

# Grammar

$$J \rightarrow H \mid A$$

$$H \rightarrow hP_H \mid htR_H \mid hfF_A \mid hoI_A$$

$$A \rightarrow aP_A \mid atR_A \mid afF_H \mid aoI_H$$

$$P_H \rightarrow xH \mid sB_H \mid yA$$

$$P_A \rightarrow xA \mid sB_A \mid yH$$

$$I_H \rightarrow iH \mid iA \mid I_A$$

$$I_A \rightarrow iA \mid iH \mid I_H$$

$$B_H \rightarrow mI_A \mid nrH \mid nrA \mid noI_A \mid nF_H \mid mF_H \mid m \mid n$$

$$B_A \rightarrow mI_H \mid nrH \mid nrA \mid noI_H \mid nF_A \mid mF_A \mid m \mid n$$

$$R_H \rightarrow bH \mid gI_H$$

$$R_A \rightarrow bA \mid gI_A$$

$$F_H \rightarrow I_H \mid F_H \mid sB_H$$

$$F_A \rightarrow I_A \mid F_A \mid sB_A$$