1 specification

The following pseudocode describes how to extract the dollars and cents from a price given as a floating-point value. For example, a price 2.95 yields values 2 and 95 for the dollars and cents.

Assign the price to an integer variable dollars.

Multiply the difference price - dollars by 100 and add 0.5.

Assign the result to an integer variable cents.

Translate this pseudocode into a C++ program. Read a price and print the dollars and cents. Test your program with inputs 2.95 and 4.35.

2 implementation

⟨ *assignprice* ? ⟩ ≡

```
int dollars = price;
int dollars1 = price1;
```

◇

Fragment referenced in ?.

⟨ *multiplyprice* ? ⟩ ≡

```
double answer = (price-dollars) * 100 +.5;
double answer1 = (price1-dollars1) * 100 +.5;
```

◇

Fragment referenced in ?.

⟨ *finalanswer* ? ⟩ ≡

```
int cents = answer;
int cents1 = answer1;
```

◇

Fragment referenced in ?.

"p2_10.cpp" ?≡

```
#include <iostream>
using namespace std;

int main()
{
        double price = 2.95;  // floating-point value
        double price1 = 4.35;  // floating-point value

        ⟨ assignprice ?⟩;
        cout << "If unit price is $2.95, then dollar amount is = $" << dollars << endl;

        ⟨ multiplyprice ?⟩;
        cout << "Adding 0.5 to result of Unit price minus dollar amount multipled by 100 = " << a

        ⟨ finalanswer ?⟩;
        cout << "Actual remaining amount in cents is "<< cents << endl << endl << endl;



        cout << "If unit price is $4.35, then dollar amount is = $" << dollars1 << endl;

        cout << "Adding 0.5 to result of Unit price minus dollar amount multipled by 100 = " << a

        cout << "Actual remaining amount in cents is "<< cents1 << endl;
}
```

◇

3 test

```
C:\Users\112-7-6U\Desktop\cs102>nuweb p2_10.w
nuweb: you'll need to rerun nuweb after running latex

C:\Users\112-7-6U\Desktop\cs102>g++ -o p2_10.exe p2_10.cpp

C:\Users\112-7-6U\Desktop\cs102>p2_10
If unit price is $2.95, then dollar amount is = $2
Adding 0.5 to result of Unit price minus dollar amount multipled by 100 = 95.5
Actual remaining amount in cents is 95


If unit price is $4.35, then dollar amount is = $4
Adding 0.5 to result of Unit price minus dollar amount multipled by 100 = 35.5
Actual remaining amount in cents is 35
```