ELECTRICAL TEAM TRAINING

TASK 2

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Task 2

Robot Rental System

You love trying new things and felt bored on Earth, so you decided to take your robot and spaceship on a journey to discover the universe. You landed on a new planet where people have never seen robots before and decided to start your own business “Robot Rental Company”. You are supposed to make an admin system for renting robots for users to help them with their daily tasks.

Suppose you are the admin of a robot rental system

Start by having:

- 3 Robots with different names, each doing a number of functions
- 3 users with different names, telephone numbers, and emails.

Each user can rent any available robot for a day

For example, if today is Monday, User1 is renting Robot1, then Robot1 is unavailable for rent on Monday, but available on Tuesday, Wednesday, … etc. for other users to rent it.

As well, since you are the admin, you can add a robot and its details when your company buys a new one. You can also add a user if a new customer comes to your company.

For informational purposes, your program can also display robots, users, and their details.

Main:

- Define array of robots (array of objects of class Robot)
- Define array of users (array of objects of class User)

Available functions:

Your program starts with the following menu:

- **Add robot:** ask for name, function_id's (**separated by commas**), and price per day
- **Add user:** ask for name, telephone number, email
- **Display all users:** display their names, telephone numbers, emails and robots rented (if any)
- **Display all robots:** display their names, function_id's, price, and days the robot is rented (if any)
- **Search for robot by name:**
  - Show robot's details and days rented (if any)
- **Search for user by name:**
  - Show user's details and details of rented robots (if any)
- **Rent robot to user:**
  - Shows admin all users and asks him to choose which user to rent to
  - Get date (in the format: **day/month/year**) you want to rent robot on:
    - Show **available** robots (which is not rented on this day) , their functions and their price
    - Ask admin to choose which robot to rent
    - Show rent successful message (change Boolean "rented" and add dates to the array of the object)
- **Exit:** exits the program

Robot attributes:

- Name
- Array of function_id's
- Price per day
- Rented (Boolean)
- Array of dates rented (in the format: **day/month/year**)

User attributes:

- Name
- Telephone number
- Email
- Array of robots rented

Possible functions:

- Cleaner Robot (function_id: 1)
- Driver Robot (function_id: 2)
- Assignment Solver Robot (function_id: 3)
- Cook Robot (function_id: 4)
- Hairstylist Robot (function_id: 5)

Notes

- Your codes should compile successfully
- From the main principles of OOP (Encapsulation - Abstraction - Inheritance - Polymorphism) apply the principles that would help in your code structure.
- You should choose suitable names for the functions and variables.
- Your code should be clean and well-commented.
- You must validate and sanitize all inputs.
- You should choose suitable names for each .cpp and .h files.
- You must submit a detailed **REPORT** to explain your code structure and algorithms you used in different functions
- ANY extra effort will be highly considered.

Submission

- You should submit a compressed file containing your report, all .h and .cpp files and also your main.cpp file.
- Your compressed file must follow the naming convention (phoneNumber_task2.zip)
- Submit your solution using this form: https://forms.gle/XhjgtfHRnVWMfBJt7
- DEADLINE Saturday 23/7 at 11:59 PM