

CSE 101 - Introduction to Programming

Tutorial 1

Q1. What are the bases in the following number systems?

- a. Decimal 10
- b. Binary 2
- c. Octal 8
- d. Hexadecimal 16

Q2. What are the set of valid digits in the following number systems?

- e. Decimal 0-9
- f. Binary 0-1
- g. Octal 0-7
- h. Hexadecimal 0-F

Q3. Convert from Decimal to Binary:

- i. 614 1001100110
- j. 0.1640625 0.0010101

Q4. Convert from Binary to Decimal:

- a. 11001001 201
- b. 110010.01 50.25

Q5. Convert from Hexadecimal to Binary:

- a. FAB1 1111101010110001
- b. 1234 0001001000110100

Q6. Convert from Binary to Hexadecimal and Octal:

- a. 11011100 DC, 334
- b. 10101 15, 25

Q7. Convert into offset and 2's complement with 8 bit representation:

- a. 6 10000110, 00000110
- b. -25 01100111, 11100111

Q8. Perform operation using 2's complement the following operations:

- a. 55 - 3 00110111 + 11111101 = 00110100
- b. 7 - 120 00000111 + 10001000 = 10001111

Q9. What is the range of numbers that can be represented using 8 bits in 2's complement form? -128 to +127

Q10. What is the range of numbers that can be represented using 8 bits in Offset or Biased representation?
-128 to +127