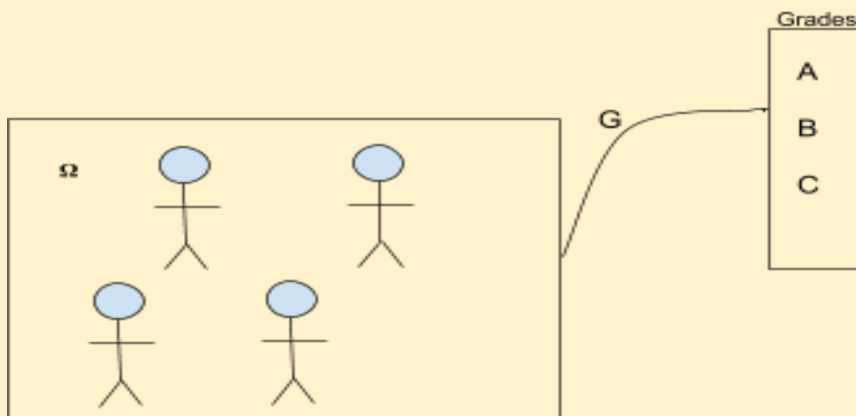


### Random Variable Intuition

What is a Random Variable (intuition)

1. Suppose a student gets one of 3 possible grades in a course: A, B, C
2. One way of interpreting this is that there are 3 possible events here.
  - a. For eg, to find  $P(A)$  we take  $\frac{\text{No. of students with A grade}}{\text{Total No. of students}}$
3. Another way of looking at this is that there is a random variable  $G$  which maps each student to one of the 3 possible values



4. Here, the random variable  $G$  is treated more like a function that serves to map a student to a grade
5. And we are interested in  $P(G = g)$  where  $g \in \{A, B, C\}$
6. The benefit of this is that we can use multiple random variables on the same set to map to different outcomes

