```c
//--------------------------------------------------------------------------
// File:            changeCounter.c
//
// Functions:       main(void)
//
//--------------------------------------------------------------------------
#include <stdio.h>
#include <stdlib.h>
#include <stdbool.h>
#include <math.h>
#define CENTS_IN_TWENTYDOLLARS 2000
#define CENTS_IN_TENDOLLARS 1000
#define CENTS_IN_FIVEDOLLARS 500
#define CENTS_IN_ONEDOLLARS 100
#define CENTS_IN_QUARTER 25
#define CENTS_IN_DIME 10
#define CENTS_IN_NICKLE 5
#define CENTS_IN_PENNY 1
#define ZERO 0
#define ONE 1
#define TOOBIG 9999999999
//--------------------------------------------------------------------------
// Function:        main(void)
//
// Title:           Change Counter
//
// Description:     The program will takes in a specific amount of dollars
//                  and the amount of tender. After that it will give the
//                  list amount of change in different type of bills
//
// Programmer:      Son Minh Tran
//
// Date:            01/17/2017

// Version:         1.0
//
// Environment:     HP Elitebook 8570P
//                  Hardware: 8GB
//                            Intel(R) Core(TM) i5-3320M
//                  Software: OS: MS Windows 10 Professional 64-bit
//
// Input:           The amount of dollar for a purchase
//                  The amount of money tendered
// Output:          Give out the amount of change
//                  Amount of twenty dollars
//                  Amount of ten dollars
//                  Amount of five dollars
//                  Amount of one dollar
//                  Amount of quarters
//                  Amount of dimes
//                  Amount of nickels
//                  Amount of pennies
```

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//
// Parameters:      void
//
//
// Returns:         EXIT_SUCCESS for successful completion
//
//
// Called By:       None
//
// Calls:           None
//
// History Log:     Commit github on 05/01/2017: Initialize the project
//                  Commit github on 07/01/2017: Finished finding change
//                  Commit github on 17/01/2017: Change to deal with
//                  big number
//--------------------------------------------------------------------------


int main(void)
{
    //Declare and initialize all the variable
    long double purchaseAmount = 0.0L;
    long double moneyTendered = 0.0L;
    long double change = 0.0;
    _Bool invalidPur = false;
    _Bool invalidTend = false;
    int scanPur = 0;
    int scanTend = 0;
    int roundNumber = 100;
    double numberForRounding = 0.5;
    unsigned long long twentyBill = 0llu;
    int tenBill = 0;
    int fiveBill = 0;
    int oneBill = 0;
    int quarterCoin = 0;
    int dimeCoin = 0;
    int nickleCoin = 0;
    int pennyCoin = 0;
    unsigned long long tempChangeInCent = 0ll;
    //Print out to command line and ask for input of purchase and tender
    printf("Welcome to Change Counter by Son Tran!\n");
    printf("Please enter the total amount of purchase: $");
    //read in amount of purchase
    scanPur = scanf("%Lf", &purchaseAmount);
    //check for the input type
    invalidPur = scanPur != ONE;
    //Continue ask to enter input until it get correct type
    while (getchar() != '\n');
    while (invalidPur)
    {
        printf("Invalid purchase amount, input should be number, "
            "please enter again: $");
```

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        scanPur = scanf("%Lf", &purchaseAmount);
        while (getchar() != '\n');
        invalidPur = scanPur != ONE;
    }
    //round up to two number after the point of purchase amount
    purchaseAmount = floor(purchaseAmount * roundNumber + numberForRounding)
        / roundNumber;
    printf("$%.2Lf\n", purchaseAmount);
    //ask and read in tender amount
    printf("Please enter amount of money tendered: $");
    scanTend = scanf("%Lf", &moneyTendered);
    //check for input type
    invalidTend = scanTend != ONE;
    //Continue ask to enter input until it get correct type
    while (getchar() != '\n');
    while (invalidTend)
    {
        printf("Invalid tender amount, input should be number, "
            "please enter again: $");
        scanTend = scanf("%Lf", &moneyTendered);
        while (getchar() != '\n');
        invalidTend = scanTend != ONE;
    }
    //round of to two number after the point of purchase amount
    moneyTendered = floor(moneyTendered * roundNumber + numberForRounding)
        / roundNumber;
    printf("$%.2Lf\n", moneyTendered);
    printf("\n");
    //calculate change amount
    change = moneyTendered - purchaseAmount;
    tempChangeInCent = fabs(tempChangeInCent);
    tempChangeInCent = floor(change * roundNumber + numberForRounding);
    printf("Your change is: $%.2Lf\n", change);
    printf("\n");
    //check if the user is still owing or not
    if (change < ZERO)
    {
        printf("Change still owing\n");
    }
    //calculate amount of all types of bills
    twentyBill = tempChangeInCent / CENTS_IN_TWENTYDOLLARS;
    tempChangeInCent %= CENTS_IN_TWENTYDOLLARS;
    tenBill = tempChangeInCent / CENTS_IN_TENDOLLARS;
    tempChangeInCent %= CENTS_IN_TENDOLLARS;
    fiveBill = tempChangeInCent / CENTS_IN_FIVEDOLLARS;
    tempChangeInCent %= CENTS_IN_FIVEDOLLARS;
    oneBill = tempChangeInCent / CENTS_IN_ONEDOLLARS;
    tempChangeInCent %= CENTS_IN_ONEDOLLARS;
    quarterCoin = tempChangeInCent / CENTS_IN_QUARTER;
    tempChangeInCent %= CENTS_IN_QUARTER;
    dimeCoin = tempChangeInCent / CENTS_IN_DIME;
    tempChangeInCent %= CENTS_IN_DIME;
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    nickleCoin = tempChangeInCent / CENTS_IN_NICKLE;
    tempChangeInCent %= CENTS_IN_NICKLE;
    pennyCoin = tempChangeInCent / CENTS_IN_PENNY;
    //print out amounts of all type of bills
    printf("Twenties : %llu\n", twentyBill);
    printf("Tens     : %d\n", tenBill);
    printf("Fives    : %d\n", fiveBill);
    printf("Ones     : %d\n", oneBill);
    printf("Quarters : %d\n", quarterCoin);
    printf("Dimes    : %d\n", dimeCoin);
    printf("Nickles  : %d\n", nickleCoin);
    printf("Pennies  : %d\n", pennyCoin);
    printf("-------------------------------------------------\n");
    printf("Thank you for using Change Counter.\nHave a nice day!\n");
    //clean out all the buffer
    while (getchar() != '\n');
    //return successful message to the program
    return EXIT_SUCCESS;
}
```