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/*
  File: convert2metric.cpp
  Created by: Isaiah Green
  Creation Date: 10/29/17
  Synopsis:
  This program reads in a length yards, feet and inches,
  and converts to meters and centimeters.
*/

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

using namespace std;

// FUNCTION PROTOTYPE FOR read_us_length
void read_us_length(int& yards, int& feet, int& inches);

// FUNCTION PROTOTYPE FOR convert2inches
int convert2inches(int yards, int feet, int inches);

// FUNCTION PROTOTYPE FOR convert2metric
void convert2metric( int total_inches, int& meters, int& centimeters);

// FUNCTION PROTOTYPE FOR write_metric_length
void write_metric_length( int meters,  int centimeters);

int main()
{
  int yards, feet, inches;    // length in yards, feet and inches
  int total_inches;           // total length in inches
  int meters, centimeters;    // length in meters and centimeters

  read_us_length(yards, feet, inches);
  total_inches = convert2inches(yards, feet, inches);
  convert2metric(total_inches, meters, centimeters);
  write_metric_length(meters, centimeters);

  return 0;
}

// DEFINE FUNCTION read_us_length HERE:
// this function is asking user to enter in the lenght of each given
measurementand checking to see if the measurement given is not a negative
number
void read_us_length(int& yards, int& feet, int& inches){
  cout << "Enter number of yards: ";
  cin >> yards;

  //if yards is less than 0 show error and exit
if (yards < 0){
  cerr << "Illegal negative value " << yards << " for yards." << endl;
 exit(1);
 }
```

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  cout << "Enter number of feet: ";
  cin >> feet;

  // if feet is less than 0 show error and exit
if (feet < 0){
  cerr << "Illegal negative value " << feet << " for feet." << endl;
 exit(2);
 }

  cout << "Enter number of inches: ";
  cin >> inches;

  // if inches is less than 0 show error and exit
if (inches < 0){
  cerr << "Illegal negative value " << inches << " for inches." << endl;
 exit(3);
 }
}
// DEFINE FUNCTION convert2inches HERE:
// this function calculates the total number of inches and this function
returns a value
int convert2inches(int yards, int feet, int inches){
  int total_inches; // this is a variable made to get the total inches
  total_inches= yards*36+feet*12+inches;
  return (total_inches);
}
// DEFINE FUNCTION convert2metric HERE
// this function calculates the total number of centimeters and doesn't
return a value
void convert2metric( int total_inches, int& meters, int& centimeters){
  centimeters=total_inches*2.54;
  meters= centimeters/100;
  centimeters= centimeters%100;
}
// DEFINE FUNCTION write_metric_length HERE:
void write_metric_length( int meters,  int centimeters){

  cout << meters << " meters, " << centimeters << " centimeters." << endl;
}
```