CRC Cards

The CRC (Class-Responsibility-Collaboration-Card) is a tool for object-oriented design. The basic principle is to create a file card for each class and note its properties.

Structure

Class

- Which things are parts of the system?
- Which things communicate or interact with the system?
- Are there specific customers or users of the system?

Responsibilities

- What is this class doing? (Functions)
- Which information is known to this class? (Attributes)

Collaborators

- Does this class need information from another class?
- Does this class change information from another class?
- Is there a collaboration with another class?

Overview

People

natPerson

natPerson (abstract) is the basis for natural persons.	
Responsibilities	Collaborators
<table><tr><td>Functions:</td></tr><tr><td>●</td></tr><tr><td>Attributes:</td></tr><tr><td> - Name - Firstname - Address - Postcode - City - Birthday - Gender - AHV </td></tr></table>	Superclass of Employee and Patient

Employee

Employee (abstract)	
forms the basis for employees. The employee class also contains the login information, since all employees should have a login to the application.	
Responsibilities	Collaborators
	● Extend natPerson

Functions:
● interact with the application
● can be hired
● can change the insurance
● can be cancelled
● can log in

Attributes:
● Salary
● Departement
● BUV (Berufsunfallversicherung)
● NBUV (Nichtberufsunfallversicherung)
● EmploymentStartDate
● EmploymentEndDate
● Nickname
● Password

Doctor

Doctor	
a doctor is the main role of our application	
Responsibilities	**Collaborators**
Functions: - can mutate BABNr, ZSRNr, MEBEKONr - can change his speciality - can manages reports - can delegate MPA - can manage a case Attributes: - BABNr - ZSRNr - MEBEKONr - Specialty	- Extends Employee - manages reports - Instructs MPAs - manages Cases

MPA

MPA	
is the direct assistant to the doctor. MPA work as nurses	
Responsibilities	**Collaborators**
Functions: - can mutate his admission number - can insert data for reports - manages patients - carries out instructions from the doctor Attributes: - MEBEKONr	- Extends Emplyoee - creates & uses report - Uses patients - Uses cases

Patient

Patient is the basis for a patient in our system	
Responsibilities	Collaborators
Functions: ● addMessage ● nextMessage ● getMessages **Attributes:** ● PatID ● List Messages	● Extend natPerson ● Has 0 to multiple Case ● Has 0 to multiple Message ● can be part of a PatientReport

Report data

Report

Report (abstract class)	
Is the basis for the Patient-, Case-, Business- and StandupReport.	
Responsibilities	Collaborators
Functions: ● can mutate its attributes ● getXML Attributes: ● Title ● Description ● IssueDate ● IssuedBy	● is created by Employees ● Is Superclass of PatientReport, CaseReport, BusinessReport and StandupReport

PatientReport

PatientReport (Standortbestimmung Patient)	
Describes a detailed Report of a Patient and all his Cases.	
Responsibilities	Collaborators
Functions: Attributes: ● PatientAutonomy ● PatientConfidence ● PatientHumanity ● PatientAwareness ● PatientConscientiousness ● PatientKnowledge ● PatientRationality ● PatientResponsiveness ● PatientVigilance	● Extends Report ● PatientReport belongs to exactly 1 Patient. ● Uses patient

CaseReport

CaseReport (Schichtwechsel)	
is the basis for a case report and evaluation	
Responsibilities	Collaborators
Functions: Attributes: ● CaseID	● extends Report ● uses 1 case to extract data

BusinessReport

BusinessReport (Präsentation für Politik)	
is basis for stakeholders	
Responsibilities	Collaborators
Functions: Attributes: ● HIVPatients ● HepCPatients ● GeneralAcknowledgements ● PatientConfidentialities ● Sales / FinanceNumbers	● extends Report

DailyReport

DailyReport (Schichtübergabe)	
is the basis for shift changeover	
Responsibilities	Collaborators
Functions: Attributes: ● list of patients ● list of messages ● description	● extends Reports ● uses patients ● uses messages

WeeklyReport

WeeklyReport (Wochenrückblick)	
is the basis for weekly changeovers	
Responsibilities	Collaborators
Functions:	● extends Reports ● uses cases ● uses patients

Attributes:	
● list of patients ● list of cases	

Case Informations

Case

Case	
A case describes one finite consultation between a doctor and a patient	
Responsibilities	Collaborators
Functions: ● mutate its attributes Attributes: ● CreationDate ● EndDate ● Place ● Insurance ● InsuranceName ● InsuranceNr	- Belongs to exactly 1 Patient - Belongs to exactly 1 CaseReport - Can contain 0 or multiple Appointment, Prescription, LabResults. - Has at least 1 or multiple Diagnosis - Has exactly 1 Anamnesis

Diagnosis

Diagnosis	
Describes a diagnosis of a case	
Responsibilities	Collaborators
<table><tr><td>**Functions:**</td></tr><tr><td>● mutate diagnosis attributes</td></tr></table> **Attributes:** ● DiseaseName ● Date ● Severity ● Symptoms ● Risks ● Causes ● Prognosis ● Treatments ● Coding	- Is part of exactly 1 case - Is created by Employee

Appointment

Appointment	
Is needed for managing appointments in the calendar and belongs to a case	
Responsibilities	Collaborators
Functions: ● can be repetitive ● can mutate time, date, place **Attributes:** ● Time ● Date ● Place ● Patient ● Employee (IssuedBy)	- is part of a case - is created by Employee - is using Patient

Anamnesis

Anamnesis	
Describes the detailed anamnesis of a Case	
Responsibilities	Collaborators
Functions: ● can mutate anamnesis details Attributes: ● SocialAnamnesis ● Employment ● Relationships ● Home ● PersonalAnamnesis ● Allergies ● Drugs, Addiction, Diet ● Hobbies ● History of Illness ● SystemAnamnesis ● FamilialAnamnesis	- Belongs to exactly 1 Case. - Is created by Employee

Prescription

Prescription	
Describes a prescription for drugs and or medicaments	
Responsibilities	Collaborators
  Functions: **Attributes:** ● Quantity ● Time of Administering, Dosage ● Number of Administering ● Valid until (Date) ● Ev. (Digital) Signature ● Ev. Covered by Insurance y/n ● Ev. Location of Obtaining	- Belongs (is included) in exactly 1 case. - Belongs (includes) 1 or multiple drugs. - Is created by Employee - uses drug

Drug

Drug	
Describes a drug used in a description	
Responsibilities	Collaborators
  Functions: ● **Attributes:** ● Name ● Dosis / Weight ● Packing ● Administering (Dosage form) ● Color ● Warnings, Caves ● Price ● Composition, Ingredient ● Chemical Formula ● Reaction ● (Possible) Side effects	- Belongs (included) in 1 to multiple Prescription. - Contained by Prescription

LabResults

LabResults	
Describes the Result of a Lab-related Analysis, e.g. blood or urine	
Responsibilities	Collaborators
<table><tr><td>Functions:</td></tr><tr><td></td></tr><tr><td>Attributes:</td></tr></table>　● BloodAnalysis 　● Hemoglobin, Hematocrit, Cells 　● ChemicalAnalysis 　● Sugar, Proteines, Vitamines 　● MicrobiologicalAnalysis 　● Bacteria, Virus, Parasites 　● HIV 　● Hepatitis-C 　● UrineAnalysis 　● Glucose	- Belongs (is included) to exactly 1 Case. - Belongs (has) its results from exactly 1 Lab. - Is created by Employee - Analyzed by Lab

Lab

Lab	
Describes an external Lab, its address and location	
Responsibilities	Collaborators
Functions: Attributes: 　● Name 　● Address 　● Postcode 　● City 　● Description 　● Contact / Unpersonal E-mail / Tel	- Belongs (is included) in 0 to multiple LabResults.

Other

Message

Message (Highlights)	
is the basis for internal messages	
Responsibilities	Collaborators
<table><tr><td>Functions:</td></tr><tr><td>● can mutate its attributes</td></tr><tr><td>Attributes:</td></tr><tr><td>● MessageId ● Content ● sentDate ● status ● Employee (CreatedBy)</td></tr></table>	● is created by Employees ● belongs to 1 Patient