THE UNIVERSITY OF DODOMA

THE COLLEGE OF INFORMATICS AND VIRTUAL EDUCATION

DEPARTMENT OF INFORMATION SYSTEM AND TECHNOLOGY

FINAL YEAR PROJECT

PROJECT TITLE: AUTOMATED CIVE SPORTS TIMETABLE ALGORITHM

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CHAPTER ONE

INTRODUCTION

1.1 BACKGROUND

The history of CIVE sports and games ministry about 10years till now is the one of the most successful ministries in CIVE and leads to the development of sports and games inspired by the ministry of information, culture, arts and sports (TANZANIA). This ministry is now one of the powerful and inspirational to most of the students in CIVE. Over all these years this CIVE sports and games ministry has been doing their operations such as timetable scheduling and promotions manually and faces a lot of consequences which hinders the development of this ministry

1.2 PROBLEM STATEMENT

The problem facing sports and games ministry is timetable scheduling which leads to biasness during CIVE leagues such as inter-block competitions, field cups and CIVE cups where timetable is planned manually by sports leaders concerned which lead to misunderstanding between teams playing. Due to this problem, we decided to come up with the solution of generating timetable scheduling using algorithm called genetic algorithm.

1.3 **OBJECTIVES**

1.3.1 Main objectives

- To develop a system which contain an algorithm that will significantly perform random selection of sport timetable scheduling at cive in order to minimize conflicts which occur during conduction of different league that performed at CIVE

1.3.2 Specific objectives

A. To gather requirement that will automate sport timetable scheduling.
B. To design an algorithm that will based on obtained requirement
C. To implement system from the designed algorithm and requirement gathered
D. To test system if it has reached the main objective

1.4 PROJECT RATIONALE/SIGNIFICANCE

i. Unlike the manual timetable system, the system offers flexibility.
ii. It utilizes minimal processing or computing power.
iii. It greatly reduces the time needed to generate maximum error free timetable.
iv. It provides an easy means for data entry and revision through an intuitive interface.
v. It almost eliminates paperwork.
vi. It simplifies the timetabling process.
vii. It increases creativity.

CHAPTERTWO

2.1 LITERATURE REVIEW

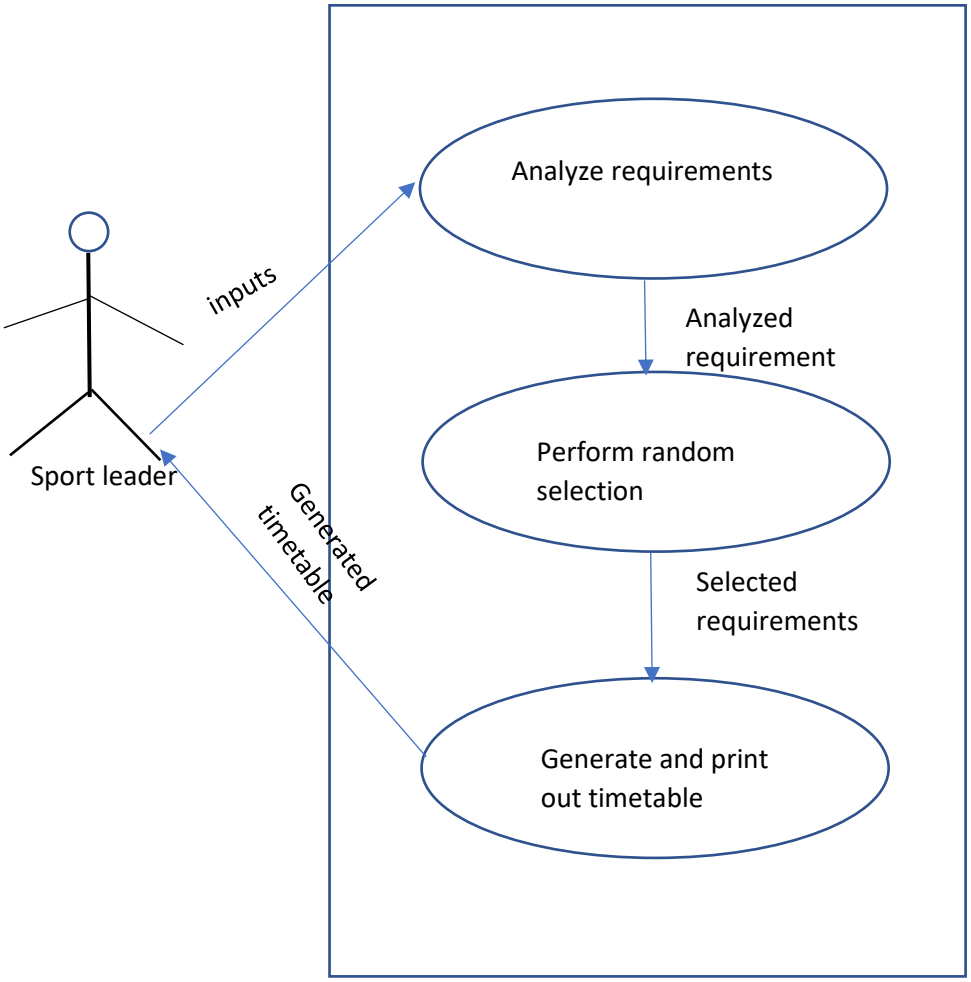
The existing system on sports and games timetabling problem by considering that the teams are arranged by the leaders according to their own wishes which could be chosen freely, Then the problem is being continuously observed using different conditions. hence from previously system it has led us to come up with a new system that will comes with solution of arranging timetable automatically.

2.2 RELATED PROJECTS

Related projects are such as;

i. University course timetable algorithm
ii. Dynamic programming algorithm
iii. Backtracking algorithm.
iv. Automatic timetable generator
v. Development of Timetable Generation

2.3. SYSTEM ARCHITECTURE



CHAPTER THREE

3.0 METHODOLOGY

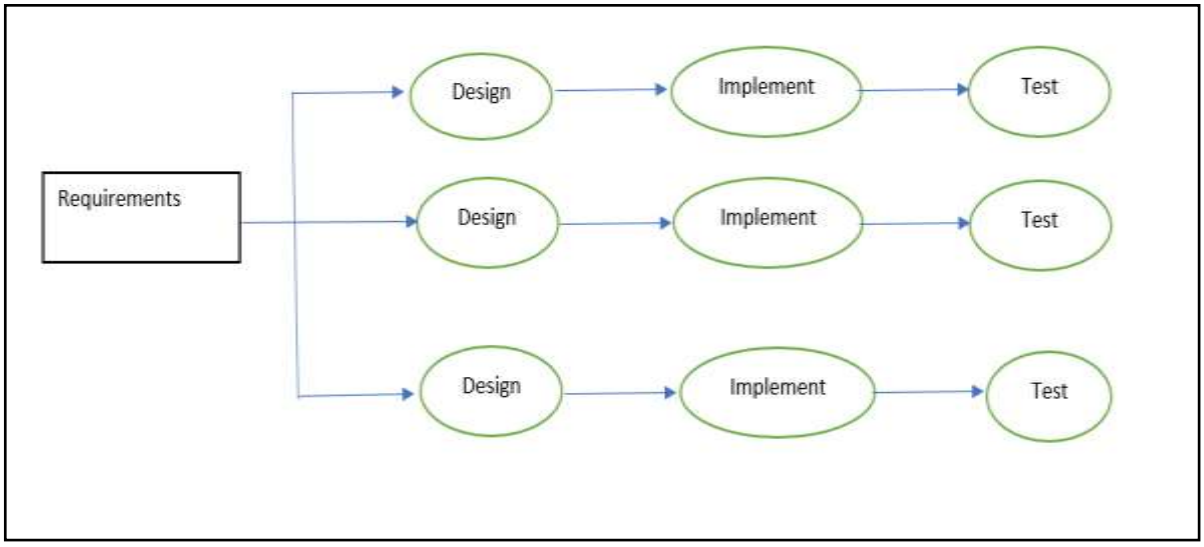
3.1 SYSTEM DEVELOPMENT METHOD

The project purpose is to develop a system which contain an algorithm that will be used to generate timetable automatically. Hence form the project we'll use incremental methodology.

Incremental is software development method where the product is designed, implemented and then tested incrementally (a little more is added each time) until the product is finished. The product is defined as finished when it satisfies all its requirements.

The advantage of using this methodology is as follows;

I. The cost of incremental model is low
II. It supports automatic code generation as a result in minimal code writing
III. It gives emphasis on risk analysis
IV. In these user involvements is only at the beginning
V. Flexibility to change in incremental model is easy



3.2 SPECIFIC OBJECTIVE METHOD/TECHNIQUE/ALGORITHM

- **To gather requirements that will help us to develop the system that generate timetable automatically**. Here we will acquire the requirements from different people through different ways including; questionnaires, observation. Where we will prepare different questions basing on our system title to ask them the issue concerning with our project.

- **To design an algorithm that will based on obtained requirement,** in order to minimize conflicts, at this stage we will design algorithm through different factors that hinder arrangement of timetable such as interference of Test, class sessions, Weather condition due to those factors that hinder a specific team then the team will be terminated from the timetable arranged within a particular day where such algorithm will be inserted within the system. Hence an algorithm will be responsible for randomly timetable scheduling

- **To implement system from the designed algorithm and requirement gathered**, at this stage the inputs are inserted and give an output as desired from the conditions developed in the algorithm.

- **To test our system**, System will be tested to check if system codes and algorithm are achieved successfully as we expect to be. If any errors observed then the corrections will be made.

3.3 SYSTEM REQUIREMENTS

SOFTWARE REQUIREMENTS

I. MySQL
II. Xampp
III. Visual studio code
IV. Window 10

Language

- Php
- Html and CSS
- JavaScript

HARDWARE REQUIREMENTS

- Laptop or pc with i5 processor 2.5GHz, 4GB RAM, 500 SSD

CHAPTER FOUR

4.0 BUDGET AND TIMELINE

4.1. BUDGET.

Our project will have some amount of funding for it to successfully complete approximately 150,000/=. It will be used to enable internet surfing and hardware extensions.

S/NO	LIST OF ITEMS	DESCRIPTION	AMOUNT
1.	Internet access	Internet bundle for tutorial streaming	100,000/=
2.	Stationary	Printing and scanning	25000/=
3.	Additional cost	If the budget allocated does not meet specific requirement	25000/=
	Total		150,000/=

1.2. TIMELINE.

Our project for it to successfully complete with its functional and nonfunctional requirement approximately 16 weeks will be used.

S/NO	DESCRIPTIONS	TIME (days)	PREDECESSOR
1.	Gather requirement	3	-
2.	Conduct meeting	1	1
3.	Analyze requirements	3	2
4.	Set specific objectives	5	3
5.	Obtain hardware and software	3	3
6.	Design system and algorithm	21	4
7.	Implement System	3	5,6
8.	Test system and error checking	10	7

GANTT CHART


Zoom In | Zoom Out
Today | ← Past | Future →
Show critical path | Baselines...
2022
Name
Begin date
End date
Gather requirement 3/21/22 3/23/22
Conduct Meeting 3/24/22 3/24/22
Analyze Requirements 3/25/22 3/29/22
Set specific object 3/30/22 4/5/22
Obtain Hardware and S... 4/6/22 4/6/22
Design System and algo... 4/6/22 5/13/22
Implement System 5/16/22 5/18/22
Test System and Errors c... 5/19/22 6/1/22

CONCLUSION

Automatic Timetable Generator is a web-based application for generating timetable automatically. It is a great difficult task that to manage leagues and allocate the day to conduct a match at a time manually. So proposed system will help to overcome this disadvantage. Thus, we can generate timetable for any number of leagues and multiple teams. This system will help to create dynamic pages so that for implementing such a system we can make use of the different tools are widely applicable and free to use also.

REFERENCES

[1] Leon Bambrick, “Lecture Timetabling Using Genetic Algorithms” Available:http://secretgeek.net/content/bambrilg.pdf

[2] Burke, E.K. and Petrovic, S., 2002. Recent research directions in automated timetabling European Journal of Operational Research, 140(2), pp.266Y280.

[3] Chowdhary A., Kande, P., Dhone, S., Ingle, S., Rushiya, R. And Gawande, D.,2014 Timetable Generation system. International Journal of Computer Science and Mobile Computing, 3(2).

[4] Bhaduri, A., 2009, October. University timetable scheduling using genetic artificial immune network. In Advances in Recent Technologies in Communication and Computing, 2009. ARTCom'09. International Conference on (pp. 289Y292). IEEEe used.