

## CS 305 Lecture - 11

### Problem set

1. Construct NPDA's that accept the following regular languages:
  - a)  $L_1 = L(aa^*b)$
  - b)  $L_2 = L(aab^*aba^*)$
2. Construct NPDA's that accept the following languages on  $\Sigma = \{a, b, c\}$ .
  - a)  $L = \{a^n b^{2n} : n \geq 0\}$
  - b)  $L = \{w c w^R : w \in \{a, b\}^*\}$
  - c)  $L = \{a^n b^m c^{m+n} : n \geq 0, m \geq 0\}$
  - d)  $L = \{a^n b^{m+n} c^m : n \geq 0, m \geq 1\}$
  - e)  $L = \{a^3 b^n c^n : n \geq 0\}$
  - f)  $L = \{w : n_a(w) + n_b(w) = n_c(w)\}$