

RIDER

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-> When rider arrives it calls book_cab() function.

-> The rider provide cab type , max wait time , ride time as argument to book_cab() function.

-> In book_cab function we check if any cab of suitable type is available

```
while(z!=1)
{
pthread_mutex_lock(&mutex);
    for(i=0;i<n;i++)
    { if(in[i].rider==0)
        {in[i].rider=2;
            z=1;
            break;
        }
    }

    if(z==1)
        printf("thread id = %d is with %d\n", ind,i+1);
    pthread_mutex_unlock(&mutex);
}
```

-> Checking for cab continues until suitable cab is available , if cab is not available until w_time the rider terminates and exits the program.

->if cab is available before w_time , than the ride is started.

->After completing the ride the cab is returned to its previous state and the book_cab() function returns.

->After returning the rider enters make_payment() function.

-> The rider tells the server that his ride is completed and waits until the payment is completed by server

```
pthread_mutex_lock(&mutex2);
    lit[ind-1][0]=1;
    pthread_mutex_unlock(&mutex2);
    while(lit[ind-1][1]==0);
```

->After payment is completed it returns from function make_payment() and the rider thread terminates.

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SERVER

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-> When a server thread is created it starts checking for rider who have completed their ride and their payment is not initiated.

```
while(z!=1)
{
pthread_mutex_lock(&mutex2);
    for(i=0;i<m;i++)
    { if(lit[i][0]==1&&count[i]==0)
        {      z=1;
              count[i]=1;
              break;
        }
    }
    if(z==1)
        printf("payment initiated for %d rider in %d server\n", i+1,ind);
    pthread_mutex_unlock(&mutex2);
}
```

-> When the server finds a rider it initiates the payment.

-> When the payment is completed it changes the status of rider's payment by this the rider knows that his payment is now completed.

```
pthread_mutex_lock(&mutex2);
printf("payment completed for %d rider in %d server\n", i+1,ind);
    lit[i][1]=1;
    pthread_mutex_unlock(&mutex2);
```

->After payment it starts searching for rider again.

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