

CSC 4890: Introduction to the Theory of Computation

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Fall 2021 Semester

SUBMIT ALL HOMEWORKS Electronically via Moodle

MAIN GOALS for Project #1:

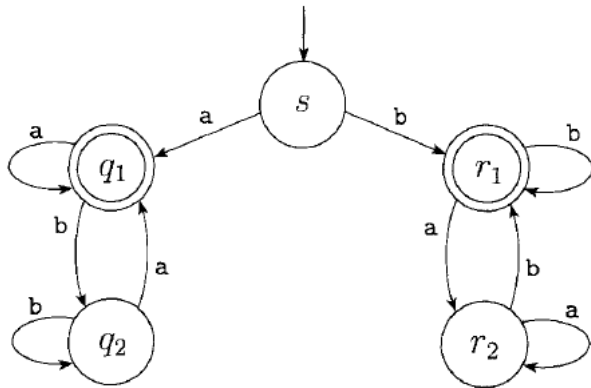
To gain practical experience with some basic concepts regarding DFAs and NFAs.

Today's date: Thursday, September 16, 2021
Due date: Friday, October 1, 2021. By 10:00 PM of that day
Maximum grade points = 100

ANNOUNCEMENT:

I am glad to announce that the TA for this class is Augustine Orgah. His email address is: aorgah1@lsu.edu

Consider the following automaton (DFA machine):



For the above automaton write a computer program (any programming language is OK) that can process strings which use symbols from the corresponding alphabet and applying the above machine.

Show how 5 strings are accepted and how 5 other strings are not accepted. Clearly show how a string is being processed and which states are visited while processing these strings. You choose the strings to demonstrate the above. If you use code that you did not write but found in some kind of library, clearly mark that part of your code or the case will be considered as plagiarism (and thus academic misconduct).

Submit your code, how it can run, and screen shots that demonstrate how your 5 + 5 strings are accepted or rejected by the machine.

Attach this form on front of your solutions with your name filled in

```
/Users/andyje/Downloads/jdk-16.0.2.jdk/Contents/Home/bin/java
```

```
'a' is accepted
```

```
states visited - [s, q1]
```

```
'bb' is accepted
```

```
states visited - [s, r1, r1]
```

```
'babab' is accepted
```

```
states visited - [s, r1, r2, r1, r2, r1]
```

```
'abaaba' is accepted
```

```
states visited - [s, q1, q2, q1, q1, q2, q1]
```

```
'bbbbaaab' is accepted
```

```
states visited - [s, r1, r1, r1, r2, r2, r2, r1]
```

```
' ' is not accepted
```

```
states visited - [s]
```

```
'abb' is not accepted
```

```
states visited - [s, q1, q2, q2]
```

```
'baba' is not accepted
```

```
states visited - [s, r1, r2, r1, r2]
```

```
'abaab' is not accepted
```

```
states visited - [s, q1, q2, q1, q1, q2]
```

```
'baaaaaa' is not accepted
```

```
states visited - [s, r1, r2, r2, r2, r2, r2, r2]
```

```
Process finished with exit code 0
```