Oracle
Coding Challenge

Here is a quick coding challenge. It's important to note that it's by no means a test with a single correct answer, we just want to get a sense for how you write code and approach solving problems.

Background

Widget Ltd sells widgets to end users via a field based sales team. The record keeping for the company is a manual filing system which now needs to be modernised. For the MVP, the manual files need to be stored in database tables and there is a requirement to produce a number of reports based around Departments and Employees.

Instructions

We currently use Oracle 19c Database so your solution should be based on the features available in this release. Using appropriate DDL, DML and PL/SQL, you will need to:

1. Create the necessary data structures to contain the data specified in the Appendix ensuring that data integrity is enforced
2. Populate the Departments and Employees data structures using the data specified in the Appendix
3. Create an appropriate executable database object to allow an Employee to be created
4. Create an appropriate executable database object to allow the Salary for an Employee to be increased or decreased by a percentage
5. Create an appropriate executable database object to allow the transfer of an Employee to a different Department
6. Create an appropriate executable database object to return the Salary for an Employee.
7. Write a report to show all Employees for a Department
8. Write a report to show the total of Employee Salary for a Department

Do I need to write tests?

As mentioned we just want to get a sense for how you write code and solve problems, so treat this as any other piece of production code you deliver using the test toolchain of your choice.

Submitting your challenge

- The challenge has to be shared as a git repository
- You can either create a public repository on your favourite git hosting provider (GitHub, GitLab, BitBucket) and share the link
- Or send the whole repository, zipped (including the .git directory)
- Please include both build and run instructions, we use a mix of Windows and Mac on our end
- Important note, please only submit your challenge when you feel you are completely done!

Appendix

Data Structures

Departments File

Field Name	Data Type	Length	Mandatory	Comments
Department Id	Number	5	Y	The unique identifier for the department
Department Name	Character	50	Y	The name of the department
Location	Character	50	Y	The physical location of the department

Department Data

Department Id	Department Name	Location

1	Management	London
2	Engineering	Cardiff
3	Research & Development	Edinburgh
4	Sales	Belfast

Employees File

Field Name	Data Type	Length	Mandatory	Comments
Employee Id	Number	10	Y	The unique identifier for the employee
Employee Name	Character	50	Y	The name of the employee
Job Title	Character	50	Y	The job role undertaken by the employee. Some employees may undertaken the same job role
Manager Id	Number	10	N	Line manager of the employee
Date Hired	Date		Y	The date the employee was hired
Salary	Number	10	Y	Current salary of the employee
Department Id	Number	5	Y	Each employee must belong to a department

Employee Data

Employee Id	Employee Name	Job Title	Manager Id	Date Hir	Salary	Dept Id
90001	John Smith	CEO		01/01/95	100000	1
90002	Jimmy Willis	Manager	90001	23/09/03	52500	4

90003	Roxy Jones	Salesperson	90002	11/02/17	35000	4
90004	Selwyn Field	Salesperson	90003	20/05/15	32000	4
90005	David Hallett	Engineer	90006	17/04/18	40000	2
90006	Sarah Phelps	Manager	90001	21/03/15	45000	2
90007	Louise Harper	Engineer	90006	01/01/13	47000	2
90008	Tina Hart	Engineer	90009	28/07/14	45000	3
90009	Gus Jones	Manager	90001	15/05/18	50000	3
90010	Mildred Hall	Secretary	90001	12/10/96	35000	1