

Visualization Derivations from CFG

$A \rightarrow 0A1$

$A \rightarrow B$

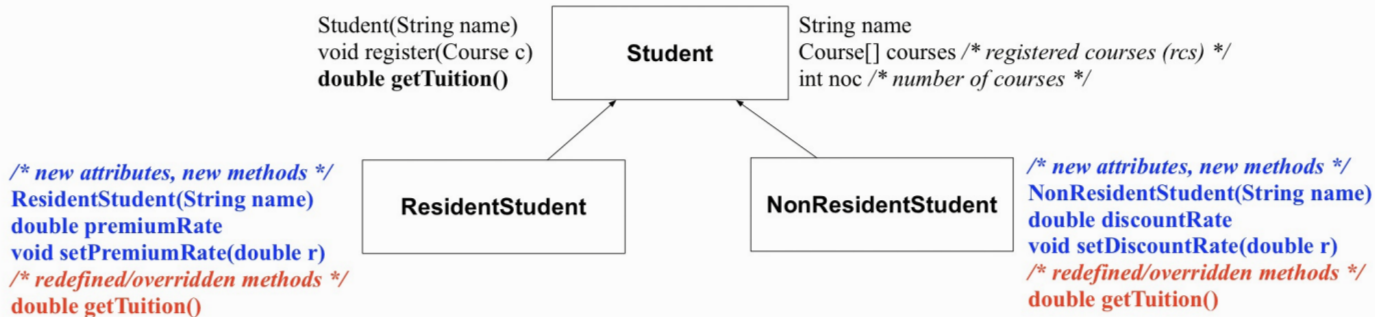
$B \rightarrow \#$

- Shortest Derivation?

- 000#111?

- 010#101?

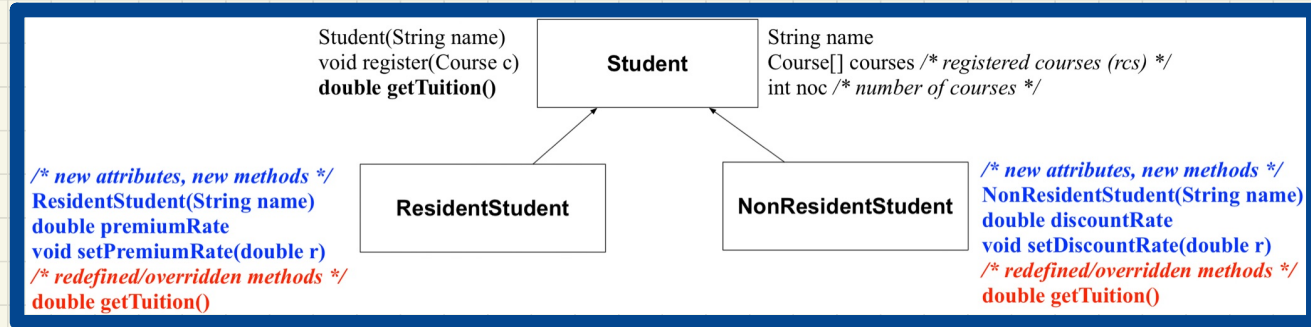
Student Classes (with inheritance): Expectations



```
Student s = new Student("Stella");
ResidentStudent rs = new ResidentStudent("Rachael");
NonResidentStudent nrs = new NonResidentStudent("Nancy");
```

[illegible]

Intuition: Polymorphism



```
1 Student s = new Student("Stella");
2 ResidentStudent rs = new ResidentStudent("Rachael");
3 rs.setPremiumRate(1.25);
4 s = rs; /* Is this valid? */
5 rs = s; /* Is this valid? */
```

Motivation Problem: Recursive Systems

