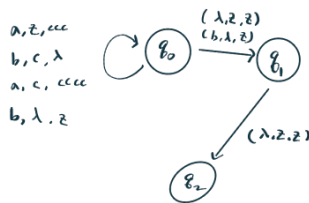# Assignment 14

Automata & Theory of Computation

Student ID: 2019092824   **Name:** 이경훈

1. Answer the following questions.

1) Fill in the blanks to construct an npda $M = (\{q_0, q_1, q_2\}, \{a,b\}, \{c,z\}, \delta, q_0, z, \{q_2\})$ that accepts the language $L = \{a^n b^{3n} : n \geq 0\}$.

$\delta(q_0, \lambda, z) = \{(q_1, z)\},$

$\delta(q_1, \lambda, z) = \{(q_2, z)\},$

$\delta(q_0, a, z) = \{(q_0, cccz)\}$

$\delta(q_0, b, c) = \{(q_0, \lambda)\}$

$\delta(q_0, a, c) = \{(q_0, cccc)\}$

$\delta(q_0, b, z) = \{(q_1, zz)\}$

2) Fill in the blanks to show the npda above accepts the string *abbb*.

$(q_0, abbb, z) \vdash (q_0, bbb, cccz) \vdash (q_0, bb, ccz) \vdash$

$(q_0, b, cz) \vdash (q_0, \lambda, z) \vdash (q_2, \lambda, z)$