

# Back to college

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## What I Understand

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company threads prepares a random no of vaccines and zone threads checks for the companies which have the vaccine left. student's thread waits for students coming to zone and keeps checking for the free slots. If they have any slots free, the student gets vaccinated and checks for the virus (positive or negative) then exits.

- In main function it takes the inputs of no of companies, zones and students. It creates the structs and waits for the students to get vaccinated then it joins and destroys.

## Functions used

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```
void *company_thread(void *inp);  
void *zone_thread(void *inp);  
void *student_thread(void *inp);  
void vaccine_ready(company *company);  
void ready_to_zone(zone *zone);  
void wait_for_slot(int idx);  
void student_in_slot(int i, int idx);  
void check_virus()
```

```
void *company_thread(void *inp);
```

sleeps for some time and prepares vaccines randomly and calls vaccine ready function.

```
void vaccine_ready(company *company);
```

checks for the vaccines if it gets 0 returns to the company function.

```
void *zone_thread(void *inp);
```

loop through the company array checking for if any vaccines are available in company. If we found any, decrease the vaccine in that company then continue for checking vaccines then

calls for ready to zone function.

```
void ready_to_zone(zone *zone);
```

checks for the students to get vaccinated and Is the slots full or not else conditional waits.

```
void *student_thread(void *inp);
```

sleeps until the students arrives for the zone to get vaccinated.If comes calls for wait\_for\_slot function then student\_in\_slot function.

void \*wait\_for\_slot(void \*count) checks whenever a new student arrives. The students waits till he/she will get vaccinated.

```
void student_in_slot(int i,int idx); and  
void check_virus()
```

if mutex takes a student increases the students no then unlocks the mutex and calls the checkvirus function that function checks if positive or negative if it is positive it calls for student\_in\_slot function else the student has tested negative so terminates.