L3: Conditional and Loops Practice Question

1-Tut: Predict the Output

Send Feedback

Output of the following program will be :

```
n = 15
#Check If the number is between 1 to 10
if n>=1 and n<=10:
    print("too low")

#Check If the number is between 11 to 20
elif n>=10 and n<=20:
    print("medium")

#Check If the number is between 21 to 30
elif n>=20 and n<=30:
    print("large")
#Check if the number is greater than 30
else:
    print("too large")
```

Options

too low
medium
large
too large

Correct Answer : B

2-Tut : Predict the Output

Send Feedback

Output of the following program will be :

```
n = 10
#Check If the number is between 1 to 10
if n>=1 and n<=10:
    print("too low")

#Check If the number is between 10 to 20
elif n>=10 and n<=20:
    print("medium")

#Check If the number is between 20 to 30
elif n>=20 and n<=30:
    print("large")
```

```
#Check if the number is greater than 30
else:
    print("too large")
```

Options

too low

medium

large

too large

Correct Answer: A

3-Tut : Figure out the output

Send Feedback

What will the following code segment print?

```
x = 15
if x <= 15:
    print("Inside if")
else:
    print("Inside else")
```

Options

Inside If
Inside else
Inside If Inside else

Correct Answer: A

4-Tut : Multiple Ifs

Send Feedback

Consider the following piece of code -

```
x = 5
if x < 6:
    print("Hello")
if x == 5:
    print("Hi")
else:
    print("Hey")
```

Which of the above 3 print statement(s) will be executed?

Options print("Hello") , print("Hi") , print("Hey") , All 3 will execute

Correct Answer : Hello , Hi

Relational and Logical Operators, else if

5-Tut : Check number

Send Feedback

Given an integer n, find if n is positive, negative or 0.

If n is positive, print "Positive"

If n is negative, print "Negative"

And if n is equal to 0, print "Zero".

Input Format :

Integer n

Output Format :

"Positive" or "Negative" or "Zero" (without double quotes)

Constraints :

-100 <= n <= 100

Sample Input 1 : 10

Sample Output 1 : Positive

Sample Input 2 : -10

Sample Output 2 : Negative

```
# Read input as specified in the question
# Print output as specified in the question
n = int(input())
if(n == 0):
    print("Zero")
elif(n > 0):
    print("Positive")
else:
    print("Negative")
```

Nested Conditional

6-Tut : Conditional Question

Send Feedback

What will the following code segment print?

```
if (10 < 0) and (0 < -10):
    print("A")
elif (10 > 0) or False:
    print("B")
else:

    print("C")
```

Options

A
B
C
B & C

Correct Answer : B

7-Tut : Conditional Question

Send Feedback

What will be the following code segment print?

```
if True or True:
    if False and True or False:
        print('A')
    elif False and False or True and True:
        print('B')
    else:
        print('C')
else:
    print('D')
```

Options

A
B
C
D
B & D

Correct Answer: B

While Loop

8-Tut : Sum of n numbers

Send Feedback

Given an integer n, find and print the sum of numbers from 1 to n.

Note : Use while loop only.
Input Format : Integer n
Output Format : Sum
Constraints :
1 <= n <= 100
Sample Input : 10

Sample Output : 55

```
# Read input as specified in the question
# Print output as specified in the question
n = int(input())
sum = 0
i = 1
while(i <= n):
    sum = sum + i
    i = i+1
print(sum)
```

9-Tut : Sum of Even Numbers

Send Feedback

Given a number N, print sum of all even numbers from 1 to N.

Input Format : Integer N
Output Format : Required Sum
Sample Input 1 : 6
Sample Output 1 : 12

```
## Read input as specified in the question.
## Print output as specified in the question.
N = int(input())
sum = 0
i = 2
while(i <= N):
    sum = sum + i
    i = i+ 2
print(sum)
```

Primality Checking

10-Tut: Predict the Output

Send Feedback

What will be the output of the following code segment?

```
i=0
while i<10:
print(i)

i=i+1
```

Options

Numbers from 0 to 9 will be printed
Only 0 will be printed
Indentation Error

None of the above

Correct Answer : C

11-Tut : Predict the Output

Send Feedback

What will be the output of the following code segment?

```
i=0
while i<10:
    print(i)
i = i+1
```

Options

Numbers from 0 to 9 will be printed
Infinite times 0 will be printed
Indentation Error
None of the above

Correct Answer : B

12-Tut : Predict the Output

Send Feedback

What will be the output of the following code segment?

```
i=0

while i<10:

    print(i)

    i= i+1
```

Options

Numbers from 0 to 9 will be printed
Infinite times 0 will be printed
Indentation Error
None of the above

Correct Answer : A

Nested Loops

13-Tut : Fahrenheit to Celsius

Send Feedback

Given three values - Start Fahrenheit Value (S), End Fahrenheit value (E) and Step Size (W), you need to convert all Fahrenheit values from Start to End at the gap of W, into their corresponding Celsius values and print the table.

Input Format :

3 integers - S, E and W respectively

Output Format :

Fahrenheit to Celsius conversion table. One line for every Fahrenheit and corresponding Celsius value. On Fahrenheit value and its corresponding Celsius value should be separate by tab ("\t")

Constraints :

0 <= S <= 80

S <= E <= 900

0 <= W <= 40

Sample Input 1:

0

100

20

Sample Output 1:

0 -17

20 -6

40 4

60 15

80 26

100 37

Sample Input 2:

20

119

13

Sample Output 2:

20 -6

33 0

46 7

59 15

72 22

85 29

98 36

111 43

Explanation For Input 2:

We need to start calculating the Celsius values for each of the Fahrenheit Value which starts from 20. So starting from 20 which is the given Fahrenheit start value, we need to compute its corresponding Celsius value which computes to -6. We print this information as <Fahrenheit Value> a tab space"\t" <Celsius Value> on each line for each step of 13 we take to get the next value of Fahrenheit and extend this idea till we reach the end that is till 119 in this case. You may or may not exactly land on the end value depending on the steps you are taking.

 # Read input as specified in the question

```
# Print output as specified in the question
S = int(input())
E = int(input())
W = int(input())

while(S <= E):
    p = (S - 32)*5/9
    p = int(p)
    print(S,"\t", p)
    S = S + W
```

14-Ass : Calculator

Send Feedback

Write a program that performs the tasks of a simple calculator. The program should first take an integer as input and then based on that integer perform the task as given below.

1. If the input is 1, then 2 integers are taken from the user and their sum is printed.

2. If the input is 2, then 2 integers are taken from the user and their difference(1st number - 2nd number) is printed.

3. If the input is 3, then 2 integers are taken from the user and their product is printed.

4. If the input is 4, then 2 integers are taken from the user and the quotient obtained (on dividing 1st number by 2nd number) is printed.

5. If the input is 5, then 2 integers are taken from the user and their remainder(1st number mod 2nd number) is printed.

6. If the input is 6, then the program exits.

7. For any other input, then print "Invalid Operation".

Note: Each answer in the next line.

Input format:

Take integers as input, in accordance with the description of the question.

Constraints:

Time Limit: 1 second

Output format:

The output lines must be as prescribed in the description of the question.

Sample Input:

3

1

2

4

4

2

1

3

2

7

6

Sample Output:

2

2

5

Invalid Operation

Explanation of the sample input

The first number given is 3, so that means two more numbers will be given and we'll have to multiply them and show the result. The two numbers are 1 and 2. Their product is 2, so 2 is displayed first in the output. Similarly, all the numbers are processed in groups of three. The first number tells the operation and the next two numbers tell on which numbers the operation is done. This applies to numbers from 1 to 5. If the input is 6 (like it is at the end), two more numbers will NOT be provided, you simply have to exit the program. Also, if the input is any number except 1 to 6 (like 7 which is at the second last), then you simply have to print "Invalid Operation"

```
# Write your code here
n=int(input())
while (n!=6):
    if n==1:
        a=int(input())
        b=int(input())
        print(a+b)
    if n==2:
        a=int(input())
        b=int(input())
        print(a-b)
    if n==3:
        a=int(input())
        b=int(input())
        print(a*b)
    if n==4:
        a=int(input())
        b=int(input())
        print(a//b)
    if n==5:
        a=int(input())
        b=int(input())
        print(a%b)
    if n < 1 or n > 6:
        print("Invalid Operation")
    n=int(input())
```

15-Ass : Reverse of a number

Send Feedback

Write a program to generate the reverse of a given number N. Print the corresponding reverse number.

Note : If a number has trailing zeros, then its reverse will not include them. For e.g The reverse of 10400 will be 401 instead of 00401.

Input format :

Integer N

Output format :

Corresponding reverse number

Constraints:

0 <= N < 10^8

Sample Input 1 :

1234

Sample Output 1 :

4321

Sample Input 2 :

1980

Sample Output 2 :

891

```
#Write Your Code Here
n=int(input())
rev=0
while(n>0):
    dig=n%10
    rev=rev*10+dig
    n=n//10
print(rev)
```

16-Ass : Palindrome number

Send Feedback

Write a program to determine if a given number is palindrome or not. Print true if it is palindrome, false otherwise.

Palindromes are the numbers for which the reverse is exactly the same as the original one. For eg. 121

Sample Input 1 : 121

Sample Output 1 : true

Sample Input 2 : 1032

Sample Output 2 : false

```
number = int(input())

reverse = 0
temp = number

while(temp > 0):
    Reminder = temp % 10
    reverse = (reverse * 10) + Reminder
    temp = temp //10
if(number == reverse):
    print("true")
else:
```

```
13.     print("false")
```

17-Ass : Sum of even & odd

Send Feedback

Write a program to input an integer N and print the sum of all its even digits and sum of all its odd digits separately.

Digits mean numbers, not the places! That is, if the given integer is "13245", even digits are 2 & 4 and odd digits are 1, 3 & 5.

Input format :

Integer N

Output format :

Sum_of_Even_Digits Sum_of_Odd_Digits
(Print first even sum and then odd sum separated by space)

Constraints

0 <= N <= 10^8

Sample Input 1:

1234

Sample Output 1:

6 4

Sample Input 2:

552245

Sample Output 2:

8 15

Explanation for Input 2:

For the given input, the even digits are 2, 2 and 4 and if we take the sum of these digits it will come out to be 8(2 + 2 + 4) and similarly, if we look at the odd digits, they are, 5, 5 and 5 which makes a sum of 15(5 + 5 + 5). Hence the answer would be, 8(evenSum) <single space> 15(oddSum)

```
1.  ## Note : For printing multiple values in one line, put them inside print separated by space.
2.  ## You can follow this syntax for printing values of two variables val1 and val2 separated by
    space
3.  ## print(val1, " ", val2)
4.  Number=int(input())
5.  even=0
6.  odd=0
7.  while(Number>0):
8.      Reminder = Number %10
9.      if(Reminder % 2 == 0):
10.         even=even + Reminder
11.     else:
12.         odd= odd + Reminder
13.     Number = Number //10
14. print(even," ",odd)
```

18-Ass : Nth Fibonacci Number

Send Feedback

Nth term of Fibonacci series F(n), where F(n) is a function, is calculated using the following formula -

F(n) = F(n-1) + F(n-2),
Where, F(1) = F(2) = 1

Provided N you have to find out the Nth Fibonacci Number.

Input Format :

The first line of each test case contains a real number 'N'.

Output Format :

For each test case, return its equivalent Fibonacci number.

Constraints:

1 <= N <= 10000

Where 'N' represents the number for which we have to find its equivalent Fibonacci number.

Time Limit: 1 second

Sample Input 1: 6

Sample Output 1: 8

Explanation of Sample Input 1:

Now the number is '6' so we have to find the "6th" Fibonacci number
So by using the property of the Fibonacci series i.e

[1, 1, 2, 3, 5, 8]

So the "6th" element is "8" hence we get the output.

```
## Read input as specified in the question.
## Print output as specified in the question.

n = int(input())
s = 1
e = 1
if(n < 3):
    print(e)
else:
    i = 3
    while(i <= n):
        temp = e
        e = s + e
        s = temp
        i = i + 1
    print(e)
```