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Computer Programming 143

Practical 2- Memo

2016

Assignment A

```
1 // Assignment2A.c
2
3 #include<stdio.h>
4 #include<stdlib.h>
5
6 /* TOP LEVEL
7  * Perform a user-specified calculation on two numbers
8  * -----
9  * FIRST REFINEMENT
10 * Ask the user for two numbers
11 * Ask the user to choose a calculation
12 * Perform the calculation and print the result
13 * -----
14 * SECOND REFINEMENT
15 * Declare variables
16 *
17 * Ask the user to enter two integers
18 * Read two integers from the user
19 *
20 * Print the menu
21 *     1 for addition
22 *     2 for subtraction
23 *     3 for multiplication
24 *     4 for division
25 *     5 for modulus
26 * Read a calculation choice from the user
27 *
28 * if choice is 1
29 *     calculate and print sum
30 * else if choice is 2
31 *     calculate and print difference
32 * else if choice is 3
33 *     calculate and print product
34 * else if choice is 4
35 *     calculate and print division
36 * else if choice is 5
37 *     calculate and print modulus
38 */
39
40 int main()
41 {
42     int num1; // First number to be input by user
43     int num2; // Second number to be input by user
44     int choice; // Choice of calculation
45 }
```

```

46     setbuf(stdout,0);
47
48     printf("Enter first integer: ");
49     scanf("%d", &num1); // Read num1
50
51     printf("Enter second integer: ");
52     scanf("%d", &num2); // Read num2
53
54     // Print menu
55     printf("Enter 1 for addition\n");
56     printf("Enter 2 for subtraction\n");
57     printf("Enter 3 for multiplication\n");
58     printf("Enter 4 for division\n");
59     printf("Enter 5 for modulus\n");
60
61     printf("? ");
62     scanf("%d", &choice); // Read choice
63
64     if (choice == 1) // Addition selected
65     { // Calculate and print sum
66         printf("%d + %d = %d", num1, num2, num1+num2);
67     }
68     else if (choice == 2) // Subtraction selected
69     { // Calculate and print difference
70         printf("%d - %d = %d", num1, num2, num1-num2);
71     }
72     else if (choice == 3) // Multiplication selected
73     { // Calculate and print product
74         printf("%d x %d = %d", num1, num2, num1*num2);
75     }
76     else if (choice == 4) // Division selected
77     { // Calculate and print division
78         printf("%d / %d = %d", num1, num2, num1/num2);
79     }
80     else if (choice == 5) // Modulus selected
81     { // Calculate and print modulus
82         printf("%d %% %d = %d", num1, num2, num1%num2);
83     }
84     else
85     { // Print error message
86         printf("Invalid choice\n");
87     }
88
89     return 0;
90 }

```