
SOFT6017 PROJECT

- Due: **28th April @ 23:59**
- Submit your code & evidence of using **Git** through **Canvas**
- Oral **assessment & demonstration** in week 12
- Worth: **25%** SOFT6017's overall mark
- The code you submit must be your own best independent effort.
- Code will be tested for **plagiarism** (refer http://www.cit.ie/aboutcit/reports_plansandpolicies/academic for CIT policies).

Specification

Data relating to employees are kept in a file called employees.txt.

The business stores data about each employee consisting of

- A five-digit employee number
- First name
- Surname
- Email
- Salary

A snippet of the file might be:

```
12345
Minnie
Mouse
minnie.mouse@cit.ie
67589.54
23456
Bugs
Bunny
bugs.bunny@cit.ie
67589.54
67581
Wiley
Coyote
wiley.coyote@cit.ie
34234.56
```

or

```
12345,Minnie,Mouse,minnie.mouse@cit.ie,67589.54
23456,Bugs,Bunny,bugs.bunny@cit.ie,67589.54
67581,Wiley,Coyote,wiley.coyote@cit.ie,34234.56
```

Develop an application that allows the user to choose from one of the following options, until they choose to quit.

1. View all employees
2. View a particular employee
3. Edit the salary of an employee
4. Add a new employee
5. Delete an employee
6. Give a bonus to each employee, writing the details to a file
7. Generate a report for management
8. Quit

Details

1. Display the details of all employees.
2. Search for an employee by employee number and display the record.
3. Search for an employee by employee number and edit the associated salary.
4. Add a new employee. Ask the user for the first name, surname and salary. The application should generate a unique email and a five digit employee number that has not already been assigned to an employee.
5. Search for an employee by employee number and delete that employee
6. Ask the user for the (percentage) value of the end-of-year bonus and create a file into which you write the employees' names, employee numbers and the value of the bonus each employee receives. For example if the bonus is 1% then Minnie Mouse receives a bonus of €675.90.
7. Generate a report that includes
 - a. The average salary earned
 - b. The largest salary earned and the name(s) of those who earn it.
8. The application finishes and all data is backed up to employees.txt

Advice

Coding

When using lists make use of the function such as `max()`, `.index()`, `sum()` .

You may use either lists of objects or parallel lists but no other constructs may be used e.g. dictionaries are not to be used.

Version Control System (VCS)

As part of programming a large application it is important to use a version control system to keep track of the changes you make to a program. VCS allow you to revert to an old version if you need to do that. We have chosen **Git**, which is an industry standard and is in-built to PyCharm.

Each time you add functionality, commit that change to Git. At the end of the project, take a **screenshot** of the git log in PyCharm – this will list all the changes in full and brief format, as evidence of how you applied version control.

If you do not use PyCharm you will have to learn how Git works in your own IDE yourself – we are only teach Git/PyCharm.