Tutorial 2

COMP 3602

1. Consider the following DFA:

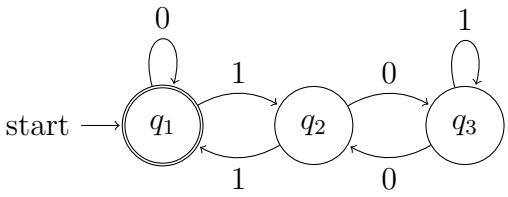

Figure 1: DFA1

Determine which of the following strings,if any are accepted by this DFA

(a) 01

(b) 0

(c) 11

(d) 110

(e) 101

(f) 1001

2. Consider the following strings over $\{0, 1\}$. Draw DFAs that recognize said languages. After drawing them, formally define their DFAs

(a) $\{(01)^n \mid n \text{ is even}\}$

(b) $\{1(0)^n \mid n \text{ is divisible by } 3\}$

3. Consider that Σ is the set of all English lowercase letters. Consider the languages $L_1 = \{\text{good}, \text{bad}\}$ and $L_2 = \{\text{puppy}, \text{bunny}, \text{yohsi}\}$. Enumerate the elements of the following

- $L_1 \cap L_2$
- $L_1 \bigcirc L_2$
- L_1^R