Course Scheduling System

Problem Identification

- Priya is a member from the training department of a company who has to prepare a training plan that has different courses. Few of these courses need some prerequisite courses to be completed.
- The goal is to prepare a training plan such that all the courses are included in the correct order and the learning is on track.

Decomposition

- **Course Catalog -** This Component involves the management of the course catalog, including descriptions, prerequisites and other relevant information.

- **Course Scheduling -** This component is responsible for generating an optimal schedule of courses for each semester, taking into account course availability, student preferences, and other relevant constraints.

- **Student Registration -** This component involves the management of student registration for courses and ensuring that students are registered for the appropriate courses, that they meet all the prerequisites, and that their schedules do not conflict with other courses.

- **Analytics and Reporting:** This component involves the collection and analysis of data related to course scheduling and student registration and responsible for generating reports and visualizations that provide insights into course availability, student preferences, and other relevant metrics.

- **User Interface:** This component provides an intuitive and user-friendly interface for students and staff to interact with the course scheduling system and may include features such as course search, registration, and scheduling, as well as messaging and notification functionality to keep students and staff informed about course availability and other updates.

Pattern Recognition

- **Identify the courses -** The first step is to identify the courses related to pattern recognition that need to be included in the training plan. This can include courses in image processing, machine learning, computer vision, and other related fields.

- **Determine prerequisite -** Once the courses have been identified, it is important to determine which courses have prerequisites. For example, a course on machine learning might require a course in calculus or linear algebra as a prerequisite.

- **Create a course dependency graph -** After identifying the prerequisites, a course dependency graph can be created to visualize the relationships between the courses. This graph can help to identify the order in which the courses should be taken to ensure that the students have the necessary background knowledge.

- **Schedule the courses -** Based on the course dependency graph, the courses can be scheduled in the correct order. This can involve scheduling courses with no prerequisites first, and then moving on to courses with prerequisites.

- **Monitor the progress -** Finally, it is important to monitor the progress of the training plan to ensure that the learning is on track. This can involve tracking the completion of each course, as well as collecting feedback from the students to identify any areas that may need improvement.

Abstraction

- This involves filtration from where we identify necessary things a part from these can be ignored.
- In these problem we have to identify necessary things like identify the courses, their relevant information, and also collect the information of those student who have purchased the courses.