Discussion and Errata

CS10003 : Programming and Data Structures (Theory)

Modulo Operator with Negative Numbers

- x = 5 % (-3);
- y = (-5) % (3);
- z = (-5) % (-3);
- printf("%d ,%d ,%d", x, y, z);

- Answer is: 2, -2, -2. Why?

Modulus Operator

- The following is an identity to understand the result:
  - a=(a/b) * b **+** a%b
- Also, division of integers involving negative operands always **truncate towards zero**.
- Dry runs of our example:
- 5/(-3) is -1=> (-1) * (-3) + 5%(-3) = 5 => 5%(-3) = 2
- (-5)/3 is -1=> (-1) * 3 + (-5)%3 = -5 => (-5)%3 is -2
- (-5)/(-3) is 1 =>(1)*(-3)+ (-5)%(-3)=-5 => (-5)%(-3)=-2

Useful Tips: The sign of the result of a % operation, according to recent standards, is the same as the dividend's one.