// File Name ................. SP6\_6.CPP

// Course .................... ELET 2300 Introduction to C++ Programming

// Programmer ................ Dr. Farrokh Attarzadeh

// Compiler .................. Microsoft Visual Studio 2010 .NET

// Operating System .......... Windows Vista

// Environment ............... Console Applications

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// Date ...................... 01/01/2013

// Program Description

// \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

//

// Develop a C++ program that prompts the user for two integers and one of

// letter codes a, s, m, or q. The interpretation is given by the following

// table:

// Letter Meaning

// \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_e

// a Add

// s Subtract

// m Multiply

// q Quit

//

// The function main() issues the prompt and stores the user's input in the

// variables d1, d2, and op. Then main() checks the letter code. If

// the letter code is a, main() will invoke the function add() with arguments

// d1 and d2 and similarly for s and m. Each of the functions add(),

// subtract(), and multiply() invokes the function result(), which prints the

// result of the arithmetic operation. Option q terminates the program.

// Full function prototyping is used in this example. Parameter passing

// convention is by value.

// Header files used

#include <iostream>

#include <iomanip>

#include <cstdlib>

//#include <process> // for exit() function prototype

using namespace std;

// User-defined function prototypes

extern char menu(void);

extern void add(int n1, int n2);

extern void subtract(int n1, int n2);

extern void multiply(int n1, int n2);

extern void result(long int res);

int main(void)

{

int d1, d2;

char op;

while(1)// true

{

op = menu();

cout << "\n\nPlease input values for d1 and d2, (integer) only ==> ";

cin >> d1 >> d2;

switch(op)

{

case 'a' :

case 'A' :

add(d1, d2);

break;

case 's' :

case 'S' :

subtract(d1, d2);

break;

case 'm' :

case 'M' :

multiply(d1, d2);

break;

}

}

return EXIT\_SUCCESS;

}

//

// Function menu() is invoked by main(). This function will display the

// menu and passes the user's selection to main for processing.

//

extern char menu(void)

{

char menuOption;

int flag = 1; //use bool flag = true;

while(flag == 1)

{

cout << "\ta. Add\t\ts. Subtract\tm. Multiply\t\tq. Quit\n\n\t";

cout << "\t\t\t\tmake your selection ==> ";

cin >> menuOption;

switch(menuOption)

{

case 'a' :

case 'A' :

case 's' :

case 'S' :

case 'm' :

case 'M' :

flag = 0; //use flag = false;

break;

case 'q':

case 'Q':

cout << "\nFinished..." << endl;

exit(0);

default :

cout << "\n\twrong choice, try again\n\n";

}

}

return menuOption;

}

//

// Function add() will receive two values from main(), computes the sum, and

// then calls function result() for printing the sum.

//

extern void add(int n1, int n2)

{

result ((long int) n1 + (long int) n2);

}

//

// Function subtract() will receive two values from main(), computes the

// difference, and then calls function result() for printing the difference.

//

extern void subtract(int n1, int n2)

{

result ((long int) n1 - (long int) n2);

}

//

// Function multiply() will receive two values from main(), computes the

// product, and then calls function result() for printing the product.

//

extern void multiply(int n1, int n2)

{

result ( (long int) n1 \* (long int) n2);

}

//

// Function result() will receive a data from the calling function, and

// displays it on the monitor.

//

extern void result(long int res)

{

cout << "\nThe result is: " << setw(6) << res << "\n\n";

}

Solution:-

a. Add s. Subtract m. Multiply q. Quit

make your selection ==> a

Please input values for d1 and d2, (integer) only ==> 3

4

The result is: 7

a. Add s. Subtract m. Multiply q. Quit

make your selection ==> m

Please input values for d1 and d2, (integer) only ==> 3

4

The result is: 12

a. Add s. Subtract m. Multiply q. Quit

make your selection ==>

// File Name ................. SP6\_7.CPP

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//

// Program Description

// \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

//

// Develop a C++ program that prompts the user for two integers or two floats

// depending on the menu selection. The menu options are shown below.

//

// Letter Meaning

// \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

// a AddInteger

// f AddFloat

// q Quit

//

// The function main() issues the prompt and stores the user's input in the

// variables d1 and d2, or fd1 and fd2, and op. Then main() checks the

// letter code and invokes appropriate add() function. Function add() invokes

// appropriate result() function to print the result. Option q terminates

// the program.

// Full function prototyping is used in this example. Parameter passing

// convention is by value. **Function overloadin**g is used in this example.

// Header files used

#include <iostream>

#include <iomanip>

#include <cstdlib>

using namespace std;

// User-defined function prototypes

extern char menu(void);

extern void add(int n1, int n2);

extern void add(float f1, float f2);

extern void result(long int res);

extern void result(double res);

int main(void)

{

int d1, d2;

float fd1, fd2;

char op;

// set parameters for data display

cout.setf(ios::showpoint);

cout.precision(2);

cout.setf(ios::fixed, ios::floatfield);

while(1)

{

op = menu();

switch(op)

{

case 'a' :

case 'A' :

cout << "\n\nPlease input values for d1 and d2,"

<< " (integer) only ==> ";

cin >> d1 >> d2;

add(d1, d2);

break;

case 'f' :

case 'F' :

cout << "\n\nPlease input values for fd1 and fd2,"

<< " (float) only ==> ";

cin >> fd1 >> fd2;

add(fd1, fd2);

break;

}

}

return EXIT\_SUCCESS;

}

//

// Function menu() is invoked by main(). This function will display the

// menu and passes the user's selection to main() for processing.

//

extern char menu(void)

{

char menuOption;

int flag = 1;

while(flag == 1)

{

cout << "\ta. AddInteger\t\tf. AddFloat\t\tq. Quit\n\n\t\t\tmake"

<< " your selection ==> ";

cin >> menuOption;

switch(menuOption)

{

case 'a' :

case 'A' :

case 'f' :

case 'F' :

flag = 0;

break;

case 'q':

case 'Q':

cout << "\nFinished..." << endl;

exit(0);

default :

cout << "\n\twrong choice, try again\n\n";

}

}

return menuOption;

}

//

// Function add() will receive two values from main(), computes the sum, and

// then calls function result() for printing the sum.

//

extern void add(int n1, int n2)

{

result ((long int) (n1) + (long int) (n2) );

}

//

// Function add() will receive two values from main(), computes the sum, and

// then calls function result() for printing the sum.

//

extern void add(float f1, float f2)

{

result (double (f1) + double (f2) );

}

//

// Function result() will receive a data from the calling function, and

// displays it on the monitor.

//

extern void result(long int res)

{

cout << "\nThe result is: " << res << "\n\n";

}

//

// Function result() will receive a data from the calling function, and

// displays it on the monitor.

//

extern void result(double res)

{

cout << "\nThe result is: " << res << endl << endl;

}

Solution:-

a. AddInteger f. AddFloat q. Quit

make your selection ==> a

Please input values for d1 and d2, (integer) only ==> 4

8

The result is: 12

a. AddInteger f. AddFloat q. Quit

make your selection ==> f

Please input values for fd1 and fd2, (float) only ==> 1.56

3.588

The result is: 5.15

a. AddInteger f. AddFloat q. Quit

make your selection ==>