TP1 - ALSDD – 1st Year CPI, S2

Occupational Health Medical Visit Management

An occupational health service at an industrial company needs to automate the management of medical consultations for its employees (10 consultations per day). The service uses two text files **EmpRecords.txt** and **Consultations.txt** to store information about employees and day's scheduled consultations.

The file **EmpRecords.txt** contains, for each employee, the following information:

- **Employee ID:** Unique identifier (up to 8 characters)
- **Full Name**
- **Total Number of Consultations**
- **Last consultation Date:** Format DD/MM/YYYY
- **Return to work Date (optional):** Format DD/MM/YYYY
- **History:** A list of previous consultation reasons (5 at most)

The file **Consultations.txt** contains details for each consultation:

- **Employee ID**
- **Employee Name**
- **Consultation Time**
- **Consultation Reason:** possible reasons are:
  - **Work accident:** for employees who have suffered an accident at work.
  - **Occupational disease:** for employees illnesses linked to workplace exposures.
  - **Return-to-work visit:** for employees returning to work after an accident or illness.
  - **Pre-employment visit:** for initial health assessment required before hiring.
  - **Periodic examination:** for regular check-ups to monitor employees' well-being.

The system should implement functionalities to **create a prioritized appointment queue** for the day based on the consultations file, with priority assigned according to the consultation reason, **manage appointments**, **update employees' records** and **schedule next-day appointments**.

Tasks to Complete

1. **Managing employees' records**
   - **Create** a linked list of employees' medical records from the **EmpRecords.txt** file and provide functionalities to **add**, **update** and **delete** records.

2. **Managing appointments**
   - **Create** the **priority appointment queue** from the **Consultations.txt** file:
     - Assign priority to appointments based on the consultation reason: "Work accident" has the highest priority, followed by "Occupational disease", then

"Return-to-work visit" and "Pre-employment visit" with the same priority, and finally "Periodic examination" has the lowest priority.

- The queue must maintain FIFO order for appointments with the same priority.

- Manage appointments by **adding** new (on-demand) ones, **rescheduling** (only for the next day), **cancelling** or **closing** (once the consultation is finished) them.
  - For new appointment, the consultations reason may be either "Work Accident", "Occupational Disease" or "Pre-employment Visit".
    Ensure that the total number of appointments does not exceed 10 (if possible, consider rescheduling the lowest priority appointment the next day).
  - When the appointment is closed, update the corresponding employee record. For "Pre-employment Visit" appointments, a new employee record may be added to the records list.

3. **Scheduling appointments of the next day**
   - Schedule the next day "Return-to-Work Visits" and "Periodic examinations" appointments (with a maximum of 10 appointments). Periodic examinations are performed every year.

4. **Updating the records and consultations Files**
   - After processing all the day's appointments, generate a new version of the **EmpRecords.txt** and **Consultations.txt** files that reflects the updated medical records and the next-day scheduled consultations**.**

Additional Guidelines and Requirements

- The lab is to be completed **in pairs**.

- The implementation must be done in **C language**.
  - Write clear, well-structured, and commented code.
  - Organize your linked list and queue models and implemented functions in a library.

- **Submission**:
  - A form will be provided to submit your work (as a compressed file named: Name1_Name2_GXX_TP1).
  - Deadline: **05/04/2025**.