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ECE 1310.04

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Homework 03

Q1. 2.11 Fill in the blanks:

1. What arithmetic operations are on the same level of precedence as multiplication?
   * Division and modulus
2. When parentheses are nested, which set of parentheses is evaluated first in arithmetic expression?
   * The ones that are nested the deepest – innermost pair.
3. A location in the computer’s memory that may contain different values at various times throughout the execution of a program is called a variable.

Q2. 2.14 Given the algebraic equation *y = ax3 + 7*, which of the following, if any, are correct C++ statements for this equation?

1. y = a \* x \* x \* x + 7;
2. y = a \* x \* x \* (x + 7);
3. y = (a \* x) \* x \* (x + 7);
4. y = (a \* x) \* x \* x + 7;
5. y = a \* (x \* x \* x) + 7;
6. y = a \* x \* (x \* x + 7);

Q3. 2.19 *(Arithmetic, Smallest, and Largest)* Write a program that inputs three integers from the keyboard and prints the sum, average, product, smallest and largest of these numbers. The screen dialog should appear as follows:

|  |
| --- |
| Input three different integers: 13 27 14  Sum is 54  Average is 18  Product is 4914  Smallest is 13  Largest is 27 |

A computer screen with text on it

Description automatically generated

//Main Function

using namespace std;

int main(int argc, char\*\* argv)

{

//declare variables

int num1, num2, num3, sum, avg, prod, small, large;

//prompt user input

cout << "Input three integers: ";

cin >> num1 >> num2 >> num3;

//process numbers

sum = num1 + num2 + num3;

avg = sum / 3;

prod = num1 \* num2 \* num3;

//find smallest

if (num1 <= num2 && num1 <= num3)//if num1 is less than or equal to num2 and less than or equal to num3

small = num1;//then num1 is the smallest

if (num2 <= num1 && num2 <= num3)//if num2 is less than or equal to num1 and less than or equal to num3

small = num2;//then num2 is the smallest

if (num3 <= num2 && num3 <= num1)//if num3 is less than or equal to num2 and less than or equal to num1

small = num3;//then num3 is the smallest

//find largest

if (num1 >= num2 && num1 >= num3)//if num1 is less than or equal to num2 and less than or equal to num3

large = num1;//then num1 is the largest

if (num2 >= num1 && num2 >= num3)//if num2 is less than or equal to num1 and less than or equal to num3

large = num2;//then num2 is the largest

if (num3 >= num2 && num3 >= num1)//if num3 is less than or equal to num2 and less than or equal to num1

large = num3;//then num3 is the largest

//output results

cout << "Sum is " << sum << endl

<< "Average is " << avg << endl

<< "Product is " << prod << endl

<< "Smallest is " << small << endl

<< "Largest is " << large << endl;

return 0;

}

Q4. 2.25 *(Multiples)* Write a program that reads in two integers and determines and prints if the first is a multiple of the second. [*Hint*: Use the modulus operator.]

A computer screen with text

Description automatically generated

//Main Function

using namespace std;

int main(int argc, char\*\* argv)

{

//declare variables

int num1, num2, mod;

//prompt user input

cout << "Input two integers, bigger one first: ";

cin >> num1 >> num2;

//process numbers

mod = num1%num2;

//output results

if (mod == 0)

cout << num1 << " is a multiple of " << num2 << ".\n";

else

cout << num1 << " is not a nultiple of " << num2 << ".\n";

return 0;

}