CSE 101 - Introduction to Programming
Tutorial 2

Q1. Identify the sign, mantissa, exponent and base in 5.6 * 10^8 when represented in IEEE Single Precision Floating Point Representation.

Q2. Represent each of the following using the 8-bit floating-point format
(3 bits for the mantissa, 4 bits for exponent)
a. 2.25
b. -80.0
c. 1/32

Q3. What are `the absolute and relative errors of the approximation of the value π.

Q4. A resistor labelled as 240 Ω is actually 243.32753 Ω. What are the absolute and relative errors of the labelled value?

Q5. What are reference counting and garbage collection?

Q6. What are the basic types of errors in programming?

Q7. What are the meaning of scalar and non-scalar data types?

Q8. What does Dynamic Typing Language mean?

Q9. Write Python Programs:

a) To print Square Root of a Number 'num'
b) To Solve quadratic Equation Ax^2+Bx+c

Q10. a) What will be the output of following commands:

```
>>> S="INTRODUCTION"
>>>S[2:8]
>>>S[::-1]
>>>S[:-5]
>>>S[::1]
>>>S[::2]
```

b) Write a Python program to print a string where '$' is after the 1st character of S='INTRODUCTION' and before the last character of S String.