Department

| **Field** | **Type** | **Is Required** | **Filter** |
| --- | --- | --- | --- |
| Name | Text | Yes | partial search |
| Manager | Employee | No |  |

Default values

*Name: Administration, Management, Programming, Marketing, Store*

*Manager: Random employee or nothing*

Employee

| **Field** | **Type** | **Is Required** | **Filter** | **Comments** |
| --- | --- | --- | --- | --- |
| Department | Department | Yes | single + all |  |
| First Name | Text | Yes | partial search |  |
| Last Name | Text | Yes | partial search |  |
| Birth Date | Date | No | Upcoming birthdays specified by days |  |
| Wage | Number | greater than 0 |  | Monthly wage |
| Workdays | Number | from 1 to 7 |  | Working days in a week |

Default values

*Generate 50,000 items with:*

*Department: Random department*

*First Name: “Employee ” + Sequential number*

*Last Name: Random string with 5-15 characters length*

*Birth Date: Random date from 01.01.1940 to 31.12.1995 or nothing (unknown)*

*Wage: Random number 10-1000 divisible to 10*

*Workdays: Random number 1-7*

Create UI for generating and storing to persistent storage Departments and Employees. Each time generating items, the old ones, if exist, should be deleted.

Create UI for viewing (including filters), adding, modifying and deleting departments and employees.

All fields listed above should be shown for each item. Additional fields may be added for organizing underlying storage structure. Additional fields should not be shown in UI.

Report

Generate a simple report with the following parameters:

1.       Date Range, start and end, both are required

2.       Salary amount range, start, and end, both are optional, amount of salary the employee will earn during the given period (point 1)

3.       Department, optional, the department of employee

Calculate salary for employees and show the in the following form

| **Employee** | **Department** | **Wage** | **Workdays** | **Salary** | **Worked Days** |
| --- | --- | --- | --- | --- | --- |
| First Name + Last Name | Employee’s department | Employee’s wage | Employee’s workdays | Earned salary during the period | Working days during the period |

Extra

Add department summary in the report.

Product

| **Field** | **Type** |
| --- | --- |
| Name | Text |
| Price | Number |
| Barcode | Text |
| PLU | Integer Number |
| Image\*\* | Image |

Default values

*Generate 50,000 items with:*

*Name: Random string with 5-15 characters long*

*Price: Random number within range 10-5000, rounded to nearest 10 (the price should be multiple of 10)*

*Barcode: Random string with 13 characters long or null. It should be unique among all items. Null probability should be 0.1 (10% of products should not have a barcode)*

*PLU: Random number in range 1-99999. It should be unique among all items.*

*Image: No image*

Create UI for generating and storing to persistent storage. Each time generating items, the old ones, if exist, should be deleted.

Create UI for viewing (including some basic filters), adding, modifying and deleting products.

All fields listed above should be shown for each item. Additional fields may be added for organizing underlying storage structure. Additional fields should not be shown in UI.

Create a UI to provide basic POS functionality.

1. Text entry field to enter Barcode or PLU then looking for a product.
2. Number field to enter a quantity of found product.
3. A list to show the current basket so far, with a command to delete items in it.
4. A command to commit the purchase, showing a check with brief information about purchase.

Report

Show a detailed report of sold goods with the ability to filter for specific item(s) and date range.

Review

Review your code as another developer who should maintain your project.

Review your project as an end-user, make some offers to improve it.

NOTE 1: Use any design pattern and dependency injection.

NOTE 2: Store the project in [github.com](http://github.com/).

NOTE 3: Tasks marked with asterisk are optional and will be counted separately.