16 января 2020 г.

The goal of the current task is to master the previously developed *Employee* problem as implemented by using the pointer-based approach.

- 1. Define a structure named Employee describing an employee. Fields are:
  - a. Name.
  - b. Age.
  - c. Array of wages.
- Create a structure called EmployeeRegister. The class stores a collection of Employees using std::map<string, Employee\*>. The map is used for fast access to an employee by his/her name (name duplicates are not allowed).
  - Mind that now instead of storing Employee objects themselves we store only pointers to Employee objects; the latter are placed dynamically in the heap by using the new operator.
- Create a factory method called EmployeeRegister::createNewEmployee() which creates and adds a new Employee object and initializes it with given parameters: name, age, list of wages (given as a vector of doubles).
  - Consider an appropriate return value.
- 4. Create a special method called freeAll() for the class EmployeeRegister. The method must properly free the memory assigned for Employee objects.
  - Then, consider implementation of the destructor of EmployeeRegister class, working together with this method.
- 5. Create a method called findEmployee() that obtains a name as a parameter and looks up for an employee with the same name. If an employee is found it returns a pointer to the corresponding object, otherwise nullptr.
  - a. Implement the method in two ways. The first implementation iterates over all the objects into the internal map structure and looks for an appropriate object. The second implementation uses map features (fast key lookup) for getting access to the Employee object.
- 6. Create a method called exportEmployeesAsArray() which creates a C-style array of pointers to Employee and fills it up with objects from the internal map.