Programming Languages 1
Practicing lesson B

Exercises:

1. Formal definition of e-mail address: a string without any whitespace and containing only one '@' character furthermore other character before and after the '@' sign. E.g.: "`darth.vader@deathstar.com`", "`123…9@Som#thi*g`". (This definition is not correct, too simplified.)

2. Create a file manually with any content and optional number of e-mail addresses.

3. Write a C function, which has a string parameter and it gives back 1 if the parameter formally an e-mail address (according to the previous definition), else it gives 0. (Use the `strchr` built-in function.)

4. In the main function, read strings separated by whitespaces from the previously created text file. If it is formally an e-mail address copy it to a separate string allocated dynamically with the appropriate size and attach the address of this string to the end of a character pointer (char *) array. (Use dynamic memory allocation. If there is not more space use `realloc` function.) Store the number of found e-mail addresses as well.

5. Write a function which gets an integer parameter (X) and returns with a random number from the [0 , (X-1)] closed interval with equal probability.

6. Write a procedure which gets the above mentioned arbitrary size character pointer array (referring to e-mail strings) and the number of e-mails as parameter. The procedure prints out only one of the found e-mail addresses randomly using the previous function.

7. Free the allocated memory before exit.