Quiz-3

Question-1

- Which class of grammars is usually used to describe the lexical structure of a programming language? [1 pt]

- Which class of grammars is usually used to describe the syntactical structure of a programming language [1pt]

- Why are two distinct classes used in practice? Provide two reasons. [2pt]
Question-2  For the below grammar, write down the First, Follow and Predict sets. [4pt]

\[
\begin{align*}
&< \text{program} > \rightarrow \textbf{begin} < \text{stmt_list} > \textbf{end} \\
&< \text{stmt_list} > \rightarrow < \text{statement} >< \text{statement_tail} > \\
&< \text{statement_tail} > \rightarrow < \text{stmt_list} > \\
&< \text{statement_tail} > \rightarrow \lambda \\
&< \text{statement} > \rightarrow \text{read()} \\
&< \text{statement} > \rightarrow \text{write()} 
\end{align*}
\]
Question-3  Is the following grammar a LL(1) grammar? Briefly explain how you arrived at your conclusion. [2pt]

\[
\begin{align*}
zzz &\rightarrow xxx \\
xxx &\rightarrow aaa yyy \\
yyy &\rightarrow \epsilon \\
yyy &\rightarrow bbb xxx \\
aaa &\rightarrow 1 | 2 | 3 | 4 | 5 \\
bbb &\rightarrow \& | \% | \$ | \# | @
\end{align*}
\]