

The code uses a recursive approach to solve this problem. Here's a breakdown of how it works:

The Pref array stores the preferences of each student. For example, Pref[0][1] is 1 if student 0 likes topic 1, and 0 otherwise.

The assigned array keeps track of which topic is assigned to each student. For example, assigned[0] stores the topic assigned to student 0, or -1 if no topic is assigned.

The IsAssigned function checks if a topic is already assigned to a student.

The AssignTopics function is a recursive function that tries to assign topics to students. It takes a student index as an argument and returns the number of valid assignments found.

In the main function, the program reads the number of students and their preferences, and then calls the AssignTopics function with the first student (0) as an argument.

Example Walkthrough

Suppose we have 4 students with the following preferences:

StudentTopic 0 Topic 1 Topic 2 Topic 3

0	1	0	1	0
1	0	1	0	1
2	1	1	0	0
3	0	0	1	1

The program will try to assign topics to students as follows:

Student 0: tries Topic 0 (likes it), assigns it, and recursively calls AssignTopics with Student 1.

Student 1: tries Topic 1 (likes it), assigns it, and recursively calls AssignTopics with Student 2.

Student 2: tries Topic 2 (doesn't like it), tries Topic 0 (likes it, but already assigned), tries Topic 3 (likes it), assigns it, and recursively calls AssignTopics with Student 3.

Student 3: tries Topic 3 (likes it, but already assigned), tries Topic 2 (likes it), assigns it, and returns 1 (valid assignment).