

Finlatics Data Science

Capsule 2

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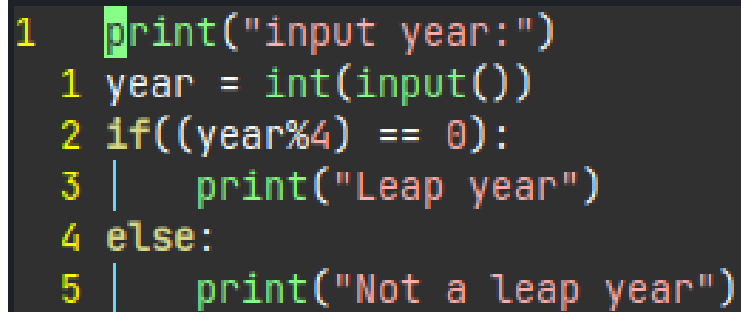
Task 1

Leap year

1.1 PYTHON CODE:

```
1 print("input year:")
2 year = int(input())
3 if((year%4) == 0):
4     print("Leap year")
5 else:
6     print("Not a leap year")
```

1.2 Code



```
1 print("input year:")
  1 year = int(input())
2 if((year%4) == 0):
3     print("Leap year")
4 else:
5     print("Not a leap year")
```

Figure 1.1: Code

1.3 Output

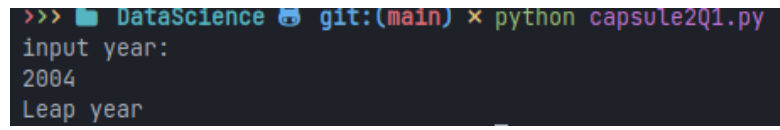
A terminal window with a dark background. The prompt is '>>>' followed by a file explorer icon, 'DataScience', a GitHub icon, 'git:(main)', a terminal icon, and 'python capsule2Q1.py'. The output shows 'input year:', the user input '2004', and the program output 'Leap year'.

Figure 1.2: Output

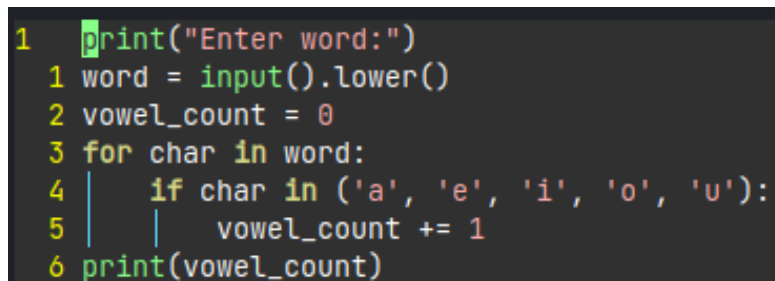
Task 2

Vowel Count

2.1 PYTHON CODE:

```
1 print("Enter word:")
2 word = input().lower()
3 vowel_count = 0
4 for char in word:
5     if char in ('a', 'e', 'i', 'o', 'u'):
6         vowel_count += 1
7 print(vowel_count)
```

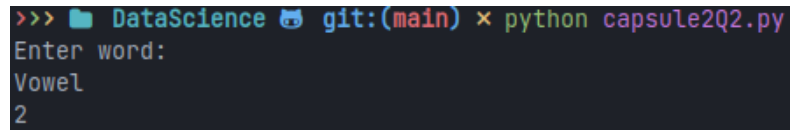
2.2 Code



```
1 print("Enter word:")
2 word = input().lower()
3 vowel_count = 0
4 for char in word:
5     if char in ('a', 'e', 'i', 'o', 'u'):
6         vowel_count += 1
7 print(vowel_count)
```

Figure 2.1: Code

2.3 Output

A terminal window with a dark background. The prompt is '>>>'. The first line shows a folder icon, the text 'DataScience', a GitHub icon, 'git:(main)', a red 'x' icon, and the command 'python capsule2Q2.py'. The second line is 'Enter word:'. The third line is 'Vowel'. The fourth line is '2'.

```
>>> DataScience git:(main) x python capsule2Q2.py
Enter word:
Vowel
2
```

Figure 2.2: Output

Task 3

Name starting with 'A'

3.1 PYTHON CODE:

```
1 import re
2 print("input 6 names")
3 names = []
4 for i in range(6):
5     names.append(input())
6 pattern = r'^a'
7 print("\noutput:")
8 for name in names:
9     if re.search(pattern, name.lower()):
10         print(name)
```

3.2 Code

```
1 import re
2 print("input 6 names")
3 names = []
4 for i in range(6):
5     names.append(input())
6 pattern = r'^a'
7 print("\noutput:")
8 for name in names:
9     if re.search(pattern, name.lower()):
10         print(name)
```

Figure 3.1: Code

3.3 Output

```
>>> DataScience git:(main) × python capsule2Q3.py
input 6 names
Avae
Karrie
Maria
Alba
Jose
Troy

output:
Avae
Alba
```

Figure 3.2: Output

Task 4

Even-Squared, Odd-Cubed

4.1 PYTHON CODE:

```
1 print("input 10 numbers")
2 numbers = []
3 for i in range(10):
4     numbers.append(int(input()))
5 print("\noutput:")
6 for number in numbers:
7     if number%2==0:
8         print(number**2)
9     else:
10        print(number**3)
```

4.2 Code

```
1 print("input 10 numbers")
2 numbers = []
3 for i in range(10):
4     numbers.append(int(input()))
5 print("\noutput:")
6 for number in numbers:
7     if number%2==0:
8         print(number**2)
9     else:
10        print(number**3)
```

Figure 4.1: Code

4.3 Output

```
>>> DataScience git:(main) × python capsule2Q4.py
input 10 numbers
10
12
1
2
3
4
5
6
7
8
output:
100
144
1
4
27
16
125
36
343
64
```

Figure 4.2: Output

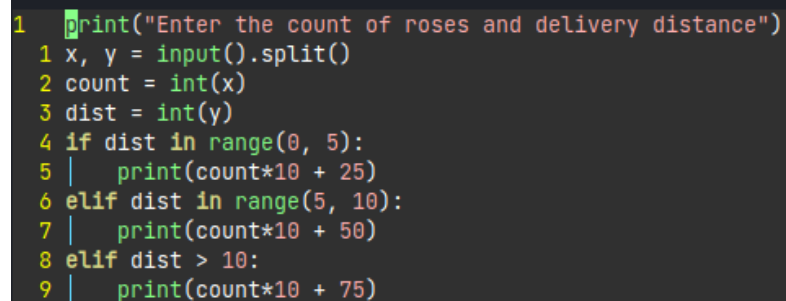
Task 5

Flower Shop

5.1 PYTHON CODE:

```
1 print("Enter the count of roses and delivery distance")
2 x, y = input().split()
3 count = int(x)
4 dist = int(y)
5 if dist in range(0, 5):
6     print(count*10 + 25)
7 elif dist in range(5, 10):
8     print(count*10 + 50)
9 elif dist > 10:
10    print(count*10 + 75)
```

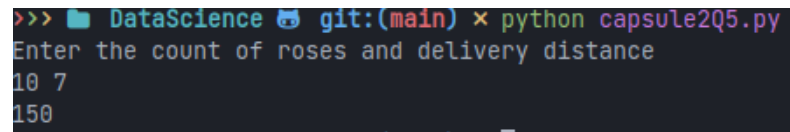
5.2 Code



```
1 print("Enter the count of roses and delivery distance")
2 x, y = input().split()
3 count = int(x)
4 dist = int(y)
5 if dist in range(0, 5):
6     print(count*10 + 25)
7 elif dist in range(5, 10):
8     print(count*10 + 50)
9 elif dist > 10:
10    print(count*10 + 75)
```

Figure 5.1: Code

5.3 Output

A terminal window with a dark background. The prompt is '>>>'. The first line shows the directory 'DataScience' and the command 'python capsule2Q5.py'. The second line is the prompt 'Enter the count of roses and delivery distance'. The third line shows the input '10 7'. The fourth line shows the output '150'.

```
>>> DataScience git:(main) × python capsule2Q5.py
Enter the count of roses and delivery distance
10 7
150
```

Figure 5.2: Output