**Operators Associativity and Precedence Assignment**

1. Use operator associativity, evaluate the following expressions and predict the output

a. x = 34 + 12/4 – 56

b. 12 + 3 - 4 / 2 < 3 + 1

c. (2 + (3 + 2) ) \* 10

d. 34 + 12/4 – 45

A screenshot of a computer screen

Description automatically generated

2. Rewrite the following expressions with improved readability

a. age < 18 && height < 48 || age > 60 && height > 72

b. char name value

c. char $name

\* a: (age < 18 && height < 48) || (age > 60 && height > 72)

\* b: char nameValue;

\* c: char name;

3. Predict the value of a after each statement.

int main(void)

{

int i = 10;

char a = 'd';

a += 10;

a \*= 5;

a /= 4;

a %= 2;

a \*= a + i;

return 0;

}

* int main(void) {

int i = 10;

* char a = 'd'; ->ASCII Value of d is 100
* a += 10; ->a=100+10=110
* a \*= 5; ->a=110\*5=550
* a /= 4; ->a=550/4=137
* a %= 2; -> a=137%2=1
* a \*= a + i; -> a=1\*(1+10) =11

return 0;

}

Output: a=11.

4. Consider a = 12, b = 3, predict the output of the following.

a. (a>100) && (b<10)

b. (a==4) && (b==2)

c. (a==11) && (a++)

-> a. (a > 100) && (b < 10)

\* a > 100 is false

\* b < 10 is true

\* false && true is false

->b. (a == 4) && (b == 2)

· a == 4 is false

· b == 2 is false

· false && false is false

->c. (a == 11) && (a++)

· a == 11 is false

· a++ increments a but the expression evaluates to the original value of a, which is 12

· false && true is false

5. Consider a = 10, b = 11, predict the output of the following.

a. (a>10) || (b<10)

b. a || 12.12

c. a || b

d. !(a > 5)

->a. (a > 10) || (b < 10)

· a > 10 is false

· b < 10 is false

· false || false is false

->b. a || 12.12

· a is 10, which is true (non-zero values are true)

· true || 12.12 is true

->c. a || b

· a is 10, which is true

· b is 11, which is true

· true || true is true

->d. !(a > 5)

\* a > 5 is true

\*!true is false

6. Consider int age = 10, height = 45, year = 2000; Predict the output of the following.

a. (age < 12 && height < 48) || (age > 65 && height > 72)

b. (year % 4 == 0 && year % 100 != 0 ) || (year % 400 == 0);

èa. (age < 12 && height < 48) || (age > 65 && height > 72)

· age < 12 is true

· height < 48 is true

· true && true is true

· age > 65 is false

· height > 72 is false

· false && false is false

· true || false is true

->b. (year % 4 == 0 && year % 100 != 0) || (year % 400 == 0)

· year % 4 == 0 is true

· year % 100 ! = 0 is true

· true && true is true

· year % 400 == 0 is false

· true || false is true