INSTITUTE OF TECHNOLOGY OF CAMBODIA

DEPARTMENT OF INFORMATION TECHNOLOGY AND COMMUNICATION

Algorithm and Automata Joint Project Report

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TABLE CONTENT:

1. INTRODUCTION

- Objective of the project

We aim to accomplish a program which is able to have many functions and options that can design any finite automaton possible.

- Weekly meeting

Occasionally, we meet 2-3 times a week, mostly 2 hours each meet.

- FUNCTIONS AND FEATURE

There are functions:

```
void CountAndCancel();
void Login();
void Loading();
void DfaAndNfa();
void createNFA();
void head_all();
void displayNFA();
void TestStringNFA();
void diplayAll();
void deleteNFA();
void menuTESTSTRING();
void BackAndExitNFA();
void SaveAndInputNFA();
void inputAgain();
void creadeDFA();
```

```
void TestStringDFA();
void diplayAllDFA();
void deleteDFA();
void head_all();
void displayTranDFA();
void SaveAndInputDFA();
void menuTESTSTRINGDFA();
void BackAndExitDFA();
```

- DATA STRUCTURE

  This is data structures of the

```
struct NFA{
        string idNFA;
        string nameNFA;
        string usnameNFA;
        string stateNFA;
        string finalNFA;
        string symbolNFA;
        string newidNFA;
        string newnameNFA;
        string newusnameNFA;
        string newstateNFA;
        string newfinalNFA;
        string newsymbolNFA;
};NFA s;
struct DFA{
          string idDFA;
          string nameDFA;
```

```
        string usnameDFA;
        string stateDFA;
        string tripDFA;
        string finalDFA;
        string symbolDFA;
        string newidDFA;
        string newnameDFA;
        string newusnameDFA;
        string newstateDFA;
        string newfinalDFA;
        string newsymbolDFA;
};DFA df;
Transition **trans;
   string *states, *final, str, input, temp[100], current[100],
**transitionV2, *trap,tmp;
   char  *alf,id[100],name[100], tempV2;
   int nots, nos, nofs, noa, i, j, k, x, y, z, f, flag, cnt,
temp_last, curr_last,couter=0,transition=0,currentV2;
```

2. IMPLEMENTATION

Components Test code

There are four options that have used for test code

- Login account

  First, we login by entering (Name, Password) and it return to next option (DFA & NFA)

- DFA & NFA

In this option it will give us 3 options a choice creates NFA, DFA or Exit.

- Menu DFA

  we take DFA it will go to the DFA menu and give our DFA test a continuation to the DFA end.

- Menu NFA

  we take NFA it will go to the NFA menu and let us enter an example test string.

3. RESULT

- Responsibility of each member

  We each have a responsibility that contribute to this project. We divide our work into small parts.

- Successful features

  We are able to create some options such as create NFA and DFA, test string, save and load data into .txt file.

- unsuccessful features

  We are yet to optimize minimize and convert NFA to DFA. There are still a lot of errors in that area.

4. DIFFICULTY ENCOUNTER

We have quite some problems with gathering for meeting but we are able to contact each other more often.

We also have some difficulty understanding some codes and create some questionable function.