Module 1: Introduction to Python

Case Study Solution

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1. Write a program which will find factors of given number and find whether the factor is even or odd.

   Hint: Use Loop with if-else statements

Solution

```
num=50

for i in range(1,num+1):
  rem=num%i

  if(rem==0):
    if(i%2==0):
      print("Factor is even:",i)
    else:
      print("factor is odd: ",i)

  else:
    pass
```

2. Write a code which accepts a sequence of words as input and prints the words in a sequence after sorting them alphabetically.

   Hint: In case of input data being supplied to the question, it should be assumed to be a console input.

Solution

```
my_str = "Welcome to Python"


# breakdown the string into a list of words
words = my_str.split()
```

```
# sort the list
words.sort()

# display the sorted words

print("The sorted words are:")
for word in words:
  print(word)
```

3. Write a program, which will find all the numbers between 1000 and 3000 (both included) such that each digit of a number is an even number. The numbers obtained should be printed in a comma separated sequence on a single line.

   Hint: In case of input data being supplied to the question, it should be assumed to be a console input. Divide each digit with 2 and verify is it even or not.

Solution

```
values = []
for i in range(1000,3001):
   s = str(i)
   if (int(s[0])%2==0) and (int(s[1])%2==0) and (int(s[2])%2==0) and
(int(s[3])%2==0):
      print(values.append(s))

print (",".join(values))
```

4. Write a program that accepts a sentence and calculate the number of letters and digits.

Suppose if the entered string is: Python0325

Then the output will be:

LETTERS: 6

DIGITS:4

Hint: Use built-in functions of string.

Solution

```
s = “aac34520”
d={"DIGITS":0, "LETTERS":0}
for c in s:
   if c.isdigit():
      d["DIGITS"]+=1
   elif c.isalpha():
      d["LETTERS"]+=1
   else:
      pass
print("LETTERS", d["LETTERS"])
print("DIGITS", d["DIGITS"])
```

5. Design a code which will find the given number is Palindrome number or not.

Hint: Use built-in functions of string.

Solution

```
# change this value for a different output
my_str = 'aIbohPhoBiA'

# make it suitable for caseless comparison
my_str = my_str.casefold()

# reverse the string
rev_str = reversed(my_str)

# check if the string is equal to its reverse
if list(my_str) == list(rev_str):
  print("It is palindrome")
else:
  print("It is not palindrome")
```