You are the administrator of a computer system and one of your users has forgot the password. The system does not allow changing or resetting the password but you know that the user uses one of the most used 1 million passwords (see the transmitted file).

Implement a parallel C / C ++ solution (using the OMP ver 2.0 library) that will allow you to determine the user's password knowing:

- a hash value is stored for each user password determined by the SHA1 algorithm
- a prefix given by the "parallel" salt value is added to each password
- the hash value of the user is known (is given in the assignment)
- the final value of the hash is determined by the formula

$$hashFinal = SHA1 (SHA1 (salt + word)$$

- The processing is done at the string level.

The solution must return the password related to the given hash and its index in the given list. The solution must use OMP 2.0 directives to be taken into account.

The solution should not have C/C++ or OMP compiler errors.

The solution must print the time needed to get the user password

- For the sequential solution
- For the OpenMP 2.0 solution