ABSTRACT

Efficiency is one of the main objectives in system development, as well as in the creation of practicum schedules. Practicum activities are mandatory courses in the Computer Engineering program, starting from students registered as participants. These mandatory practicum activities are attended by numerous students, especially in the Computer Engineering program. Considering the number of students, the need for a practicum schedule for each individual, both participants and assistants, becomes apparent. Currently, the process of creating practicum schedules is still manual, including the selection of schedules by participants and assistants, as well as data entry and processing by laboratory staff. This manual scheduling process inevitably leads to a time-consuming and highly inefficient procedure, necessitating a system that can handle these tasks automatically.

This research aims to provide a solution to the inefficiency problem in the current scheduling process. With this objective in mind, a practicum scheduling system will be designed in the form of a website as an intermediary to manage the input of schedules for both participants and assistants, resulting in an optimal practicum schedule for both parties. To achieve this, the researcher will employ the waterfall method, and data processing will be carried out using the Genetic Algorithm with additional constraints. The constraints of the Genetic Algorithm will depend on the provided data, and in pursuit of efficiency, there may be alterations to the algorithm used. These algorithm-dependent constraints will lead to the generation of an optimal practicum schedule.

Based on the research results of the system design, it can be concluded that the designed system is capable of avoiding collisions between lecture and practicum sessions. The research produced a participant algorithm and assistant algorithm that can handle the class schedule, resulting in an optimal generation of practicum schedules for both types of data. With the implementation of this system, the process of creating both practicum and teaching schedules is simplified, leading to increased efficiency and obtaining more optimal schedules.

Keywords: Genetic Algorithm, Practicum Scheduling, Website.