

1. Describe the languages accepted by the following regular expressions

- (a) $(000)^*$
- (b) $(0 + 1^+)$
- (c) ab^*

2. Derive regular expressions that would accept the following languages:

- (a) $\{(ab)^n \mid n \geq 0\}$
- (b) $\{a^n \mid n \text{ is even}\}$
- (c) $\{a^n \mid n \text{ is even}\} \cup \{a^b \mid n \text{ is odd}\}$

3. Convert the following NFA to a regular expression

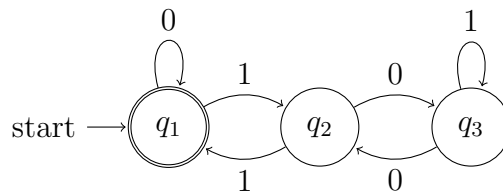


Figure 1: NFA1

4. Convert the following NFA to a regular expression

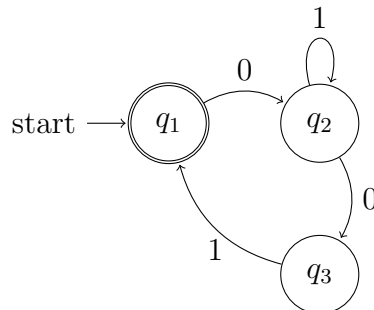


Figure 2: NFA1