

Programming Project / C++

Dental Office Appointment System

Students

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I. Task Description

Student 1 is responsible for managing the operations offered:

- Adding and deleting offers (name, price, duration)
- Viewing offers

Student 2 is responsible for managing the appointment system:

- Scheduling, viewing and deleting appointments
- Checking for availability

II. Data Structures Used by the Team

The following classes are used to represent the application state:

- **Offer:** `string name, float price, int duration`
- **Appointment:**

```
string client_name, Offer offer, chrono::year_month_day date, chrono::hh_mm_ss<chrono::minutes> time
```

Class Relation - Aggregation: The `Appointment` class contains the `Offer` class as an attribute.
- **CsvFile<T>:** `string path, vector<T> entries`
- **OfferManager extends CsvFile<Offer>:** Manages offers stored in *offers.csv*.
- **AppointmentManager extends CsvFile<Appointment>:** Manages appointments stored in *appointments.csv*. Can compute available slots for a given day.
- **Each application command extends Command:** Each command is implemented as a class derived from the abstract `Command` class, overriding the virtual `execute` method.

III. File Structure

The two applications communicate through the following files:

- **offers.csv**
Stores offered operations in CSV format, where each line is of the form `<offer_name>,<price>,<duration>`. `<price>` is in *RON*, while `<duration>` is in *minutes*.

Example: `Dental Cleaning,75,30`

- **appointments.csv**

Stores appointments in CSV format, where each line is of the form `<client_name>,<offer>,<date>,<time>`. `<date>` is in `dd/mm/yyyy` format, while `<time>` is in `hh::mm` format.

Example: Marcel,Dental Cleaning,15/06/2025,16:30

IV. Interacting with Executables

Application 1 Commands:

- `./app_1.exe view_offers`
View all available offers
- `./app_1.exe add_offer <offer_name> <price> <duration>`
Add a new offer
- `./app_1.exe delete_offer <offer_name>`
Delete an offer

Application 2 Commands:

- `./app_2.exe view_appointments <client>`
View the appointments of the client
- `./app_2.exe check_availability <date>`
View available time slots for appointments
- `./app_2.exe schedule_appointment <client_name> <offer> <date> <time>`
Schedule an appointment
- `./app_2.exe delete_appointment <client_name> <date> <time>`
Delete an appointment