**Python**

1. **Road Repair**

A number of points along the highway are in need of repair. An equal number of crews are available, stationed at various points along the highway. They must move along the highway to reach an assigned point. Given that one crew must be assigned to each job, what is the minimum total amount of distance travelled by all crews before they can begin work?

For example, given crews at points {1,3,5} and required repairs at {3,5,7}, one possible minimum assignment would be {1→ 3, 3 → 5, 5 → 7} for a total of 6 units travelled.

**Function Description**

Develop a function getMinCost that returns the minimum possible total distance travelled as an integer.

***getMinCost*** has the following parameter(s):

crew\_points : a list of integers

repair\_points : a list of integers

**Constraints**

Length of crew\_points and repair\_points should be the same

**Sample Case 1**

crew\_points: [5,3,1,4,6]

repair\_points: [9,8,3,15,1]

**Explanation:** The best possible assignment would be {1 → 1, 3 → 3, 4 → 8, 5 → 9, 6 → 15} and the distance will be 0+0+4+4+9. Therefore, the answer is 17.

**Sample Case 2**

crew\_points: [5,1,4,2]

repair\_points: [4,7,9,10]

**Explanation:** The best possible assignment would be {1 → 4, 2 → 7, 4 → 9, 5 → 10} and the distance will be 3+5+5+5. Therefore, the answer is 18.

1. **Analyse HR Data**

Ensure that you have access to HR Database. If not, please execute the below SQL file to create and load the tables. Use the Excel file and write to CSV in case of no database access but the code snippet for database connectivity, read and write should be included.



1. Read the table employees. Find the employees and their managers using the employee\_id and manager\_id. Return employee\_first\_name and manager\_first\_name. Load the result to the table **tgt\_employee\_approvers.** Add the logic to delete and load the data if the table exists.
2. Read the tables employees and job\_history. Find those employees who earn $12000 and above. Return employee\_id, start\_date, end\_date and job\_id. Write the result to a CSV file **export\_top\_emp\_sal.csv**
3. Read the table employees and departments Find the number of employees in each department. Return department\_id, department\_name, no\_of\_employees and the current\_time. Write the result to the table **tgt\_employee\_count**.
4. Read the table employees and departments and find the employee with 2nd highest salary from each department. Return Employee first\_name, last\_name, salary, department\_name. Write the result to a file **export\_employee\_high\_sal.csv**.
5. Analyze the job\_history and employees tables to find employees who have worked in more than one department. For each employee, return employee\_id, first\_name, last\_name, number\_of\_departments, and departments\_list. Write the result to a file employees\_multiple\_departments.csv.
6. Identify the top 5 employees with the highest total compensation (salary + commission) in each department. For each department, return department\_id, department\_name, employee\_id, first\_name, last\_name, total\_compensation. Write the result to the table tgt\_top\_compensations.
7. Analyze the average salary for each job title in each department. Return department\_id, department\_name, job\_id, job\_title, and average\_salary. Write the result to the table tgt\_avg\_salary\_by\_job\_title.