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// Major : Computer Science

// Course : Computer Theory - 601322

// Assignment No. : 2

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// Description : It is a dynamic Finite Automata for any language with any alphabet and then you can test the machine // to accept or reject any given word.

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**import** java.util.Scanner;

**public** **class** Main {

**public** **static** **void** main(String args[]) {

Scanner input = **new** Scanner(System.***in***);// get the input from the user.

System.***out***.print("Enter the alphabet in one string: ");

String AlphabetString = input.next(); // get the alphabet as one string from the user.

Character Alphabet[] = **new** Character[AlphabetString.length()]; // set the size of the array.

**for** (**int** i = 0; i < AlphabetString.length(); i++) {

Alphabet[i] = AlphabetString.charAt(i); // convert the string.

}

System.***out***.print("Enter the states in one string (\*it have to be numeric numbers\*, e.g.'01234'): ");

String StatesString = input.next(); // get the word from the user.

String States[] = **new** String[StatesString.length()]; // get the word from the user.

**for** (**int** i = 0; i < StatesString.length(); i++) {

States[i] = String.*valueOf*(StatesString.charAt(i)); // get the word from the user.

}

System.***out***.print("Enter the start state: ");

String startState = input.next(); // get the word from the user.

System.***out***.print("Enter the final states in one string(it have to be like the states): ");

String FinalStatesString = input.next(); // get the word from the user.

String FinalStates[] = **new** String[FinalStatesString.length()]; // get the word from the user.

**for** (**int** i = 0; i < FinalStatesString.length(); i++) {

FinalStates[i] = String.*valueOf*(FinalStatesString.charAt(i)); // get the word from the user.

}

DFA dfa = **new** DFA(Alphabet, States, startState, FinalStates);

**while** (**true**) {

System.***out***.print("Enter a word: ");

String word = input.next();// get the word from the user.

System.***out***.println(dfa.isItAccepted(word));

}

}

}