Code:

```c
#include<stdio.h>
#include<stdlib.h>
#include<pthread.h>
#include<semaphore.h>
#include<unistd.h>
pthread_mutex_t mutex;
int numpeople = 0;
int totalweight = 0;
sem_t S;
void * people(void * n)
{
        int p=*(int *)n;

    sem_wait(&S);
    if(totalweight+p>350){
        printf("\nPerson with weight %d can't enter, exceeding
weight\n",p);
        sem_wait(&S);

    }
    pthread_mutex_lock(&mutex);
    totalweight+=p;
    pthread_mutex_unlock(&mutex);
    printf("\nPerson with weight %d is in the lift\n",p);
    sleep(5);
    printf("\nPerson with weight %d left the lift\n ",p);
    pthread_mutex_lock(&mutex);
    totalweight-=p;
    pthread_mutex_unlock(&mutex);
    sem_post(&S);




}

int main(){
    int num;
    printf("Enter the number of persons ");
    scanf("%d",&num);
    int a[num]; //weights
```

```c
    printf("Enter the weights of the people ");
    for(int i=0;i<num;i++)
    scanf("%d",&a[i]);
    pthread_t peo[num];
    pthread_mutex_init(&mutex,NULL);
    sem_init(&S,0,5);
    for(int i=0;i<num;i++){
        pthread_create(&peo[i],NULL,(void *)people, (void *)&a[i]);
    }
    for(int i=0;i<7;i++){
        pthread_join(peo[i],NULL);
    }
    pthread_mutex_destroy(&mutex);
    sem_destroy(&S);

    return 0;

}
```

Output:

```
shubhangi@Shubhi:/mnt/e/VIT/4thsem/OS/lab/linuxpractice/20bce1161/lab12_CT$ ./elev_output
Enter the number of persons 7
Enter the weights of the people 60 100 90 85 78 92 55

Person with weight 60 is in the lift

Person with weight 100 is in the lift

Person with weight 90 is in the lift

Person with weight 85 is in the lift
Person with weight 78 can't enter, exceeding
Person with weight 100 left the lift

Person with weight 90 left the lift

Person with weight 60 left the lift

Person with weight 92 is in the lift

Person with weight 85 left the lift

Person with weight 78 is in the lift

Person with weight 55 is in the lift

Person with weight 92 left the lift

Person with weight 78 left the lift

Person with weight 55 left the lift
```

```
shubhangi@Shubhi:/mnt/e/VIT/4thsem/OS/lab/linuxpractice/20bce1161/lab12_CT$ ./elev_output
Enter the number of persons 6
Enter the weights of the people 90 89 50 75 100 45

Person with weight 90 is in the lift

Person with weight 89 is in the lift

Person with weight 50 is in the lift

Person with weight 75 is in the lift

Person with weight 100 can't enter, exceeding weight

Person with weight 89 left the lift

Person with weight 90 left the lift

Person with weight 100 is in the lift

Person with weight 45 is in the lift

Person with weight 50 left the lift

Person with weight 75 left the lift

Person with weight 100 left the lift

Person with weight 45 left the lift
```