

The Registrar class, as it needs to have exactly one object, uses the singleton pattern. With lazy initialization implemented, the efficiency of the system was improved, as when the registrar was not created until it was first used. Within the class, every time it receives a request from a student of registering themselves to a certain course, if the course does not exist in the system, the registrar then constructs the course object, then registers the student to the course. Otherwise, it registers the student to the course taken out from the set of existing courses.