↑2.23 Auto (since C++11)

2.24 C++ example: Salary calculation with variables

Using variables in expressions, rather than numbers like 40, makes a program more general and makes expressions more meaningful when read too.

zyDE 2.24.1: Calculate salary: Generalize a program with variables and input.

The following program uses a variable workHoursPerWeek rather than directly using 40 in the salary calculation expression.

- 1. Run the program, observe the output. Change 40 to 35 (France's work week), and run again.
- 2. Generalize the program further by using a variable workWeeksPerYear. Run the program. Change 50 to 52, and run again.
- 3. Introduce a variable monthlySalary, used similarly to annualSalary, to further improve program readability.

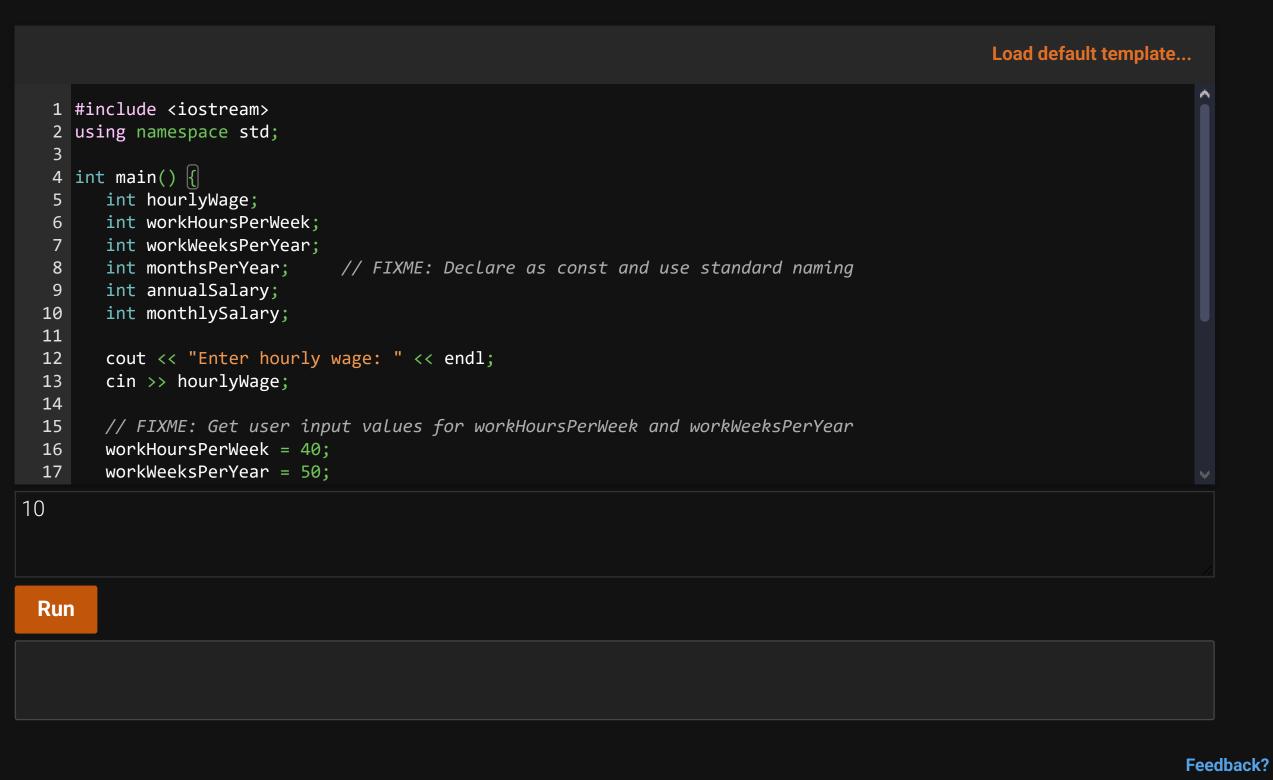
```
Load default template...
 1 #include <iostream>
 2 using namespace std;
4 int main() [
      int hourlyWage;
      int workHoursPerWeek;
      int annualSalary;
      // TODO: Declare and initialize variable workWeeksPerYear, then replace the 50's below
10
     hourlyWage = 20;
11
12
      workHoursPerWeek = 40;
13
      annualSalary = hourlyWage * workHoursPerWeek * 50;
      cout << "Annual salary is: ";</pre>
      cout << annualSalary << endl;</pre>
17
Run
                                                                                                               Feedback?
```

When values are stored in variables as above, the program can read user inputs for those values. If a value will never change, the variable can be declared as const.

zyDE 2.24.2: Calculate salary: Generalize a program with variables and input.

The program below has been generalized to read a user's input value for hourlyWage.

- 1. Run the program. Notice the user's input value of 10 is used. Modify that input value, and run again.
- 2. Generalize the program to get user input values for workHoursPerWeek and workWeeksPerYear (change those variables' initializations to 0). Run the program.
- 3. monthsPerYear will never change, so declare that variable as const. Use the standard for naming constant variables. Ex: const int MAX_LENGTH = 99. Run the program.
- 4. Change the values in the input area below the program, and run the program again.



How was this section?



Provide section feedback