

**Question (100 marks)**

Given the problem description below, describe all mentioned concepts of the proposed Conference Paper Management System (CPMS) and their relationships using a **class diagram**. You do not need to show (a) operations, (b) types of attributes, and (c) constraints.

**Problem Description: Conference Paper Management System**

The Conference Paper Management System (CPMS) facilitates the selection of papers to be presented at a conference. For this purpose, a user logs into the CPMS either as a program chair, an author of a paper, or a reviewer.

The program chair is responsible for establishing the program committee, i.e., the reviewers, for a particular conference. A conference is typically held once every year at a different location. The program chair first enters the names and email addresses of potential reviewers. The system then sends the potential reviewers an invitation stating the name of the conference, the research area of the conference, this year's start and end date of the conference, as well as this year's location. The invitation also states the submission deadlines for papers (i.e., by what date authors have to submit a paper to the conference) and the notification date (i.e., by what date a decision regarding the acceptance of a paper has to be made). A potential reviewer can either accept or decline the invitation.

An author logs into the system to submit a paper. A paper may be written by several authors. Authors may submit as many papers as they wish to as many conferences. For the submission, the author provides the names and email addresses of all co-authors, the title of the paper, the abstract of the paper, as well as the paper's pdf file. An author is not allowed to submit the same paper to more than one conference.

A reviewer logs into the system to accept or decline an invitation and to enter a review for an assigned paper. A review consists of the actual text of the review as well as a rating out of four options: strong accept, weak accept, weak reject, strong reject. The system automatically assigns papers to reviewers who have accepted their invitation based on the following criteria. Each paper must be reviewed three times. A reviewer cannot be assigned to a paper for which the reviewer has a conflict of interest. A reviewer may flag a paper for which she/he has a conflict of interest. In addition, all papers authored by a reviewer and submitted to the conference are flagged automatically as having a conflict of interest for the reviewer. The program chair is not allowed to submit a paper to the conference for which she/he is acting as the program chair but may submit papers to other conferences.

Given the three reviews of a paper, the program chair makes the final decision on whether to accept a paper for presentation at the conference or to reject the paper. Given the reviews of a paper, the author of an accepted paper may make changes to the title, abstract, and pdf file of the paper and resubmit it to the system. However, the authors of a paper cannot be changed.