```cpp
/*
    @title Lab 1-1
    @description Write a program that asks the user to enter two numbers. The program should use the conditional
    operator/expression to determine which number is the smaller and which is the larger of the two. [2 points]
    @author Aryan Gupta
    @version 1.2
 */

#include <iostream>
#include <cstdlib>

using namespace std;

int main() {
    //instantize vars
    int num1, num2, largerNum;
    num1 = num2 = largerNum = 0;

    //ask numbers from user
    cout << "Please enter 2 numbers" << endl;

    cout << "Number 1:: ";
    cin >> num1;
    cout << num1 << endl;

    cout << "Number2:: ";
    cin >> num2;
    cout << num2 << endl;

    //calculate larger number
    largerNum = (num1 < num2)? num2 : num1;

    //output larger Number
    cout << "The larger number is: " << largerNum << endl;
    cout << "Good Bye!";

    return 0;
}
```

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```
/*
    @title Lab 1-1
    @description Write a program that asks the user to enter two numbers. The program should use the conditional operator/expression to determine which number is the smaller and which is the larger of the two. [2 points]
    @author Aryan Gupta
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 */

#include <iostream>
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using namespace std;

int main() {
    //instantize vars
    int num1, num2, largerNum;
    num1 = num2 = largerNum = 0;

    //ask numbers from user
    cout << "Please enter 2 numbers" << endl;

    cout << "Number 1:: ";
    cin >> num1;
    cout << num1 << endl;

    cout << "Number2:: ";
    cin >> num2;
    cout << num2 << endl;

    //calculate larger number
    largerNum = (num1 < num2)? num2 : num1;

    //output larger Number
    cout << "The larger number is: " << largerNum << endl;
    cout << "Good Bye!";

    return 0;
}
```

Success comments (0)

stdin copy

```
10
4
```

stdout copy

```
Please enter 2 numbers
Number 1:: 10
Number2:: 4
The larger number is: 10
Good Bye!
```

```cpp
/*
    @title Lab 1-2
    @description Write a program that asks the user to enter a number within the range of numbers equivalent to the
    lowercase alphabet. Use a switch statement to display the alphabet version of that number. [5 points]
    @author Aryan Gupta
    @version 1.1
*/

#include <iostream>
#include <cstdlib>

using namespace std;

int main() {
    //instansize vars
    int num = 0;

    //get num
    cout << "Please enter a number between 97 and 122" << endl;
    cout << ":: ";
    cin >> num;
    cout << num << endl;

    //default output
    cout << "That number in ASCII is: ";
    //convert
    switch(num){
        case 97:
            cout << "a" << endl; break;
        case 98:
            cout << "b" << endl; break;
        case 99:
            cout << "c" << endl; break;
        case 100:
            cout << "d" << endl; break;
        case 101:
            cout << "e" << endl; break;
        case 102:
            cout << "f" << endl; break;
        case 103:
            cout << "g" << endl; break;
        case 104:
            cout << "h" << endl; break;
        case 105:
            cout << "i" << endl; break;
        case 106:
            cout << "j" << endl; break;
        case 107:
            cout << "k" << endl; break;
        case 108:
            cout << "l" << endl; break;
        case 109:
            cout << "m" << endl; break;
```

```
        case 110:
            cout << "n" << endl; break;
        case 111:
            cout << "o" << endl; break;
        case 112:
            cout << "p" << endl; break;
        case 113:
            cout << "q" << endl; break;
        case 114:
            cout << "r" << endl; break;
        case 115:
            cout << "s" << endl; break;
        case 116:
            cout << "t" << endl; break;
        case 117:
            cout << "u" << endl; break;
        case 118:
            cout << "v" << endl; break;
        case 119:
            cout << "w" << endl; break;
        case 120:
            cout << "x" << endl; break;
        case 121:
            cout << "y" << endl; break;
        case 122:
            cout << "z" << endl; break;
        default:
            //for reals tho, so much work and processing power
            cout << endl << "You dont follow directions do you? But guess what, I'm smarter
            than you" << endl;
            cout << "That number is " << (char)num << " in ASCII" << endl;
            break;
    }

    //for those that want to know an easier way
    //that whole switch statement can be simplifyed to this one line:
    //cout << (char)num << endl;
    return 0;
}
```

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```
/*
    @title Lab 1-2
    @description Write a program that asks the user to enter a number within the range of numbers equivalent to the lowercase alphabet. Use a switch statement to display the alphabet version of that number. [5 points]
    @author Aryan Gupta
    @version 1.1
*/

#include <iostream>
#include <cstdlib>

using namespace std;

int main() {
    //instansize vars
    int num = 0;

    //get num
    cout << "Please enter a number between 97 and 122" << endl;
    cout << ":: ";
    cin >> num;
    cout << num << endl;

    //default output
    cout << "That number in ASCII is: ";
    //convert
    switch(num){
        case 97:
            cout << "a" << endl; break;
        case 98:
            cout << "b" << endl; break;
        case 99:
            cout << "c" << endl; break;
        case 100:
            cout << "d" << endl; break;
        case 101:
            cout << "e" << endl; break;
        case 102:
            cout << "f" << endl; break;
        case 103:
            cout << "g" << endl; break;
        case 104:
            cout << "h" << endl; break;
        case 105:
            cout << "i" << endl; break;
        case 106:
            cout << "j" << endl; break;
        case 107:
            cout << "k" << endl; break;
        case 108:
            cout << "l" << endl; break;
        case 109:
            cout << "m" << endl; break;
        case 110:
```

```
54.             cout << "n" << endl; break;
55.         case 111:
56.             cout << "o" << endl; break;
57.         case 112:
58.             cout << "p" << endl; break;
59.         case 113:
60.             cout << "q" << endl; break;
61.         case 114:
62.             cout << "r" << endl; break;
63.         case 115:
64.             cout << "s" << endl; break;
65.         case 116:
66.             cout << "t" << endl; break;
67.         case 117:
68.             cout << "u" << endl; break;
69.         case 118:
70.             cout << "v" << endl; break;
71.         case 119:
72.             cout << "w" << endl; break;
73.         case 120:
74.             cout << "x" << endl; break;
75.         case 121:
76.             cout << "y" << endl; break;
77.         case 122:
78.             cout << "z" << endl; break;
79.         default:
80.             //for reals tho, so much work and processing power
81.             cout << endl << "You dont follow directions do you? But guess what, I'm smarter than you" << endl;
82.             cout << "That number is " << (char)num << " in ASCII" << endl;
83.             break;
84.     }
85.
86.     //for those that want to know an easier way
87.     //that whole switch statement can be simplifyed to this one line:
88.     //cout << (char)num << endl;
89.     return 0;
90. }
```

Success comments (0)

stdin copy

```
106
```

stdout copy

```
Please enter a number between 97 and 122
:: 106
That number in ASCII is: j
```

ı't load

ı't load

```
/*
    @title Lab 1-3
    @description Create a change-counting game that asks the user to enter what coins to use to make exactly one
    dollar. The program should ask the user to enter the number of pennies, nickels, dimes, and quarters. If the total
    value of the coins inserted is equal to one dollar the program should congratulate the user for winning the game.
    Otherwise, the program should display a message indicating whether the amount entered was more or less than one
    dollar. Use constant variables to hold the coin values. [5 points]
    @author Aryan Gupta
    @version 1.1
*/

#include <iostream>
#include <cstdlib>
#include <cmath>

using namespace std;

int main() {
    //instantize constants
    const double PENNY = 0.01;
    const double NICKEL = 0.05;
    const double DIME = 0.10;
    const double QUARTER = 0.25;

    //instantize vars
    int pennies = 0;
    int nickels = 0;
    int dimes = 0;
    int quarters = 0;

    double total = 0.00;

    //ask user
    cout << "Please input the amount of each coin" << endl;

    cout << "Pennies:: ";
    cin >> pennies;
    cout << pennies << endl;

    cout << "Nickels:: ";
    cin >> nickels;
    cout << nickels << endl;

    cout << "Dimes:: ";
    cin >> dimes;
    cout << dimes << endl;

    cout << "Quarters:: ";
    cin >> quarters;
    cout << quarters << endl;

    //calculate (add up all the values)
    total = (double)pennies  * PENNY
```

```
          + (double)nickels  * NICKEL
          + (double)dimes    * DIME
          + (double)quarters * QUARTER;

    //output
    if(fabs(total - 1.0) < .001)
        cout << "Congrats! You win" << endl;
    else if((total - 1.0) > 0.0)
        cout << "Sorry. You lose. You had " << (total - 1.0) << " dollars too much";
    else if((total - 1.0) < 0.0)
        cout << "Sorry. You lose. You need " << (1.0 - total) << " dollars more";

    return 0;
}
```

edit fork download copy

```
/*
    @title Lab 1-3
    @description Create a change-counting game that asks the user to enter what coins to use to make exactly one dollar. The program should ask the user to enter the number of pennies, nickels, dimes, and quarters. If the total value of the coins inserted is equal to one dollar the program should congratulate the user for winning the game. Otherwise, the program should display a message indicating whether the amount entered was more or less than one dollar. Use constant variables to hold the coin values. [5 points]
    @author Aryan Gupta
    @version 1.1
*/

#include <iostream>
#include <cstdlib>
#include <cmath>

using namespace std;

int main() {
    //instantize constants
    const double PENNY = 0.01;
    const double NICKEL = 0.05;
    const double DIME = 0.10;
    const double QUARTER = 0.25;

    //instantize vars
    int pennies = 0;
    int nickels = 0;
    int dimes = 0;
    int quarters = 0;

    double total = 0.00;

    //ask user
    cout << "Please input the amount of each coin" << endl;

    cout << "Pennies:: ";
    cin >> pennies;
    cout << pennies << endl;

    cout << "Nickels:: ";
    cin >> nickels;
    cout << nickels << endl;

    cout << "Dimes:: ";
    cin >> dimes;
    cout << dimes << endl;

    cout << "Quarters:: ";
    cin >> quarters;
    cout << quarters << endl;

    //calculate (add up all the values)
    total = (double)pennies  * PENNY
          + (double)nickels  * NICKEL
          + (double)dimes    * DIME
```

```
52.             + (double)quarters * QUARTER;
53.
54.     //output
55.     if(fabs(total - 1.0) < .001)
56.         cout << "Congrats! You win" << endl;
57.     else if((total - 1.0) > 0.0)
58.         cout << "Sorry. You lose. You had " << (total - 1.0) << " dollars too much";
59.     else if((total - 1.0) < 0.0)
60.         cout << "Sorry. You lose. You need " << (1.0 - total) << " dollars more";
61.
62.     return 0;
63. }
```

Success comments (0)

stdin copy

```
10
1
1
3
```

stdout copy

```
Please input the amount of each coin
Pennies:: 10
Nickels:: 1
Dimes:: 1
Quarters:: 3
Congrats! You win
```

```cpp
/*
    @title Lab 1-4
    @description Write code that lets the user enter a number and a letter. Both should be increased until the end of
    the alphabet is reached and printed. Use a while loop. [3 points]
    @author Aryan Gupta
    @version 1.3
*/

#include <iostream>
#include <cstdlib>

using namespace std;

int main() {
    //instantize vars
    int num = 0;
    char letter = ' ';

    //ask user
    cout << "Please enter a number";
    cout << ":: ";
    cin >> num;
    cout << num << endl;

    cout << "Please enter a letter";
    cout << ":: ";
    cin >> letter;
    cout << letter << endl;

    //output
    while(letter <= 'z' || letter <= 'Z') {
        cout << letter << " :: " << num << endl;
        letter++;
        num++;
    }

    return 0;
}
```

edit fork download copy

```
/*
    @title Lab 1-4
    @description Write code that lets the user enter a number and a letter. Both should be increased until the end of
 the alphabet is reached and printed. Use a while loop. [3 points]
    @author Aryan Gupta
    @version 1.3
*/

#include <iostream>
#include <cstdlib>

using namespace std;

int main() {
    //instantize vars
    int num = 0;
    char letter = ' ';

    //ask user
    cout << "Please enter a number";
    cout << ":: ";
    cin >> num;
    cout << num << endl;

    cout << "Please enter a letter";
    cout << ":: ";
    cin >> letter;
    cout << letter << endl;

    //output
    while(letter <= 'z' || letter <= 'Z') {
        cout << letter << " :: " << num << endl;
        letter++;
        num++;
    }

    return 0;
}
```

Success comments (0)

stdin copy

```
6
v
```

stdout copy

```
Please enter a number:: 6
Please enter a letter:: v
v :: 6
w :: 7
x :: 8
y :: 9
z :: 10
```

```cpp
/*
    @title Lab 1-5
    @description ??
    @author Aryan Gupta
    @version 1.0
*/

#include <cstdlib>
#include <iostream>

using namespace std;

int main() {
    cout << "Do part 1" << endl;
    cout << "Do part 2" << endl;
    cout << "Do part 3" << endl;
    cout << "Do part 4" << endl;
    cout << "Make a joke" << endl;
    cout << "Do part 6" << endl;
    cout << "??" << endl;
    cout << "PROFIT" << endl;

    return 0;
}
```

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```
/*
    @title Lab 1-5
    @description ??
    @author Aryan Gupta
    @version 1.0
*/

#include <cstdlib>
#include <iostream>

using namespace std;

int main() {
    cout << "Do part 1" << endl;
    cout << "Do part 2" << endl;
    cout << "Do part 3" << endl;
    cout << "Do part 4" << endl;
    cout << "Make a joke" << endl;
    cout << "Do part 6" << endl;
    cout << "??" << endl;
    cout << "PROFIT" << endl;

    return 0;
}
```

Success comments (0)

stdin copy

```
Standard input is empty
```

stdout copy

```
Do part 1
Do part 2
Do part 3
Do part 4
Make a joke
Do part 6
??
PROFIT
```

```cpp
/*
    @title Lab 1-6
    @description Write a program that finds and prints all of the prime numbers between 3 and 100. A prime number is a
    number that can only be divided by one and itself (i.e. 3, 5, 7, 11, 13...) [5 points]
    @author Aryan Gupta
    @version 1.3
*/

#include <iostream>
#include <cstdlib>

using namespace std;

int main() {
    //instantize vars
    bool prime = true;

    //calculate and output
    for(int o = 3; o <=100; o++) {
        for(int i = 2; i < o; i++)
            if(o % i == 0) {
                prime = false;
                break;
            }
        if(prime)
            cout << o << ", ";
        prime = true;
    }

    return 0;
}
```

edit fork download copy

```
/*
    @title Lab 1-6
    @description Write a program that finds and prints all of the prime numbers between 3 and 100. A prime number is a number that can only be divided by one and itself (i.e. 3, 5, 7, 11, 13...) [5 points]
    @author Aryan Gupta
    @version 1.3
*/

#include <iostream>
#include <cstdlib>

using namespace std;

int main() {
    //instantize vars
    bool prime = true;

    //calculate and output
    for(int o = 3; o <=100; o++) {
        for(int i = 2; i < o; i++)
            if(o % i == 0) {
                prime = false;
                break;
            }
        if(prime)
            cout << o << ", ";
        prime = true;
    }

    return 0;
}
```

Success comments (0)

stdin copy

```
Standard input is empty
```

stdout copy

```
3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37, 41, 43, 47, 53, 59, 61, 67, 71, 73, 79, 83, 89, 97,
```