Universiti Teknologi MARA

Sports Tournament Scheduling Using Genetic Algorithm

Hafeezur Syakir Bin Abdul Motok @ Mohd Ridzuan

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SUPERVISOR APPROVAL

SPORTS TOURNAMENT SCHEDULING USING GENETIC ALGORITHM

By

HAFEEZUR SYAKIR BIN ABDUL MOTOK @ MOHD RIDZUAN
2017907337

This report was fully prepared under the supervision of the project supervisor, Sir Sulaiman Bin Mahzan. It was submitted to the Faculty of Computer and Mathematical Sciences and was accepted in partial fulfilment of the requirements for the degree of Bachelor of Computer Science (Hons).

Approved by

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Sulaiman Bin Mahzan
Project Supervisor

JANUARY 3, 2020

STUDENT DECLARATION

I certify that this report and the project to which it refers is the project of my own work and that any idea or quotation from the work of other people, published or otherwise are fully acknowledge in accordance with the standard referring practices of the discipline.

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HAFEEZUR SYAKIR BIN ABDUL MOTOK @ MOHD RIDZUAN
2017907337

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ABSTRACT

The organizer of sports events often fronting problems such as the incorrect allocation of matches as well as tough to create a good and reliable schedule. Most of the time, the difficulties created by the committee members was by the mistakes made by the human. The manual method is sluggish and tedious, not to mention costly when they have to process the data elsewhere. A highly constrained combinatorial problem, like the sports timetable, can be resolved by evolutionary methods. Thus, a schedule for the sports tournament is needed in order to delegate the matches in a tournament. The purpose of this research is to analysed the algorithm techniques and illustrate how the technique solves these problems. In this report, a Genetic Algorithm (GA) is applied for solving University sports timetabling problems. In genetic algorithm, there are steps include such as initialize population, selection, crossover, mutation and calculate fitness. These steps are repeat until a condition satisfied. The system uses the Rapid Application Development (RAD) methodology in system development and will be operate on a web-based platform. The phase in RAD such as planning requirements, user design, rapid construction and cutover is used during development. RAD highlights on user interaction and quick development of the system using prototypes. The functionality testing is conducted using Blackbox testing technique to test the functionality of the project.

Keyword: Evolutionary, Blackbox testing technique, Genetic Algorithm, Sports timetable, Rapid Application Development

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