

C. Write the step-by-step process for the following tasks. No programming required. The steps must be very clear and unambiguous such that it can be understood and carried out by an elementary school child.

- **Searching**

Describe the *algorithm* you use for looking up a person's telephone number in the phone book. The input is the person's name; the output is the corresponding phone number. No program required.

The first step for looking up a person's phone number is to have the full name of this person. After that, you will have to grab a phone book (a book that lists the names, addresses, and phone numbers of the people and businesses in a certain area.) This book has listed the names in alphabetical order. The standard order displayed in this book is: Last name followed by first name, for example, Elizabete Roschel you will look at Roschel first and then Elizabete. So you will have to go to the page where the letter R starts and look for Roschel, after finding the last name you will have to check what name comes after Roschel, for example:

R

Ramiro, Michel

Ramos, Brenda

Roschel, Alexandra

Roschel, Elizabete

Roschel, Paula

Roschel, Jose.....

Keep moving through the names until you find the exact match. Once you find the correct name, you will find the phone number.

Selection

Suppose you are given a list of 1000 numbers showing Google employee's income and your task is to output the 100 people with the highest income. How would you approach this? No program required.

I would sort this list in descending order, meaning the list will start from the employees with the highest income to the employees with the lowest income. After sorting this list, the first 100 people in this list are the people with the highest income.