

OBJECTIVES: Object Methods, Array of objects, System Classes, GUI

Instructors : Leyla SEZER

Assistants : Efe Mert ŞAHİNKOÇ, Engin Zafer KIRAÇBEDEL

Q1. Create a Java WindowBuilder Application that stores and displays the information of the Employee objects. Download and import the java project of **Lab Guide 09** from Moodle and update it according to the below explanations.

- In Employee class, implement a non-default constructor instead of a no-argument constructor. (If you want you can keep the no-argument constructor as well.)
- In Employee class, do not use (**delete**) the **getInput()** method.
- In Company Management System class, update the **addEmployee(...)** method, it should take the necessary parameters, then it should check whether the array is full or not, then check the array for if there is a same **id** or not. If the array is not full and if the **id** is unique then create the Employee object add it to the **employees** array, also it should return a String value that gives information about the situations.
- In CompanyManagementSystem class, update the **display()** method, it should return a String, which will be used while displaying **employees** array in GUI.

Employee	CompanyManagementSys
- name: String - id: int - salary: double - isManager: boolean + Employee(String, int, double, boolean) + getId(): int + getName(): String + getSalary(): double + getManagerStatus(): boolean + setSalary(double): void + setId(int): void + toString(): String	- MAX CAPACITY = 5: int - employees: Employee[] - count: int + addEmployee(String, int, double, boolean): String + searchEmployeeById(int): boolean + searchEmployee(int): Employee + calculateAverageSalary(): double + display(): String

Create a JFrame named EmployeeMain and design the following GUI:

- Add the following input fields:
 - ID (JTextField)
 - Name (JTextField)
 - Salary (JTextField)
 - Manager (a JCheckBox to indicate if the employee is a manager)
 - Search by ID (JTextField) for searching employees by ID.

Employee Management System

Name:

ID:

Salary:

Manager: ☐ Yes

Search by ID:

- Buttons with the following functionalities:
 - "Add Employee" Button:** When clicked, retrieve the input values from the fields (Name, ID, Salary, Manager Info) and invoke the `addEmployee(...)` method in the `EmployeeManagementSystem` class to add an employee to the array. If the employee is successfully added, display a success message in the `JTextArea`.

Employee Management System

Name:

ID:

Salary:

Manager: ☒ Yes

Search by ID:

Employee Management System

Name:

ID:

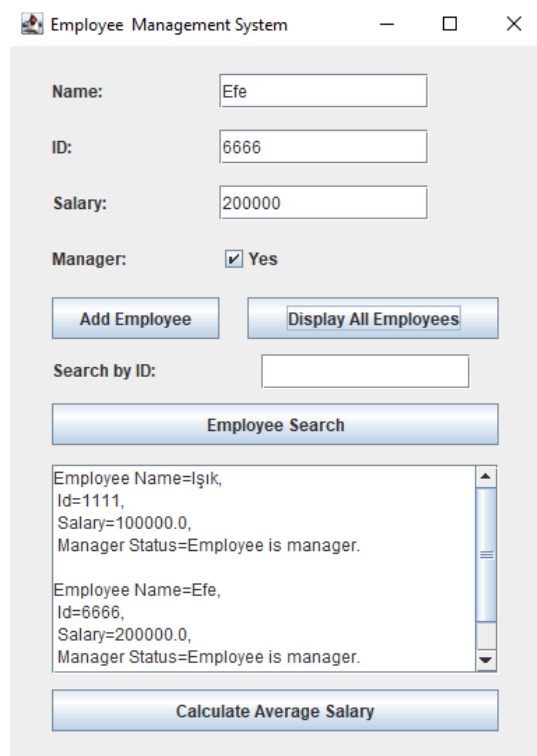
Salary:

Manager: ☒ Yes

Search by ID:

Employee added successfully!

- **"DisplayAllEmployees" Button:** When clicked, call the `display()` method in the `EmployeeManagementSystem` class to display all employees in the array. Display the results in the `JTextArea`.



Employee Management System

Name:

ID:

Salary:

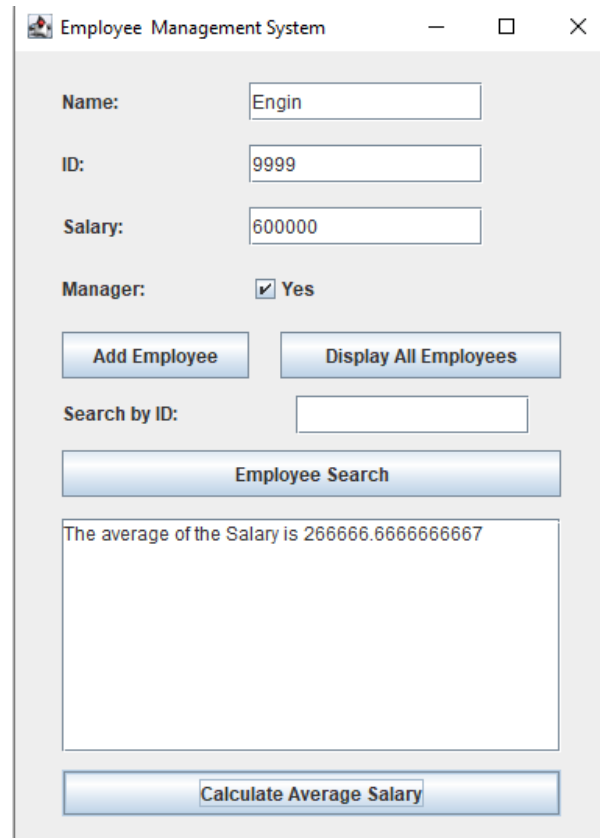
Manager: ☒ Yes

Search by ID:

Employee Name=Işık,
Id=1111,
Salary=100000.0,
Manager Status=Employee is manager.

Employee Name=Efe,
Id=6666,
Salary=200000.0,
Manager Status=Employee is manager.

- **"Calculate Average Salary" Button:** When clicked, call the `calculateAverageSalary()` method in the `EmployeeManagementSystem` class to calculate the average Salary of employees. Display the result in the `JTextArea`.



Employee Management System

Name:

ID:

Salary:

Manager: ☒ Yes

Search by ID:

The average of the Salary is 266666.666666667

- **"Search Employee" Button:** When clicked, take the employee ID from the Search ID text field and call the searchEmployee() method in the EmployeeManagementSystem class. If the employee is found, display their information in the JTextArea. If not found, display a "Employee not found" message.

The image displays two side-by-side screenshots of the 'Employee Management System' GUI. Both windows have a title bar with a red icon, the text 'Employee Management System', and standard window controls (minimize, maximize, close). The left window shows the search results for ID '5555', which are 'Employee not found!'. The right window shows the search results for ID '1111', which are 'Employee Name=Işık, Id=1111, Salary=100000.0, Manager Status=Employee is manager.'.

Left Window (Search ID: 5555):

- Name:
- ID:
- Salary:
- Manager: ☐ Yes
- Buttons: Add Employee, Display All Employees
- Search by ID:
- Employee Search:
- Employee not found!
- Calculate Average Salary:

Right Window (Search ID: 1111):

- Name:
- ID:
- Salary:
- Manager: ☒ Yes
- Buttons: Add Employee, Display All Employees
- Search by ID:
- Employee Search:
- Employee Name=Işık,
Id=1111,
Salary=100000.0,
Manager Status=Employee is manager.
- Calculate Average Salary: