Computational Thinking and Problem Solving (COMP1002) and Problem Solving Methodology in Information Technology (COMP1001)

Assignment 1

ZHANG WengYu 21098431d

Q1.

Input: **inNum** = an integer given by the user
Set **outNum** to 0 to store the output value
Set an exponent **exp** to 1
Check **inNum** is a positive integer
    If it is negative
        return **"Please enter a positive integer!"**
Repeat
    Get the reminder **rNum** = **inNum** % 2
    Let reminder **rNum** multiplied by **exp** to put **rNum** in a right decimal position, then add **rNum** to the output value **outNum**, **outNum** = **outNum** + **rNum*exp**
    Multiply **exp** by 10 to let **exp** point to next higher decimal position
    Get the floored quotient of **inNum** and 2, assign to **inNum** using **inNum** = **inNum** // 2
Until **inNum** is equal to 0
Output: print out the **outNum**

Q2.

Input: **inText** = the given text string.
Set **nowOrd**, **charCount**, **wordCount** to 0
Set **nowChar** to ‘’
Repeat getting a single character **nowChar** from **inText** from the first character to the end
    Get the ordinal code **nowOrd** of **nowChar** using **nowOrd** = ord(**nowChar**)
    Check **nowChar** is a letter
    if 65 <= **nowOrd**<= 90 or 97 <= **nowOrd**<= 122
        charCount = **charCount** + 1 to count the number of letters
    else (nowOrd is not in that range which means a punctuation detected)
        Check if **charCount >= 5**
            wordCount = **wordCount** + 1 count the number of words having >=5 letters
        set **charCount** to 0
Until finished getting all characters
Output: print out the value of **wordCount**

Q3.

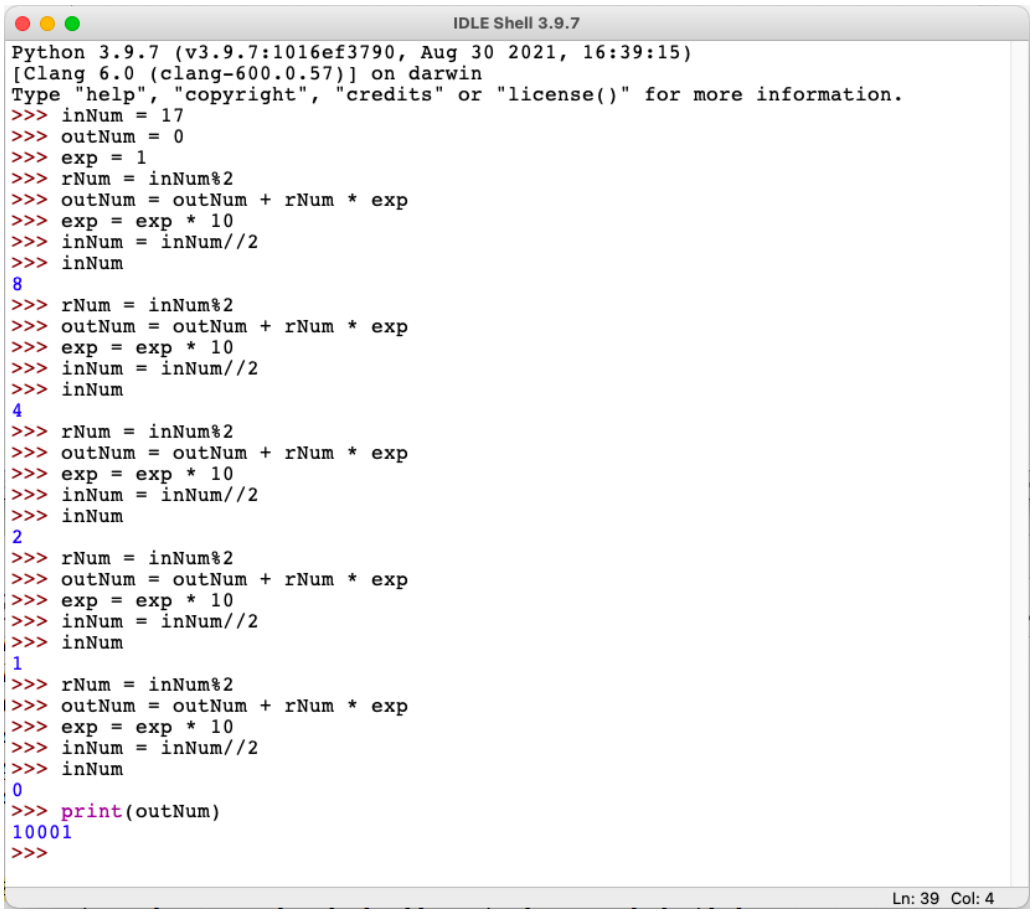
Bob's action is like a procedure.

The input is that he has to buy 3 oranges, 2 apples and 6 eggs and corresponding money from Alice.

The output is the change of the table which is the table first be cleaned then put all items on it.

Because Bob's action gives nothing to Alice but change the state of table from dirty to clean with all items on it.

Q4.



The binary representation of 17 is 10001.