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Chapter 13

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Table processing and pointers

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- (1) Returning a pointer from a function done
- (2) Table processing and pointers done



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The C program below receives integers as command line arguments. After receiving the required values, the program calls the subroutine "calculate_and_print" which receives an array and its size passed by the main program, prints the numbers on the screen and prints their sum on the screen.

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

void calculate_and_print(int *, int);

int main(int argc, char *argv[])
{
    int x, sum=0, size=5, array[5];
    if(argc == 6){
        /* Program name and command line parameters */
        for(x=0;x<argc-1;x++){
            array[x] = atoi(argv[x+1]);
        }
        calculate_and_print(array, size);
    }else{
        printf("Incorrect number of command line arguments\n");
    }
    return 0;
}
```

Your task is to write the subroutine "calculate_and_print". The example printout shows how to print the numbers. The main program includes things that are outside the scope of this course, but you only need to write a subroutine that serves the main program.

Example output:

```
Elements of the array: 43 53 654 65 77
Sum = 892
```

The verification of program output does not account for whitespace characters like "\n", "\t" and " "

program.c

```
1 #include <stdio.h>
2 #include <stdlib.h>
3
4 void calculate_and_print(int *, int);
5
6 int main(int argc, char *argv[])
7 {
8     int x, sum=0, size=5, array[5];
9     if(argc == 6){
10        /* Program name and command line parameters */
11        for(x=0;x<argc-1;x++){
12            array[x] = atoi(argv[x+1]);
13        }
14        calculate_and_print(array, size);
15    }else{
16        printf("Incorrect number of command line arguments\n");
17    }
18    return 0;
19 }
20 void calculate_and_print(int *array, int size)
21 {
22     int sum=0;
23     for (int i = 0; i < 5; i++)
24         sum += array[i];
25
26     printf("Elements of the array: %d %d %d %d %d\n", array[0], array[1], array[2], array[3], array[4], array[5]);
27     printf("Sum = %d\n", sum);
28 }
29
30
```

Position: Ln 20 Ch 1

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