CSC 360 Example Context-Free Grammar

The alphabet of our miniature language is the set:
$\{a, the, John, Jill, hamburger, car, drives, eats, slowly, frequently, big, juicy, brown\}$.

$\langle sentence \rangle$	$\rightarrow \langle noun - phrase \rangle \langle verb - phrase \rangle$
$\langle sentence \rangle$	$\rightarrow \langle noun - phrase \rangle \langle verb \rangle \langle direct - object - phrase \rangle$
$\langle noun - phrase \rangle$	$\rightarrow \langle proper - noun \rangle$
	$\rightarrow \langle determiner \rangle \langle common - noun \rangle$
$\langle proper - noun \rangle$	$\rightarrow$ John
	$\rightarrow$ Jill
$\langle common - noun \rangle$	$\rightarrow$ car
	$\rightarrow$ hamburger
$\langle determiner \rangle$	$\rightarrow$ a
	$\rightarrow$ the
$\langle verb - phrase \rangle$	$\rightarrow \langle verb \rangle \langle adverb \rangle$
	$\rightarrow \langle verb \rangle$
$\langle verb \rangle$	$\rightarrow$ drives
	$\rightarrow$ eats
$\langle adverb \rangle$	$\rightarrow$ slowly
	$\rightarrow$ frequently
$\langle adjective - list \rangle$	$\rightarrow \langle adjective \rangle \langle adjective - list \rangle$
	$\rightarrow \lambda$
$\langle adjective \rangle$	$\rightarrow$ big
	$\rightarrow$ juicy
	$\rightarrow$ brown
$\langle direct - object - phrase \rangle$	$\rightarrow \langle adjective - list \rangle \langle proper - noun \rangle$
	$\rightarrow \langle determiner \rangle \langle adjective - list \rangle \langle common - noun \rangle$

Following sentences (strings) can be generated by this grammar:

John eats a hamburger
John eats a big hamburger
John eats a big juicy hamburger
John eats a big brown juicy hamburger
John eats a big big brown juicy hamburger

And so is the sentence:
the car eats slowly