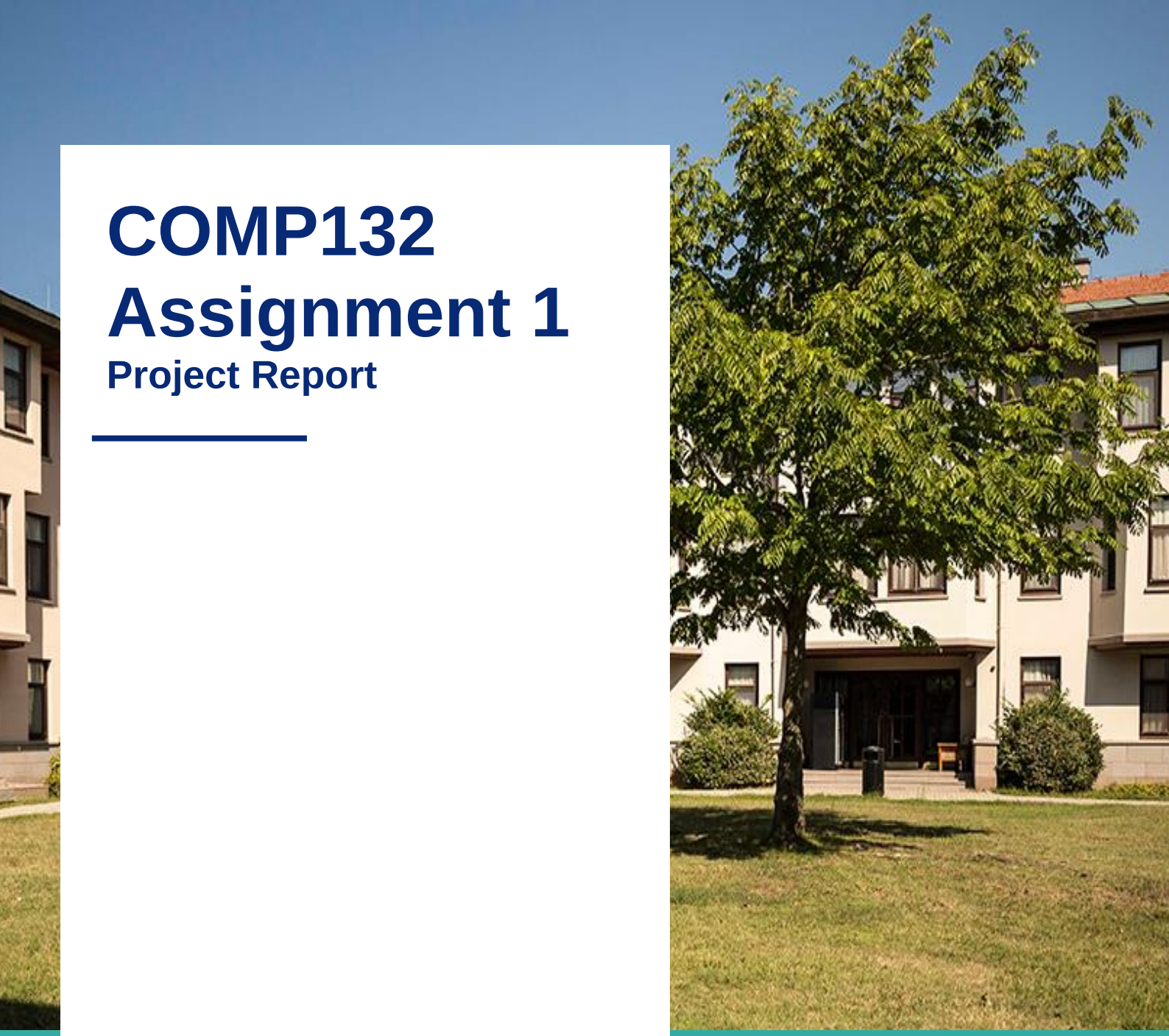

COMP132 Assignment 1

Project Report

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Clinic Package

Abstract Class: Clinic

Clinic class is an abstract superclass for the rest of the classes in clinic package. Clinic objects have the following fields:

- String name
- Treeset<Doctor> doctors
- TreeSet<Patient> patients
- double drugCommPercentage
- double drugProfit
- double visitProfit
- double totalProfit
- int clinicID

Clinic class has the following methods:

- Getters and Setters
- Constructor
- Override toString()
  - Returns name
- abstract void addDoctor(Doctor d, Clinic c)
  - exclusive execution in each subclass
  - adds doctor to the clinic
  - sets doctors clinic to the specified clinic
- abstract void removeDoctor(Doctor d)
  - exclusive execution in each subclass
  - removes doctor from the clinic
- void addPatient(Patient p)
  - adds patient to the clinic's patient list
- void removePatient(Patient p)

    - removes patient from the clinic's patient list
- String displayPatients()
    - Displays the patients in the clinic
- String printSchedules()
    - Prints schedules of all doctors in the clinic

Class: Opthalmology

Opthalmology class is a subclass of Clinic class. It executes the abstract methods with Clinic c = Opthalmology object. It implements Comparable interface and compares its type with the following property:

- clinicID

Class: Orthopedics

Orthopedics class is a subclass of Clinic class. It executes the abstract methods with Clinic c = Orthopedics object. It implements Comparable interface and compares its type with the following property:

- clinicID

Class: Psychiatry

Psychiatry class is a subclass of Clinic class. It executes the abstract methods with Clinic c = Psychiatry object. It implements Comparable interface and compares its type with the following property:

- clinicID

Class: Urology

Urology class is a subclass of Clinic class. It executes the abstract methods with Clinic c = Urology object. It implements Comparable interface and compares its type with the following property:

- clinicID

Doctor Package

Class: Doctor

Doctor class has the following fields:

- String name
- int id
- Clinic clinic
- TreeMap<String, Patient> schedule
    - String is hour
- double visitingCost
- double commission
- double income
    - Doctor’s share of the money is added to this after every examination

Doctor class has the following methods:

- Getters and setters
- Constructor
- Override toString()
    - Returns name

Doctor class implements the Comparable Interface and Overrides compareTo with the following property:

- id

Drug Package

Class: Drug

Drug class has the following fields:

- String name
- double price
- TreeSet<Drug> conflictingDrugs

Drug class has the following methods:

- Getters and setters
- Constructor
- Override toString()
    - Returns name

Drug class implements the Comparable Interface and Overrides compareTo with the following property:

- name

Patient Package

Class: Patient

Patient class has the following fields:

- String name
- int ID
- int age
- String gender
- TreeSet<Drug> historyOfDrugs

- TreeSet<Drug> newlyPrescribedDrugs
- String backgroundIllnesses
- TreeSet<Examination> treatmentHistory

Patient class has the following methods:

- Getters and setters
- Constructor
- String details()
    - Returns the extensive details of the patient
- Override toString()
    - Returns name

Patient class implements the Comparable Interface and Overrides compareTo with the following properties:

- Age
    - Older is first
- Gender
    - If same age, female is first
- ID
    - Checks if two patients are the same person

Polyclinic System Package

Interface: Prescribe

Prescribe interface has one method:

- void prescribeDrug(Drug d, Patient p)

Class: Examination

Examination class has the following fields:

- Patient patient
- Doctor doctor
- String hour
- Drug prescribedDrug
- String examinationID

Examination class has the following methods:

- Constructor
  - Creates an examinationID with the following properties:
    - Patient ID
    - Doctor ID
    - Doctor's Clinic's ID
    - Hour
  - Updates the following:
    - Doctor's Clinic's drug profit
    - Doctor's Clinic's visit profit
    - Doctor's Clinic's total profit
- double fee(Patient p, Doctor d, Drug drug)
  - calculates and returns the examination fee
- Override toString()
  - Returns prescription with following fields:
    - Patient Name
    - Doctor Name
    - Time of Examination
    - Prescribed Drug
    - Examination Fee

Examination class implements the Comparable Interface and Overrides compareTo with the following property:

- examinationID

Examination class implements the Prescribe Interface and Overrides prescribeDrug:

- void prescribeDrug(Drug d, Patient p)
    - adds drug to patient's history of drugs.
    - adds drug to patient's newly prescribed drugs.

Class: Reservation

Reservation class has the following fields:

- Patient p
- Doctor d
- String hour
- String reservationID

Reservation class has the following methods:

- Constructor
    - Checks if Doctor's schedule is empty at that hour
    - Creates a reservationID with the following properties:
        - Patient ID
        - Doctor ID
        - Doctor's Clinic's ID
        - Hour
- Override toString()
    - Returns details of reservation:
        - Patient Name

        - Doctor Name
        - Appointment Time

Reservation class implements the Comparable Interface and Overrides compareTo with the following property:

- reservationID

Class: App

App Class is a subclass of JFrame Class. App class has the main argument and thus executes the whole program. App Class first generates the doctors, patients, drugs (sets conflicting drugs). It also generates sets for each type and fills them. App Class has 8 operations and has a button for each in the westPanel. It also has a scrollable briefing area where information is printed on the centerPanel.

Class App has the following operations:

- Add New Patient
    - Collects inputs for the Patient
        - If input ID is in use by another patient or is not an eligible ID, operation terminates.
        - If input Age is not a reasonable age (0-120), operation terminates.
        - Gender can be selected with the help of a ComboBox.
        - Previously used drugs can be selected with check boxes.
    - Creates the patient. Patients information will be visible in the briefing area, along with a confirmation message.
- Make Reservation
    - User selects the patient, the clinic, and the hour from combo boxes.

    - If there is a vacant spot in one of the doctors in that clinic, reservation is created. Its details will be visible in the briefing area.
    - Else, operation terminates
- Examine Patient
    - All created reservations appear in the combo box of this operation.
    - Users can select one of these reservations, and hit perform examination.
    - In the next window, user should choose which drug to prescribe.
        - If this drug conflicts a drug in patients history, program terminates.
    - In the final window, users can choose between giving out a prescription or not. If they choose to, prescription appears in the briefing area.
    - This operation updates the profits and incomes of clinics and doctors.
- View Patient Records
    - Users can select a patient from the combobox and this patients details will be visible in the briefing area.
- Display Patients in Clinic
    - Users can select a clinic from the combobox and this clinic's patients will be visible in the briefing area.
- Show Profit of Clinic
    - Users can select a clinic from the combobox and this clinic's profits will be visible in the briefing area.
- Income of a Doctor
    - Users can select a Doctor from the combobox and this doctor's income will be visible in the briefing area.
- Print Schedules

- Users can select a clinic from the combobox and the schedule of this clinic’s doctors will be visible in the briefing area.