

Late Night Pizza

Algorithm(using semaphores):

- Each student thread executes 2 things: pick a piece of pizza and study while eating.
- If the number of slices is 0 then it is giving an order in the pizza hut for more pizzas. Else students start studying while eating and we decrease the slice count by 1.
- Another function shows the working of a pizza hut. First they assign the number of slices in one pizza to S. They will wait until the order is placed and then they make_pizza .
- First we acquire the mutex and make the number of slices in the pizza equal to total slices and finally we release mutex .

Implementation:

```
semaphore_t pizza;  
semaphore_t deliver;  
int slices = 0;  
mutex_t mutex;  
  
student {  
    while(study){  
        wait(pizza);
```

```

        acquire(mutex);
        slices--;
        if(slices==0){
            signal(deliver);
        }
        release(mutex);
        study();
    }
}

pizza_hut {
    S= total_slices;
    while (open){
        wait(deliver);
        make_pizza();
        acquire(mutex);
        slices = S;
        release (mutex);
        for(i;i<S;i++){
            signal(pizza);
        }
    }
}

```