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

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);

**🡺a. (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