

*Programming Assignment Sheet*

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| To: | Troy Tuckett |
| From: | Elbio Iseas |
| Class: | PRG/410 |
| Date: | 11/02/2015 |
| Re: | Individual Assignment for Week 1 |

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| Design: |
| See uploaded Word document of the flowchart for the Math Tutor |
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| Source Program(s) : |
| // MathTutor.cpp : Defines the entry point for the console application.  // Author: Elbio Iseas  // PRG/410 - Week One Individual Assignment  #include "stdafx.h"  #include <iostream>  #include <iomanip>  #include <conio.h>  #include <cstdlib>  #include <ctime>  #include <Windows.h>  using namespace std;  // https://msdn.microsoft.com/en-us/library/windows/desktop/ms686025(v=vs.85).aspx  // result of the online research for the old C language function for positioning the cursor  // The purspose of this function is to position the cursor on screen  // so there is no need to use endl or leading blanks  void gotoxy(int x, int y) // function with the two int parameters x, and y for column, and row respectively  {  HANDLE hStdOut = GetStdHandle(STD\_OUTPUT\_HANDLE);  COORD coord; // it creates an object COORD named coord for the screen coordinates  coord.X = x; // it assigns the value of the parameter x (column) to the object coord.X  coord.Y = y; // it assigns the value of the parameter y (row) to the object coord.Y  SetConsoleCursorPosition(hStdOut, coord); // it sets the cursor position with the values of the object coord  }  int \_tmain(int argc, \_TCHAR\* argv[])  {  int first = 0, // first random number  second = 0, // second random number  result = 0; // result (sum of first + second numbers)  unsigned int seed; // used in association with srand() and rand() to randomize numbers    char finish = 'N'; // variable for finishing the tutor initialized in 'N' to force the entry to the while loop  char answer = 'Y'; // variable for continueing or not with exercises  gotoxy(70,6); // locates the cursor at these screen coordinates  cout << "M A T H T U T O R"; // it displays the title of the program on screen  while (finish != 'Y') // it will stay in the loop until the user wants to finish taking challenges  {  answer = 'N';    seed = time(0); // needed to generate random numbers  srand(seed); // needed to generate random numbers  first = rand() % 899 + 100; // generates a random number in the range 100 to 999  second = rand() % 899 + 100; // generates a random number in the range 100 to 999  gotoxy(78,10); // locates the cursor at these screen coordinates  cout << " "; // erases the screen number from last exercise if one  gotoxy(78,10); // locates the cursor at these screen coordinates  cout << setw(3) << first;  gotoxy(76,12); // locates the cursor at these screen coordinates  cout << " ";  gotoxy(76,12); // locates the cursor at these screen coordinates  cout << "+ " << setw(3) << second;  gotoxy(77,13); // locates the cursor at these screen coordinates  cout << " ";  gotoxy(77,13); // locates the cursor at these screen coordinates  cout << "----";  gotoxy(65,18); // locates the cursor at these screen coordinates  cout << " ";  gotoxy(65,18); // locates the cursor at these screen coordinates  cout << "Press any key to see the result. ";  getch(); // it gets a character from screen and it is used to pause the program execution    result = first + second; // it adds the two random numbers and it assigns the result to the variable result  gotoxy(65,18); // locates the cursor at these screen coordinates  cout << " ";  gotoxy(77,14); // locates the cursor at these screen coordinates  cout << " ";  gotoxy(77,14); // locates the cursor at these screen coordinates  cout << right << setw(4) << result;  gotoxy(64,18); // locates the cursor at these screen coordinates  cout << " ";  gotoxy(64,18); // locates the cursor at these screen coordinates  cout << "Would you like another exercise?(Y/N) ";    answer=' '; // this value it is on purpose to force the entry to the while loop  while (answer!='Y' && answer!='N') // it will stay in the while loop while the variable answer is different from 'Y' and different from 'N'  {  answer=getch(); // it gets a character from the keyboard and it assigns it to the variable answer  answer=toupper(answer); // it changes to uppercase whatever the character read from the keyboard was  }  gotoxy(64,18); // locates the cursor at these screen coordinates  cout << " "; // it earases the old message  gotoxy(77,14); // locates the cursor at these screen coordinates  cout << " "; // it erases the result value  if (answer == 'N') // if the value of the variable answer is 'N' then it enters the if block  {  finish = 'Y'; // it assigns 'Y' to the flag variable finish to exit the program  }  }  return 0; // it returns 0 because it is an int function  } |
| SOutput Results: |
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| Testing: |
| Description of testing  REMOVE THIS DESCRIPTION BEFORE POSTING:  There is quite a bit of information on writing test scripts out on the internet if you would like to research this further, but because of questions from students, I thought I would put some of my expectations in the forum. If you have questions, please respond to this post.  A Test Script is a sentence or two that describes how you will best an element of your program to make sure that it meets some expected result. Usually your test scripts should focus on the requirements of the assignment (whether explicitly stated of implicitly assumed). At the end of each of your scripts, you should include a PASS or FAIL that tells the result of the script. Here are some examples:  1) The program will return the correct mortgage payment result of ??? when the principle amount of 200000, rate of 5.75%, and term of 30 years is used.  2) The program formats the resulting mortgage payment using the format $9,999.99.  You decide what scripts to write. They show your ability to critically think through what the program should result. Remember to include a PASS or FAIL when you are done testing. |
| Tested By Elbio Iseas  There is no input data to test for this program other than calculating the result against the result provided by the program. I did test the results and they were OK. |