, Instance=3
- Static=1, Local=2, Instance=2
- Static=1, Local=3, Instance=2

Reset

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```

self.num1=10

def method2(self,val):
    self.ref_a.set_num(self.num1+val)

def method3(self):
    return self.ref_a.method1(3)+self.num1

obj_a=ClassA(5)
obj_b=ClassB(obj_a)
obj_b.method2(3)
print(obj_b.method3())

```

- 27
- 19
- 26
- 18

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Question 14

Consider the **BUBBLE SORT** algorithm given below which sorts the given **input_list** in **DESCENDING** order:

```

def bubble_sort(input_list):
    num = len(input_list)
    for iteration in range(num):
        for index1 in range(0, num - iteration - 1):
            if input_list[index1] < input_list[index1+1] :
                temp=input_list[index1]
                input_list[index1]= input_list[index1+1]
                input_list[index1+1]= temp

```

Consider the below **input_list**:

input_list : [2, 1, 6, 3, 7]

What would be the content of **input_list** after **second pass**, if the **input_list** is passed as a parameter to the above function **bubble_sort**?

- [6, 3, 7, 1, 2]
- [6, 3, 7, 2, 1]
- [3, 6, 7, 2, 1]
- [6, 2, 7, 3, 1]

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Question 15

Consider the below code written by Peter. He wants to test his code using "Boundary Value Analysis" technique on the parameter "years_old". Suggest him the most efficient test data set.

```
motorcycle_type ="Bike"
years_old =6
if(motorcycle_type == "Bike"):
    if years_old >= 5 and years_old <= 10:
        mileage=45
    elif years_old >= 11:
        mileage=40
    else:
        mileage= 25
elif(motorcycle_type == "Scooter"):
    mileage=35
else:
    mileage=20
```



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4, 5, 6, 10, 11, 12

```
    mileage= 25
elif(motorcycle_type == "Scooter"):
    mileage=35
else:
    mileage=20
```

9

12

15

18

4, 5, 6, 9, 10, 11, 12



4, 5, 6, 10, 11, 12

4, 5, 6, 9, 10, 11

4, 5, 6, 9, 10, 12

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Question 16

Consider an input_queue with the following elements

input_queue (Front to Rear)	4,3,13,8,2
-----------------------------	------------

Consider the following Python function which accepts the input_queue and an integer num as input parameters:

```
def queue_function(input_queue,num):  
    output_queue=Queue(5)  
    temp_queue=Queue(5)  
    while(num>0):  
        num=num-(input_queue.dequeue())  
        if(num%2==0):  
            temp_queue.enqueue(input_queue.dequeue())  
    while(not temp_queue.is_empty()):  
        temp1=input_queue.dequeue()  
        temp2=temp_queue.dequeue()  
        output_queue.enqueue(temp1+temp2)  
    return output_queue
```

What will be the contents of output_queue after execution of the above function when the given input_queue and num You're being proctored!

Note: The order of elements in options is from Front to Rear

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```
while(not temp_queue.is_empty()):  
    temp1=input_queue.dequeue()  
    temp2=temp_queue.dequeue()  
    output_queue.enqueue(temp1+temp2)  
return output_queue
```

What will be the contents of output_queue after execution of the above function when the given input_queue and num=8 is passed as parameters?

Note: The order of elements in options is from Front to Rear

Assumption: Queue class, with the necessary methods, is available

- 11, 5
- 9
- 16, 11
- 11

Reset

Save

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Question 17

What will be the output of the below Python code?

```
class Gamma:  
    def __init__(self,num):  
        self.val3=num  
  
    def method3(self,num):  
        return self.val3*num  
  
class Alpha:  
    def __init__(self,num1,num2):  
        self.val1=num1  
        self.val2=num2  
  
    def method1(self,num):  
        return num*self.val2  
  
class Beta(Alpha):  
    def __init__(self,num1,num2,ref_gamma):  
        super().__init__(num1,num2)  
        self.ref_gamma=ref_gamma  
  
    def method2(self,num1,num2):  
        if self.val1>=self.val2:  
            return self.method1(num1)  
        else:  
            return self.method1(num1)+self.ref_gamma.method3(num2)
```

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MCQ QUESTIONS

```
def __init__(self,num1,num2,ref_gamma):  
    super().__init__(num1,num2)  
    self.ref_gamma=ref_gamma  
  
def method2(self,num1,num2):  
    if self.val1>=self.val2:  
        return self.method1(num1)  
    else:  
        return self.method1(num1)+self.ref_gamma.method3(num2)  
obj_gamma=Gamma(9)  
obj_beta=Beta(2,4,obj_gamma)  
print(obj_beta.method2(1, 3))
```

27

4

31

21

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Question 18

Consider the code given below:

```
def find_price(product_price_list):
    if len(product_price_list) == 1:
        #Line 1
    else:
        #Line 2
        if price > product_price_list[0]:
            return price
        else:
            return product_price_list[0]
product_price_list = [100, 450, 270, 12, 58, 102, 375]
print(find_price(product_price_list))
```

What must be written in Line 1 and Line 2 in the above code such that the function returns the maximum price for the given input?

Output:

450

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- Line 1: price = product_price_list[0]
- Line 2: price = find_price(product_price_list[1])



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Question 20

What will be the output of the below code?

```
class NonDivisibilityException(Exception):
    pass
class CheckStatus:
    def is_div_by_two(self,list1):
        try:
            for value in list1:
                if value%2!=0:
                    raise NonDivisibilityException()
            print("Divisible by 2")
        except NonDivisibilityException:
            print("Number Exception - Inside")
    try:
        CheckStatus().is_div_by_two([2,13,22,3])
    except NonDivisibilityException:
        print("Number Exception - Outside")
    except Exception as e:
        print("Some error occurred")
    finally:
        print("Inside finally")
print("Success")
```

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Programming

2 3
5 6
8 9
11 12
14 15
17 18
20

Number Exception - Inside
 Number Exception - Outside
 Inside finally
Success

Number Exception - Inside
 Some error occurred
 Inside finally
Success

Divisible by 2
Number Exception - Inside
 Divisible by 2
 Number Exception - Inside
Inside finally
Success

Number Exception - Inside
 Inside finally
Success

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450

- Line 1: price = product_price_list[0]
 Line 2: price = find_price(product_price_list[1:])
- Line 1: return product_price_list[0]
 Line 2: price = find_price(product_price_list[1:])
- Line 1: return product_price_list[0]
 Line 2: price= find_price(product_price_list)
- Line 1: return product_price_list[0]
 Line 2: return find_price(product_price_list[1:])

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Question 19

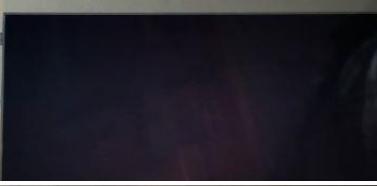
Consider the following python function, the objective of the code is to record the details of trains:

```
def train_details(train,coach_type,source,destination,journey_time, seating_capacity,
                  pantry_service, blankets_service ):
    record = "Train starts from "+ source+ " and reaches "+destination
    if(train=="Freight"):
        record+="with a journey duration of "+journey_time+" hours"
    elif(train=="Passenger"):
        record+="with seating capacity of "+seating_capacity
        if(coach_type=="Sleeper"):
            record+=pantry_service+" is available in train"
        elif(coach_type=="AC Sleeper"):
            record+=blankets_service+" is available in train"
```

What will be the optimal class structure if this is to be rewritten in Object Oriented Programming?

- 4 classes: Train as the parent class. Freight, Sleeper and ACSleeper as the child classes of Train
- 4 independent classes: Freight, Passenger, Sleeper and ACSleeper
- 5 classes: Train as the parent class. Freight and Passenger as the child classes of Train. Sleeper and ACSleeper as the child classes of Passenger
- 3 classes: Train as the parent class. Freight and Passenger as the child classes of Train

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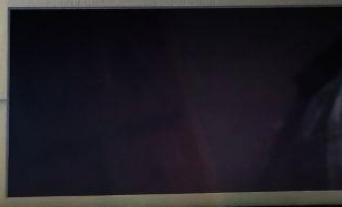
```
record+="with a journey duration of "+journey_time+" hours"
elif(train=="Passenger"):
    record+="with seating capacity of "+seating_capacity
    if(coach_type=="Sleeper"):
        record+=pantry_service+" is available in train"
    elif(coach_type=="AC Sleeper"):
        record+=blankets_service+" is available in train"
```

What will be the optimal class structure if this is to be rewritten in Object Oriented Programming?

- 4 classes: Train as the parent class. Freight, Sleeper and ACSleeper as the child classes of Train
- 4 independent classes: Freight, Passenger, Sleeper and ACSleeper
- 5 classes: Train as the parent class. Freight and Passenger as the child classes of Train. Sleeper and ACSleeper as the child classes of Passenger
- 3 classes: Train as the parent class. Freight and Passenger as the child classes of Train

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Question 1

Consider a MongoDB collection named **customer** given below:

```
db.customer.insert([{"_id":1001, "custname": "Sam", "acctnumber":10001},  
{"_id":1003, "custname": "Jose", "acctnumber":10002},  
{"_id":1004, "custname": "Antony", "acctnumber":10003},  
{"_id":1005, "custname": "Maria", "acctnumber":10008},  
{"_id":1002, "custname": "Ethan", "acctnumber":10004},  
{"_id":1006, "custname": "Dany", "acctnumber":10007}]);
```

Jim executed the following mongodb statements:

```
db.customer.update({}, {$set: {custtype: "Regular"}},  
db.customer.update({_id:1002}, {$set: {custtype: "Privileged"}},  
db.customer.update({_id: 1003}, {"custname": "Jack"}),  
db.customer.insert({_id: 1008, "custname": "Jose", "custtype": "Privileged"}),  
db.customer.find();
```

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```
db.customer.update({_id:1003}, {"custname": "Jack"});  
db.customer.insert({_id:1008, "custname": "Jose", "custtype": "Privileged"}),  
db.customer.find();
```

Which of the following options are TRUE after executing the above statements sequentially?

[Choose TWO correct options]

- Five customers are of "Regular" type
- Two customers do not have account number
- Four customers do not have customer type
- Two customers have same name

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Question 2

Consider the table **staff** given below:

Table: staff

staffid	name	age	gender	supervisorid
S101	Tom	27	M	S107
S102	Alice	35	F	S103
S103	Mathew	39	M	S106
S104	Barry	40	M	S103
S105	Jane	37	F	S106
S106	John	42	M	S107
S107	Maria	45	F	

Note: Empty cell signifies NULL

Query:

```
SELECT s1.staffid , s1.name, s1.gender , s1.supervisorid FROM staff s1 INNER JOIN staff s2 ON  
s1.supervisorid = s2.supervisorid WHERE s1.gender <> s2.gender AND s1.age < 40 ;
```

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How many row(s) will be fetched in the output when the above query is executed?

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S106	John	42	M	S107
S107	Maria	45	F	

Note: Empty cell signifies NULL

Query:

```
SELECT s1.staffid , s1.name, s1.gender , s1.supervisorid FROM staff s1 INNER JOIN staff s2 ON  
s1.supervisorid = s2.supervisorid WHERE s1.gender <> s2.gender AND s1.age < 40 ;
```

How many row(s) will be fetched in the output when the above query is executed?

- 1
- 4
- 2
- 3

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Question 3

Consider the table **student** given below:

Table: student

studentid	location	ranking
S101	Delhi	2
S102	Mysore	1
S103	Mumbai	5
S104	Chennai	4
S105	Hyderabad	3
S106	Delhi	4
S107	Bangalore	5

Query:

```
SELECT ranking, LENGTH(SUBSTR (location, 3)), studentid  
FROM student  
WHERE ranking > 2 AND LENGTH(SUBSTR (location, 3)) > 4  
ORDER BY 2, 1 DESC;
```

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What will be value of studentid in the third row when the above query is executed?

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S106	Delhi	4
S107	Bangalore	5

Query:

```
SELECT ranking, LENGTH(SUBSTR (location, 3)), studentid  
FROM student  
WHERE ranking > 2 AND LENGTH(SUBSTR (location, 3)) > 4  
ORDER BY 2, 1 DESC;
```

What will be value of studentid in the third row when the above query is executed?

- S107
- S104
- S105
- S103

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Question 4

Consider the following relational schemas:

teacher (teacherid, designation, salary)

allocation (teacherid, subject, classroom)

Following are the functional dependencies:

teacherid \rightarrow designation

designation \rightarrow salary

teacherid \rightarrow salary

teacherid, subject \rightarrow classroom

Which of the following option is TRUE for the relations given above?

- teacher is in 2NF and allocation is in 1NF
- teacher is in 2NF and allocation is in 3NF

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designation \rightarrow salary

teacherid \rightarrow salary

teacherid, subject \rightarrow classroom

6
9

Which of the following option is TRUE for the relations given above?

- teacher is in 2NF and allocation is in 1NF
- teacher is in 2NF and allocation is in 3NF
- teacher is in 1NF and allocation is in 2NF
- teacher is in 3NF and allocation is in 3NF

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Question 5

Consider the table **booksale** given below:

Table: booksale

saleid	bookid	salelocation	price	studentid
SA1	B1	Boston	50	S3
SA2	B2	San Francisco	35	S1
SA3	B3	Seattle	40	S6
SA4	B2	New York	35	S4
SA5	B1	Detroit	50	S2
SA6	B3	Boston	40	S5
SA7	B3	Seattle	40	S6



Query:

```
SELECT bookid, COUNT(*) NUMBEROFSALES  
FROM booksale WHERE price <= 40  
GROUP BY bookid HAVING COUNT(*) IN  
(SELECT COUNT(*) FROM booksale  
WHERE salelocation LIKE '%e' GROUP BY salelocation);
```

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What will be the output when the above query is executed?

BOOKID	NUMBEROFSALES
B2	2
B3	3

BOOKID	NUMBEROFSALES
B2	2

BOOKID	NUMBEROFSALES
B3	3

BOOKID	NUMBEROFSALES
B3	2



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Question 6

Consider the tables **patient** and **consultation** given below:

Table: patient

patientid	patientname	city
101	Kevin	New York
102	Mike	Boston
103	Maria	Chicago
104	Jenny	New York
105	Jack	Chicago

Table: consultation

consultationid	patientid	fees
1	101	200
2	102	700
3	103	600
4	101	500
5	105	500
6	104	500

Query:

```
SELECT p.patientid, p.patientname, p.city FROM patient p
INNER JOIN consultation c ON p.patientid = c.patientid
GROUP BY p.patientid, p.patientname, p.city HAVING SUM(fees) >
(SELECT MAX(SUM(fees)) FROM patient p1 INNER JOIN consultation c1 ON
p1.patientid = c1.patientid WHERE patientname LIKE '%e%' GROUP BY c1.patientid) - 200 ;
```

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Which of the following will be the part of output when the above query is executed?

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PATIENTID	PATIENTNAME	CITY
105	Jack	Chicago
103	Maria	Chicago

6

9



PATIENTID	PATIENTNAME	CITY
103	Maria	Chicago
101	Kevin	New York



PATIENTID	PATIENTNAME	CITY
101	Kevin	New York
105	Jack	Chicago



PATIENTID	PATIENTNAME	CITY
101	Kevin	New York
104	Jenny	New York

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Question 7

Consider the tables **customer** and **purchase** given below:

Table: customer

custid	custname	custtype
C1076	Jones	Regular
C1074	Felix	Privileged
C1065	Jack	Regular
C1056	James	Privileged
C1055	Adam	Privileged

Table: purchase

purchaseid	custid	prodid	quantity	amount
P101	C1076	PR1001	2	400
P102	C1055	PR1002	1	300
P103	C1074	PR1003	2	400
P104	C1056	PR1001	3	300
P105	C1065	PR1002	2	300

Query:

```
SELECT custid, custname FROM customer WHERE custtype = 'Privileged' AND custid IN  
(SELECT custid FROM purchase WHERE amount > 300);
```

What will be the output when above query is executed?

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CUSTID	CUSTNAME
C1056	James

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CUSTID	CUSTNAME
C1056	James

CUSTID	CUSTNAME
C1056	James

CUSTID	CUSTNAME
C1056	James
C1074	Felix

CUSTID	CUSTNAME
C1056	James
C1074	Felix
C1076	Jones

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CUSTID CUSTNAME

C1056	James
-------	-------

CUSTID CUSTNAME

C1074	Felix
-------	-------

CUSTID CUSTNAME

C1074	Felix
C1076	Jones

CUSTID CUSTNAME

C1055	Adam
C1065	Jack
C1074	Felix

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doj	DATE DEFAULT SYSDATE	NOT NULL
empdesignation	VARCHAR2(10)	

ALTER Statements:

- i. **ALTER TABLE** employee **RENAME COLUMN** dept **TO** empdept;
- ii. **ALTER TABLE** employee **MODIFY** empdesignation **VARCHAR2(10);**
- iii. **ALTER TABLE** employee **ADD** empdesignation **VARCHAR2(10);**
- iv. **ALTER TABLE** employee **ADD** DOJ **DEFAULT SYSDATE;**
- v. **ALTER TABLE** employee **MODIFY** DOJ **DEFAULT SYSDATE;**

Identify the ALTER statements that will provide the Desired table structure:

- i, iii and iv
- i, ii and v
- i, iii and v
- ii, iii and iv

Reset **Save**

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Question 9

Consider the table **worker** given below:

Table: worker

workerid	mobilenumber	jobtitle	wagesperday
W01	9874563210	Carpenter	300
W02	9874158462	Electrician	500
W03	9812568321	Carpenter	400
W04	9874758240	Electrician	500
W05	8745630125	Plumber	380
W06	8795468213	Painter	460
W07	7589463015	Carpenter	300
W08	7589462018	Painter	400

workerid is the primary key.

Following index is created on the table worker:

IX1 - jobtitle, wagesperday

Which of the following queries will use TABLE SCAN?

[Choose TWO correct options]

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workerid is the primary key.

Following index is created on the table worker:

IX1 - jobtitle, wagesperday

Which of the following queries will use TABLE SCAN?

[Choose TWO correct options]



- SELECT** workerid, jobtitle, mobilenumber **FROM** worker **WHERE** workerid = 'W06';
- SELECT** mobilenumber **FROM** worker **WHERE LOWER** (jobtitle) = 'electrician';
- SELECT** workerid, mobilenumber, jobtitle **FROM** worker **WHERE** jobtitle = 'Carpenter';
- SELECT** mobilenumber, workerid **FROM** worker **WHERE** wagesperday > 300;

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Question 10

Consider the table **scholarshipdetail** given below:

Table: scholarshipdetail

studentid	percentage	amount	issuedate
101	85.99	2500	1-Jan-19
102	91.04	4000	5-Jun-18
103	98.54	5000	12-Feb-19
104	89.99	2500	31-May-19
105	97.72	5000	12-Dec-18
106	95.04	4000	5-Jun-19
107	86.25	2500	28-Apr-19

Query:

```
SELECT studentid, percentage FROM scholarshipdetail
WHERE issuedate BETWEEN '01-Jan-19' AND '5-Jun-19' AND amount >= 4000
UNION
SELECT studentid, amount FROM scholarshipdetail
WHERE percentage > 86 AND amount >= 4000;
```

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Query:

```
SELECT studentid, percentage FROM scholarshipdetail
WHERE issuedate BETWEEN '01-Jan-19' AND '5-Jun-19' AND amount >= 4000
UNION
SELECT studentid, amount FROM scholarshipdetail
WHERE percentage > 86 AND amount >= 4000;
```

What will be the values of studentid in output when the above query is executed?

- 103, 102, 106, 105
- 103, 102, 103, 102, 106, 105, 106
- 103, 102, 103, 106, 105, 106
- 103, 105, 106, 103

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Question 1

Two pipes X and Y can separately fill a tank in 10 minutes and 15 minutes respectively; both the pipes are opened together and 4 minutes later tap connecting pipe X is turned off.

How much more time will it take to fill the tank?

- 10 minutes
- 6.5 minutes
- 5 minutes
- 3.33 minutes

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Question 2

A,B and C started walking from the same point in different directions; A walked East and B walked West in a straight line. C walked south. At the end of 1 hour they were all at the same distance from the starting point. If the distance between A and B is 6 kms, what is the distance between A and C.

- 4 kms
- 3 kms
- 3.5 kms
- 4.24 kms

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Question 5

Padmavati speaks the truth 3 times out of 4 and Vareesha speaks the truth 7 times out of 10. Both of them assert that a white hat has been removed from a basket containing hats of 6 different colours.

What is the probability of finding the white hat in the basket?

- 21/40
- 19/40
- 3/40
- 1/36

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Question 4

In a combo pack of a pencil and eraser, the pencil costs Re.1 more than the eraser.

If the price of the combo is Rs.1.10, what is the price of the eraser?

- 10 Paise
- 5 Paise
- 15 Paise
- None of the options

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Question 3

A pipe can fill water at the rate of 35 litres per 10 minutes.

This pipe when opened into a tank that is $\frac{2}{3}$ rd empty, fills that tank in 12 minutes.

What is the capacity of this tank?

- 42 Litres
- 21 Litres
- 63 Litres
- 75 Litres

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Question 5

Padmavati speaks the truth 3 times out of 4 and Vareesha speaks the truth 7 times out of 10. Both of them assert that a white hat has been removed from a basket containing hats of 6 different colours.

What is the probability of finding the white hat in the basket?

- $\frac{21}{40}$
- $\frac{19}{40}$
- $\frac{3}{40}$
- $\frac{1}{36}$

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Question 6

A tub contains a solution with 83% water and 17% spirit. 10 litres of the solution is removed and replaced with water. The proportion of spirit is now $15\frac{1}{9}\%$. How much does the tub hold?

- 70 litres
- 80 litres
- 90 litres
- 100 litres

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Question 7

A series of discounts of 20%, 10% and 10% is equivalent to a single discount of

- 34.6
- 40
- 36
- 35.2

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Question 8

Varsha is expected to maintain an average attendance of 9.25 hours per day but she typically spends 8.5 hours a day. After 8 working days she realized the shortfall in her attendance and plans to work an additional 70 minutes over her usual timings every day to make up for the shortfall.

How many working days will she need to meet the required average?

- 3
- 5
- 4.5
- None of the options

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Question 9

The apartment complex management is planning to take the children to a cinema. They have informed the parents about the rules for this event, which are as follows:

- I. Every child below 4 years of age has to be accompanied by both parents.
- II. Children of 4 - 12 years of age must be accompanied by either of the parents.
- III. Children above 12 years must not be accompanied by any parent.

The management is planning to send a few representatives and assistants along in the following way.

A. For a group of every 10 children or a part thereof, there must be a representative. B. For a group of every 5 representatives or a part thereof, there must be an assistant.

If there are exactly 63 people from the apartment in the cinema and there are children of only below 4 years of age and those between 4 and 12, then which of the following must be true?

- I. The number of below 4 year olds must be odd.
- II. The number of 4 -12 years old must be odd.
- III. The number of students must be odd.

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I only



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Aptitude

2	3
5	6
8	9

A. For a group of every 10 children or a part thereof, there must be a representative. B. For a group of every 5 representatives or a part thereof, there must be an assistant.

If there are exactly 63 people from the apartment in the cinema and there are children of only below 4 years of age and those between 4 and 12, then which of the following must be true?

- I. The number of below 4 year olds must be odd.
- II. The number of 4 -12 years old must be odd.
- III. The number of students must be odd.

- I only
- II only
- I and III only
- II and III only

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Question 10

The length, breadth and height of a room are in the ratio 3:2:1. If the breadth and height are halved while the length is doubled, then the total surface area of the four walls of the room will

- Remain the same
- Decrease by 13%
- Decrease by 30%
- Decrease by 15%

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