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# Week 6 : Assignment

**The due date for submitting this assignment has passed.**

**Due on 2023-09-06, 23:59 IST.**

## Assignment submitted on 2023-09-06, 15:53 IST

1) What will be the output of the following code? ***1 point***

```
import string

def shift(word,value):

    letters = string.ascii_lowercase
    new = ''

    for i in range(len(word)):

        if word[i] in letters:

            index = letters.index(word[i])
            new = new + letters[(index+value)%26]

        else:

            new = new + word[i]

    return new
```

- Shift every letter in a given word by value.

**Week 9 ()**

**Week 10 ()**

**Week 11 ()**

**Week 12 ()**

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- ○ Shift every letter in a given word by 1.
- ○ Shift every letter in a given word by 26.
- ○ Returns the same word.

Yes, the answer is correct.
Score: 1

Accepted Answers:
*Shift every letter in a given word by value.*

2) In the list L = [4,6,7,4,6,2,1], What is the index of element '7'? ***1 point***

- ○ 0
- ○ 1
- ◉ 2
- ○ 3

Yes, the answer is correct.
Score: 1

Accepted Answers:
*2*

3) Which of the following is true about recursion? ***1 point***

- ☐ Recursion always performs better than non-recursive code.
- ☑ Recursive code is easier to debug.
- ☑ The base case is necessary for recursion.
- ☑ Recursive code can be shorter than non-recursive code

Yes, the answer is correct.
Score: 1

Accepted Answers:
*Recursive code is easier to debug.*
*The base case is necessary for recursion.*
*Recursive code can be shorter than non-recursive code*

4) What will be the output of the following program? ***0 points***

```
1  def recursive(num):
2
3      if(num == 1):
4          return 1
5
6      return num*(num-1)
```

- ○ Calculating sum of first n terms.
- ◉ Calculating product of first n terms.
- ○ Calculating power of first n terms.
- ○ Calculating sum of last n terms.

Yes, the answer is correct.
Score: 0

Accepted Answers:
*Calculating product of first n terms.*

5) In Caesar cipher,the mediator needs to make maximum of how many trails to break the code? ***1 point***

- 1
- 26
- no trail needed
- 10

Yes, the answer is correct.
Score: 1

Accepted Answers:
*26*

6) What is the output of the following program? ***0 points***

```
def recursive(L):

    return L[-1] * recursive(L[:-1])

print(recursive([1,2,3,4,5,6,7,8,9,10]))
```

- 3628800
- Runs into an infinite loop
- 55
- Syntax error

Yes, the answer is correct.
Score: 0

Accepted Answers:
*Runs into an infinite loop*

7) What's the correct code for Binary search? ***0 points***

```
def Binary(L,find, start, end):

    mid = int((start+end)/2)

    if(start < end):
        if(L[end] == find):
            return end
        else:
            return -100


    if(L[mid] == find):
        return mid

    elif(find > L[mid]):
        return Binary(L, find, mid + 1, end)

    else:
        return Binary(L, find, start, mid-1)
```

```
def Binary(L,find, start, end):

    mid = int((start+end)/2)

    if(start == end):
        if(L[end] == find):
            return end
        else:
            return -100


    if(L[mid] == find):
        return mid

    elif(find > L[mid]):
        return Binary(L, find, start, mid - 1)

    else:
        return Binary(L, find, mid + 1, end)
```

```
def Binary(L,find, start, end):

    mid = int((start+end)/2)

    if(start == end):
        if(L[end] == find):
            return end
        else:
            return -100


    if(L[mid] == find):
        return mid

    elif(find > L[mid]):
        return Binary(L, find, mid + 1, end)

    else:
        return Binary(L, find, start, mid-1)
```

```
def Binary(L,find, start, end):

    mid = int((start+end)/2)

    if(start >= end):
        if(L[end] == find):
            return end
        else:
            return -100


    if(L[mid] != find):
        return mid

    elif(find > L[mid]):
        return Binary(L, find, mid + 1, end)

    else:
        return Binary(L, find, start, mid-1)
```

No, the answer is incorrect.
Score: 0

Accepted Answers:

```
def Binary(L,find, start, end):

    mid = int((start+end)/2)

    if(start == end):
        if(L[end] == find):
            return end
        else:
            return -100


    if(L[mid] == find):
        return mid

    elif(find > L[mid]):
        return Binary(L, find, mid + 1, end)

    else:
        return Binary(L, find, start, mid-1)
```

8) Which of the following is TRUE about MIN-MAX strategy? ***1 point***

- Maximize the chances of your winning and minimize the changes of the opponent winning
- The game with min-max strategy can never be drawn
- Minimize the chances of your winning and maximize the chances of the opponent winning
- All the above are true

Yes, the answer is correct.
Score: 1

Accepted Answers:
*Maximize the chances of your winning and minimize the changes of the opponent winning*

9) A program that is written recursively cannot be written in a non-recursive manner. ***1 point***

- True
- False

Yes, the answer is correct.
Score: 1

Accepted Answers:
*False*

10) what will be the output of the following program? ***1 point***

```
def recursive(num):

    if(num==1):
        print('*')
        return

    if(num%2 == 0):
        print('*'*num)
        recursive(num-1)
        return
    else:
        recursive(num-1)
        return

recursive(10)
```

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- Runs into infinite loop

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Yes, the answer is correct.
Score: 1

Accepted Answers:

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