Assignment -1

Python Programming

Assignment Date	19 September 2022
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Maximum Marks	2 Marks

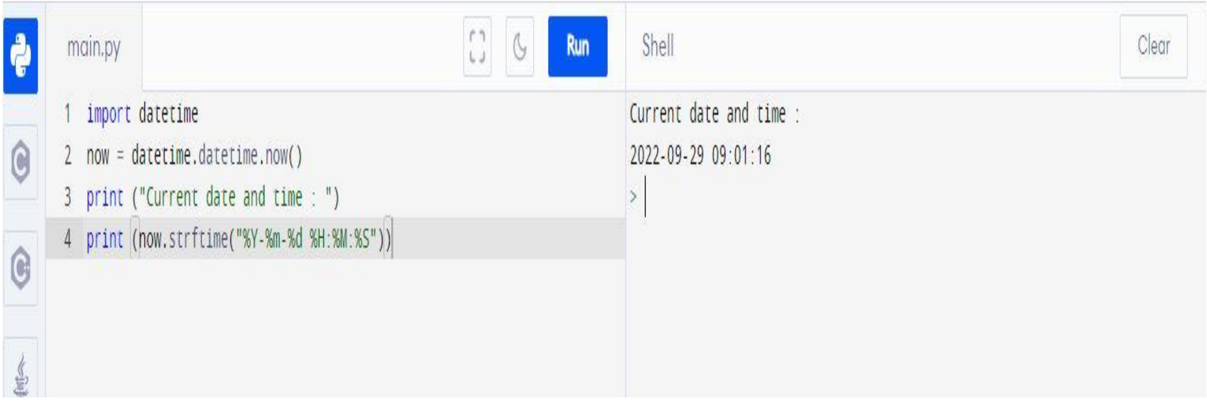
Question 1:

Write a Python program to display the current date and time

Solution:

```
import datetime

now = datetime.datetime.now()

print ("Current date and time : ")

print (now.strftime("%Y-%m-%d %H:%M:%S"))
```

Output:



```
import datetime
now = datetime.datetime.now()
print ("Current date and time : ")
print (now.strftime("%Y-%m-%d %H:%M:%S"))
```

```
Current date and time :
2022-09-29 09:01:16
>
```

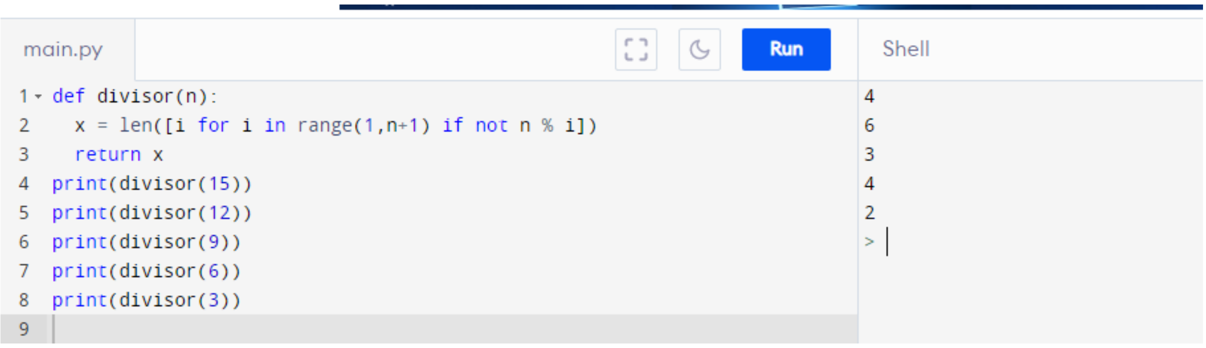
Question 2:

Write a Python program to find the number of divisors of a given integer is even or odd.

Solution:

```
def divisor(n):

  x = len([i for i in range(1,n+1) if not n % i])

  return x

print(divisor(15))
print(divisor(12))

print(divisor(9))

print(divisor(6))

print(divisor(3))
```

Output:



```
def divisor(n):
  x = len([i for i in range(1,n+1) if not n % i])
  return x
print(divisor(15))
print(divisor(12))
print(divisor(9))
print(divisor(6))
print(divisor(3))
```

```
4
6
3
4
2
>
```

Question 3:

Write a Python program to compute the amount of the debt in n months. The borrowing amount is $100,000 and the loan adds 5% interest of the debt and rounds it to the nearest 1,000 above month by month.

Input:

An integer n (0 ≤ n ≤ 100)

Input number of months: 7

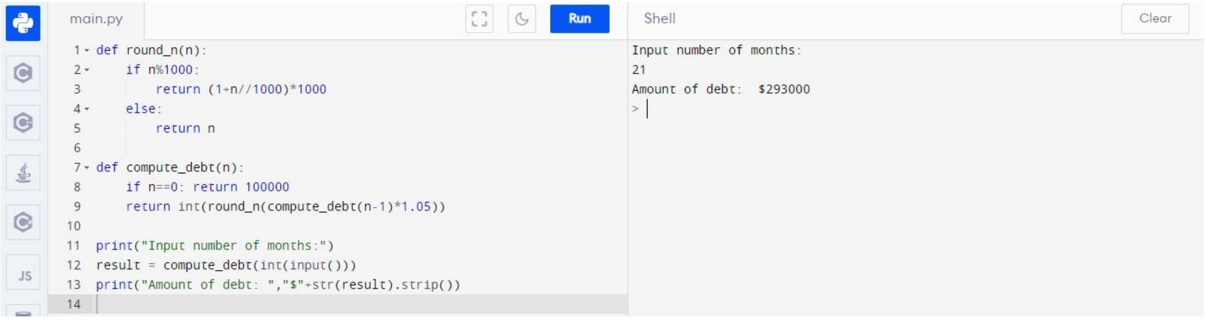
Amount of debt: $144000

Solution:

```
def round_n(n):

  if n%1000:

    return (1+n//1000)*1000

  else:

    return n
```

```
def compute_debt(n):

    if n==0: return 100000

    return int(round_n(compute_debt(n-1)*1.05))



print("Input number of months:")

result = compute_debt(int(input()))

print("Amount of debt: ","$"+str(result).strip())
```

Output:



```
def round_n(n):
    if n%1000:
        return (1+n//1000)*1000
    else:
        return n

def compute_debt(n):
    if n==0: return 100000
    return int(round_n(compute_debt(n-1)*1.05))

print("Input number of months:")
result = compute_debt(int(input()))
print("Amount of debt: ","$"+str(result).strip())
```

```
Input number of months:
21
Amount of debt:  $293000
>
```

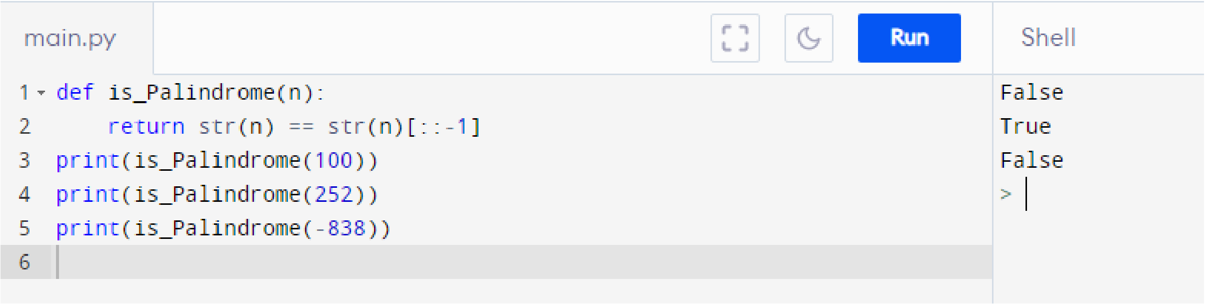
Question 4:

Write a Python program to check whether a given integer is a palindrome or not.

Solution:

```
def is_Palindrome(n):
    return str(n) == str(n)[::-1]
print(is_Palindrome(100))
print(is_Palindrome(252))
print(is_Palindrome(-838))
```

Output:



```python
def is_Palindrome(n):
    return str(n) == str(n)[::-1]
print(is_Palindrome(100))
print(is_Palindrome(252))
print(is_Palindrome(-838))

```

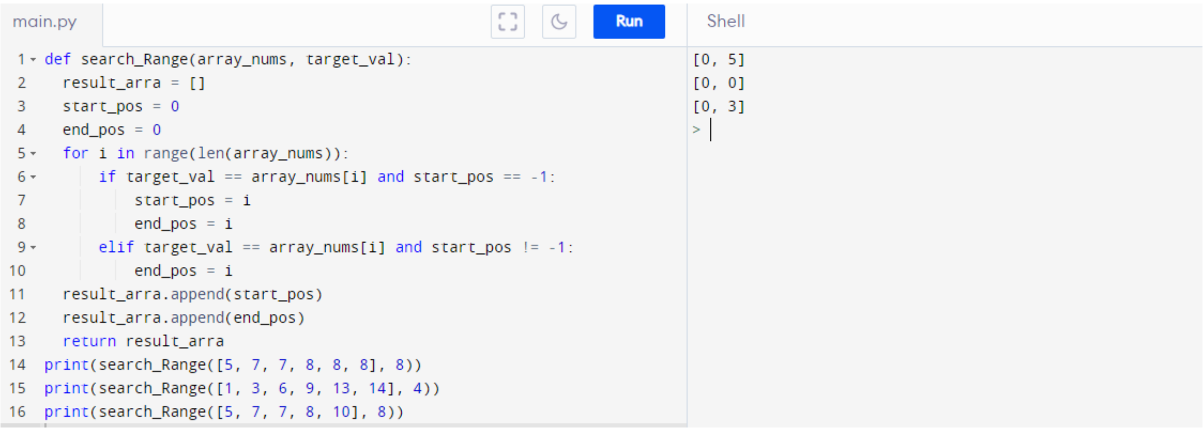
```
False
True
False
>
```

Question 5:
Write a Python program to find the starting and ending position of a given value in a given array of integers, sorted in ascending order.

Solution:

```
def search_Range(array_nums, target_val):
 result_arra = []
 start_pos = 0
 end_pos = 0
 for i in range(len(array_nums)):
   if target_val == array_nums[i] and start_pos == -1:
     start_pos = i
     end_pos = i
   elif target_val == array_nums[i] and start_pos != -1:
     end_pos = i
 result_arra.append(start_pos)
 result_arra.append(end_pos)
 return result_arra
print(search_Range([5, 7, 7, 8, 8, 8], 8))
print(search_Range([1, 3, 6, 9, 13, 14], 4))
print(search_Range([5, 7, 7, 8, 10], 8))
```

Output:



```python
def search_Range(array_nums, target_val):
  result_arra = []
  start_pos = 0
  end_pos = 0
  for i in range(len(array_nums)):
      if target_val == array_nums[i] and start_pos == -1:
          start_pos = i
          end_pos = i
      elif target_val == array_nums[i] and start_pos != -1:
          end_pos = i
  result_arra.append(start_pos)
  result_arra.append(end_pos)
  return result_arra
print(search_Range([5, 7, 7, 8, 8, 8], 8))
print(search_Range([1, 3, 6, 9, 13, 14], 4))
print(search_Range([5, 7, 7, 8, 10], 8))
```

```
[0, 5]
[0, 0]
[0, 3]
>
```