

2.1 Calculator

Write a program that asks the user to enter two numbers, obtains them from the user and prints their sum, product, difference, quotient and remainder.

2.2 Cost Price Problem

Suppose, a user enters the total selling price of 15 items and the profit earned on the total. Write a program to find out the cost price of one item.

2.3 Separating Digits in an Integer

Write a program that inputs one five-digit number, separates the number into its individual digits and prints the digits separated from one another by three spaces each. [Hint: Use combinations of integer division and the remainder operation.] For example, if the user types in 42139, the program should print

Output: 4 2 1 3 9

2.4 Shapes with Asterisks

Write a program that prints the following shapes with asterisks.

2.5 Diameter, Circumference and Area of a Circle Write a program that reads in the radius of a circle and prints the circle's diameter, circumference and area. Use the constant value 3.14159 for π .

code:

```
// #include <stdio.h>

// void main(){

//     int a,b,c,d,e;
```

```

// printf("Enter number a: ");
// scanf("%d", &a);
// printf("Enter number b: ");
// scanf("%d", &b);
//
// printf("\nThe sum of a and b is: %d", a+b);
// printf("\nThe difference of a and b is: %d", a-b);
// printf("\nThe product of a and b is: %d", a*b);
// printf("\nThe quotient of a and b is: %d", a/b);
// printf("\nThe remainder of a and b is: %d", a%b);
// }

```

```

// #include <stdio.h>
// void main() {
//   int a[15],b[15],c;
//
//   for (int i = 0; i<15; i++) {
//     printf("Enter item number %d's price: ", i);
//     scanf("%d",&a[i]);
//     printf("The profit gained for item number %d is: ", i);
//     scanf("%d", &b[i]);
//   }
//   for (int i = 0; i<15; i++) {
//     printf("The cost price of item number %d is: %d\n", i, b[i] - a[i]);
//   }
// }

```

```

// #include <stdio.h>
// void main() {
//   int a;
//   printf("Enter a 5 digit number: ");

```

```

//  scanf("%d", &a);
//
//  int b = a/10000;
//  int c = (a%10000)/1000;
//  int d = (a%1000)/100;
//  int e = (a%100)/10;
//  int f = a%10;
//
//  printf("the number is: %d %d %d %d %d", b,c,d,e,f);
// }

// #include <stdio.h>
// void main() {
//  printf("Making a rectangle with aestricks\n");
//  int a,b;
//  printf("Enter the number of aestricks in the length of the rectangle: ");
//  scanf("%d", &a);
//  printf("Enter the number of aestricks in the breadth of the rectangle: ");
//  scanf("%d", &b);
//  printf("making a hollow rectangle\n");

//  for (int i = 0; i < a; i++) {
//      for (int j = 0; j < b; j++) {
//          if (i == 0 || i == a-1 || j == 0 || j == b-1) {
//              printf("* ");
//          } else {
//              printf(" ");
//          }
//      }
//  }
//  printf("\n");
// }

```

```
// }
```

```
#include <stdio.h>
```

```
void main(){
```

```
    int a;
```

```
    printf("Making a hollow diamond: \n");
```

```
    printf("Enter the number of asterisks in the length of the diamond: ");
```

```
    scanf("%d", &a);
```

```
    for (int i = 0; i < a; i++) {
```

```
        for (int j = 0; j < a; j++) {
```

```
            if (i+j == a/2 || j-i == a/2 || i-j == a/2 || i+j == a + a/2 - 1 || i+j == a/2 + a - 1 || i-j == a/2 + a - 1) {
```

```
                printf("* ");
```

```
            } else {
```

```
                printf(" ");
```

```
            }
```

```
        }
```

```
        printf("\n");
```

```
    }
```

```
}
```

Output:

```
main.c
71
72
73 #include <stdio.h>
74
75 void main(){
76
77     int a;
78     printf("Making a hollow diamond: \n");
79     printf("Enter the number of asterisks in the length of the diamond: ");
80     scanf("%d", &a);
81
82     for (int i = 0; i < a; i++) {
83         for (int j = 0; j < a; j++) {
84             if (i+j == a/2 || j-i == a/2 || i-j == a/2 || i+j == a + a/2 - 1 || i+j == a/2 + a - 1 || i-j == a/2 + a - 1) {
85                 printf("* ");
86             } else {
87                 printf(" ");
88             }
89         }
90         printf("\n");
91     }
92 }
93
94
```

Input

Enter the number of asterisks in the length of the diamond: 10

```

  *
 *
*
 *
*
 *
*
 *
 *
 *
 *

```

...Program finished with exit code 0
Press ENTER to exit console.

```
main.c
17 #include <stdio.h>
18 void main() {
19     int a[15], b[15], c;
20
21     for (int i = 0; i < 15; i++) {
22         printf("Enter item number %d's price: ", i);
23         scanf("%d", &a[i]);
24         printf("The profit gained for item number %d is: ", i);
25         scanf("%d", &b[i]);
26     }
27     for (int i = 0; i < 15; i++) {
28         printf("The cost price of item number %d is: %d\n", i, b[i] - a[i]);
29     }
30 }
31
32
33 // #include <stdio.h>
```

Input

Enter item number 0's price: 10
The profit gained for item number 0 is: 5
Enter item number 1's price: 20
The profit gained for item number 1 is: 15
Enter item number 2's price: 30
The profit gained for item number 2 is: 15
Enter item number 3's price: 50
The profit gained for item number 3 is: 25
Enter item number 4's price: 30
The profit gained for item number 4 is: 20
Enter item number 5's price: 10
The profit gained for item number 5 is: 2
Enter item number 6's price: 80
The profit gained for item number 6 is: 60
Enter item number 7's price: 100
The profit gained for item number 7 is: 90
Enter item number 8's price: 10
The profit gained for item number 8 is: 9
Enter item number 9's price: 1
The profit gained for item number 9 is: 1
Enter item number 10's price: 10
The profit gained for item number 10 is: 5
Enter item number 11's price: 15

```
main.c
31
32
33 #include <stdio.h>
34 void main() {
35     int a;
36     printf("Enter a 5 digit number: ");
37     scanf("%d", &a);
38
39     int b = a/10000;
40     int c = (a%10000)/1000;
41     int d = (a%1000)/100;
42     int e = (a%100)/10;
43     int f = a%10;
44
45     printf("the number is: %d %d %d %d %d", b,c,d,e,f);
46 }
47
```

input

Enter a 5 digit number: 12345
the number is: 1 2 3 4 5

...Program finished with exit code 0
Press ENTER to exit console.

```
main.c
51 printf("making a rectangle with aestricks\n");
52 int a,b;
53 printf("Enter the number of aestricks in the length of the rectangle: ");
54 scanf("%d", &a);
55 printf("Enter the number of aestricks in the breadth of the rectangle: ");
56 scanf("%d", &b);
57 printf("making a hollow rectangle\n");
58
59 for (int i = 0; i < a; i++) {
60     for (int j = 0; j < b; j++) {
61         if (i == 0 || i == a-1 || j == 0 || j == b-1) {
62             printf("* ");
63         } else {
64             printf(" ");
65         }
66     }
67     printf("\n");

```

input

Making a rectangle with aestricks
Enter the number of aestricks in the length of the rectangle: 10
Enter the number of aestricks in the breadth of the rectangle: 5
making a hollow rectangle

```
* * * * *
*       *
*       *
*       *
*       *
*       *
*       *
*       *
* * * * *
```

...Program finished with exit code 0
Press ENTER to exit console.

Run

Debug

Stop

Share

Save

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main.c

```
1 #include <stdio.h>
2 void main(){
3     int a,b,c,d,e;
4     printf("Enter number a: ");
5     scanf("%d", &a);
6     printf("Enter number b: ");
7     scanf("%d", &b);
8
9     printf("\nThe sum of a and b is: %d", a+b);
10    printf("\nThe difference of a and b is: %d", a-b);
11    printf("\nThe product of a and b is: %d", a*b);
12    printf("\nThe quotient of a and b is: %d", a/b);
13    printf("\nThe remainder of a and b is: %d", a%b);
14 }
15
16
17 // #include <stdio.h>
```

input

```
Enter number a: 5
Enter number b: 10

The sum of a and b is: 15
The difference of a and b is: -5
The product of a and b is: 50
The quotient of a and b is: 0
The remainder of a and b is: 5

...Program finished with exit code 0
Press ENTER to exit console.
```