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Input

1. Number of companies
2. Number of vaccination zones
3. Number of students
4. Probability of success for each company

Company

- Each company takes w seconds (2-5) to prepare r batches (1-5) of p vaccines (10-20).
- After preparing vaccines, the company enters the delivery phase and resumes production only after usage of all produced vaccines.
- In the delivery phase company delivers the vaccines to vaccination zones and waits till the use of all produced vaccines. After which, the company resumes production.
- **Functions**
    a. company
    b. delivery

Zone

- All zones are initially empty. They do not have students and vaccines. It continuously iterates to all the companies to acquire a batch of vaccines. After which, slots creation takes place by invoking create_slots.
- The number of slots created is a random value in 1 and min (8 ,r ,w). Where r is remaining vaccines in the zone and w is the number of students waiting for a slot. After filling slots (in wait_for_slots) vaccination of students takes place. Creation of slots and vaccination repeats until the vaccines are empty.
- Vaccination zone goes to acquire vaccines and repeats the whole process when vaccines are empty.
- **Functions**
    a. Zone
    b. acquire_vaccines
    c. create_slots
    d. vaccinate_students

Student

- A student will be available for vaccination after a random interval of time. After arriving he searches for a slot by iterating all the vaccination zones. After acquiring a slot at a zone, student waits till he gets vaccinated (in vaccinate_students) and goes to antibody checkup.
- In antibody checkup, if the student gets positive, he/she exits. Else if he/she tests negative, he/she leaves if it is his/her 3rd round else goes again for vaccination.
- **Functions**
    a. student
    b. wait_for_slot
    c. antibody_checkup