COEN 10 - Practice IX
Solutions on Wed

1. What does function a output?

```
void
a ( )
{
     int       array[10] = {1, 2, 3, 4, 5, 6, 7, 8, 9, 10};

     b (array);

     for (i = 0; i < 10; i++)
          printf ("%d\t", array[i]);

     printf ("\n");
}

void
b (int *q)
{
     *q = 100;
     q += 3;
     *q = 200;
     *(q + 2) = 300;
     q--;
     *q = 400;
     return;
}
```

2. What does function a output?

```
void
a ( )
{
     int       x = 2;
     int       y = 3;

     b (x, &y);
     printf ("%d, %d", x, y);
}

void
b (int z, int *y)
{
     int  x = 4;

     *y = x + z;
     x += 5;
     z -= 10;
     return;
}
```

3. Write the pseudo-code, draw the flowchart, and write a function to traverse an array of integers with a pointer, making every element the average of the 3 following elements. Write a second version of the function to traverse the array with an index. Careful with the range! The address and the size of the array are received as arguments:
   void average_3 (int *, int);

4. Write the pseudo-code, draw the flowchart, and write a function to count the number of matches between two integer arrays that are greater than 100. Write a second version of the function to traverse the arrays with indices. Assume all the integers in each array are different. The addresses and the sizes of the arrays are received as arguments:
   void count_matches (int *, int, int *, int);

5. Write the pseudo-code, draw the flowchart, and write a function that traverses a string with a pointer and returns the number of groups of consecutive spaces. The string is received as an argument:
   int number_groups (char *cp);

6. Write the pseudo-code, draw the flowchart, and write a function to reverse a string. The string is received as an argument:
   void reverse (char *cp);

7. Write the pseudo-code, draw the flowchart, and write a function to verify if a string is a palindrome. The function traverses the string and returns either 1 if the string is a palindrome or 0 if not. The string is received as an argument:
   int palindrome (char *cp);

8. Write the pseudo-code, draw the flowchart, and write a function to traverse an array of strings to determine the largest number of empty strings together. The address of the first row, the number of strings in the array, and the size of each row are received as arguments:
   void largest_group (char *, int, int);