TEMP009 - Principles of Programming

Digital Assignment 1

Course Owners

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1. Analyse the following expression and understand the computation of the expressions:

a. 4*10+2**3==3<<1+3

b. 10* ~ 5+1090>>4

c. 10 + 5 + ~ 6 ** 2

d. 121 ^ 134 + (10-5) ** 2

e. 521 | 125 -2 & 5 ^ 65 + 2

f. not 10 +12-22

g. 234 + (not 30 - 5 *6)**12

h. 13 * 4 // 23 % 5

i. 56 * 89 - 34 + 287 * (2<<2==8)

2. A digital game is played by kids in which they have to touch numbers from 1 to 5. For each number a simple expression is as below. At the end of the press form a arithmetic expression with minimum number of brackets but form an expression that will execute in the order specified by the child. Initial value is a

1 - addition with b

2 - raised to power c

3 - Integer division d

4 - left shift e

5 - unary operator

Each operation has to be performed with the previous value computed.

For example, if the child presses 3, 4, 5, 1, 2 then the expression should be (~(a//d<<e)+b)**c

3. A financial company doubles the amount in an account for every ‘m’ years. When a customer wants to close his investment they calculate the total amount to given as follows:

i. For every ‘m’ years, doubles the amount in the account

ii. For each remaining year, multiply the initial investment ‘p’ by r1

Iii. For every left out month, multiply half of the initial amount by r2

Write a single expression in a python code to calculate the total money received after ‘n’ years and ‘k’ months

For example, if p = 1500, m = 3, r1 = 5%, r2 = 2.5%, n = 10, k = 4 total amount received will be 12225.00