1.Introduction:

Morse code Interpreter is implement in python 3.6.4. The assignment is divided into 4 tasks.

Task 1: Building a dictionary of Morse code.

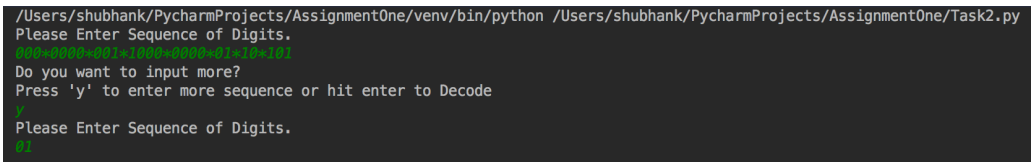
Task 2: Reading Morse code sequence.

Task 3: Decoding Morse code sequence.

Task 4: Analyzing decoded characters.

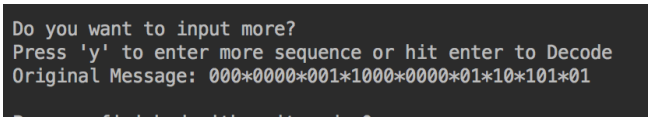
2. How to run program:

I. Download 29421934_A1.zip file, extract Task1.py, Task2.py, Task3.py and Task4.py
II. Import all the tasks file in pyCharm or any other IDE. All the task files need to be in the **same** project.
III. Running Task1.py will display Morse code dictionary key and value pair.
IV. Running Task2.py will require user input, multiple inputs are separated by asterix '*' or hit Enter key. e.g. 000*0000*001*1000*0000*01*10*101



- Entering any character apart from 0,1 and * is considered invalid and will be rejected.

- To decode message press enter after valid input



V. Running Task3 will decode the original message

```
Original Message: 000*0000*001*1000*0000*01*10*101
Translated Message: shubhank
```

VI. Running Task 4 will display the occurrence of decoded character.

```
Please Enter Sequence of Digits.
000*0000*001*1000*0000*01*10*101
Do you want to input more?
Press 'y' to enter more sequence or hit enter to Decode

Original Message: 000*0000*001*1000*0000*01*10*101

Translated Message: shubhank

Character  a has 1  occurrences.
Character  b has 1  occurrences.
Character  c has 0  occurrences.
Character  d has 0  occurrences.
Character  e has 0  occurrences.
Character  f has 0  occurrences.
Character  g has 0  occurrences.
Character  h has 2  occurrences.
Character  i has 0  occurrences.
Character  j has 0  occurrences.
Character  k has 1  occurrences.
Character  l has 0  occurrences.
Character  m has 0  occurrences.
Character  n has 1  occurrences.
Character  o has 0  occurrences.
Character  p has 0  occurrences.
Character  q has 0  occurrences.
Character  r has 0  occurrences.
Character  s has 1  occurrences.
Character  t has 0  occurrences.
Character  v has 0  occurrences.
Character  u has 1  occurrences.
Character  w has 0  occurrences.
Character  x has 0  occurrences.
Character  y has 0  occurrences.
Character  z has 0  occurrences.
Character  0 has 0  occurrences.
Character  1 has 0  occurrences.
Character  2 has 0  occurrences.
Character  3 has 0  occurrences.
Character  4 has 0  occurrences.
Character  5 has 0  occurrences.
Character  6 has 0  occurrences.
Character  7 has 0  occurrences.
Character  8 has 0  occurrences.
Character  9 has 0  occurrences.

Process finished with exit code 0
```

3. Key Notes:

- In a single line, multiple inputs are separated by '*'. Press enter followed by 'y' to give input multiple times.
- *01* is considered as a valid input
- ****** is considered as a valid input, although there will be no decoded value, because, * is considered as 'space' to separate characters

References

- How to use import statement? https://docs.python.org/3/reference/import.html
- Style guide for python code https://www.python.org/dev/peps/pep-0008/
- Pad zeroes to string https://python-reference.readthedocs.io/en/latest/docs/str/ljust.html
- Regex In python https://docs.python.org/2/library/re.html