```
Input: Augmented n x n+1 matrix Augmented_matrix
Output: square nxn matrix A,colum vector b, solution array x with steps

begin totalGaussianMethod

        auxialiry_matrix <- Augmented_matrix
        for i from 0 to n-1 do
                sub_matrix <- deleteLastColumn(auxialiry_matrix)
                    --> l x l+1 matrix
                pivot_number <- sub_matrix[0][0]
                pos_max_pivot <- 0
        row <- 0
        for j from 0 to l-1 do
                        pivot_column <- getFirstColumn(sub_matrix[j])
                        pivot_column <- absoluteValueInColumn(pivot_column)
                        temporal_max_pivot <-
                            getMaxValueFromRow(pivot_column)
                    temporal_pos_max_pivot <-
                        getIndexMaxValueFromColumn(pivot_column)
                    if (pivot_number < temporal_max_pivot) then
                        pivot_number <- temporal_max_pivot
                pos_max_pivot <- temporal_pos_max_pivot
                row <- j
        if (row != 0) then
                switchRow auxialiry_matrix[0] and
                    auxialiry_matrix[row]
                switchRow Augmented_matrix[0] and
                    Augmented_matrix[i+row]
                if (pos_max_pivot != 0) then
                        switchColmn auxialiry_matrix[0][0] and
                            auxialiry_matrix[pos_max_pivot][0]
                        switchColmn Augmented_matrix[0][0] and
                            Augmented_matrix[pos_max_pivot][0]
                if (pivot_number = 0) and (i = n-2) then
                        break
                fj <- auxialiry_matrix[0]
                column_vector <- columnFrompivotnumber(auxialiry_matrix)
                multiplier <- column_vector/pivot_number
        fi <- auxiliary_matrix[1:]
        fi <- fi - (multiplier*fj)
        if (i = 0) then
                Augmented_matrix[i+1:] <- fi
        else:
            Augmented_matrix <- complitFirstColumnWithZeros(fi)
        auxiliary_matrix <- cutFisrtRowAndFisrtColumn(fi)
```

```
        solution_array[i+1] <- Augmented_matrix
    matrix_A <- deleteLastColumn(Augmented_matrix)
    vector_b <- getLastColumn(Augmented_matrix)
    matrix_A, vector_b, solution_array

end totalGaussianMethod
```