# At the IIT Driving range

This problem deals with a simulation of a golfing range. The program for the simulation takes three arguments the no. of golfers given by –g or –golfer, no. of balls in stash –s or—stash and the number of balls in bucket –b or ---b.

The algorithm is as follows:

1. Intialize semaphores. Stash\_sem=Semaphore(no. of balls in stash/No. of balls in bucket) Mutex=Semaphore(1)
2. Each golfer runs this code:

while (True):

j=(j+1)%bucket

global balls\_on\_field

mutex.acquire()

balls\_on\_field+=1

mutex.release()

#print('balls on field is',balls\_on\_field)

#Simulate swinging with random sleep

Stash\_sem.wait()

1. Run the cart thread when the golfer thread is blocked

while(True)

stash+=balls\_on\_field

Stash\_sem.signal()

The sample run is as follows,

SDIVANJI-M-901B:CS450 sdivanji$ python golfer.py -h

usage: golfer.py [-h] [--golfer GOLFER] [--stash STASH] [--bucket BUCKET]

Concurrent golfer simulator

optional arguments:

-h, --help show this help message and exit

--golfer GOLFER, -g GOLFER

number of golfers

--stash STASH, -s STASH

no of balls in stash

--bucket BUCKET, -b BUCKET

no. of balls per bucket

SDIVANJI-M-901B:CS450 sdivanji$ python golfer.py -g 3 -s 20 -b 5

No. of golfers 3

No. of balls in stash 20

No. of balls per bucket 5

Golfer 0 calling for bucket

Golfer 0 got 5 balls :Stash is 15

Golfer 0 hit 1 ball

Golfer 0 hit 2 ball

Golfer 1 calling for bucket

Golfer 1 got 5 balls :Stash is 10

Golfer 1 hit 1 ball

Golfer 2 calling for bucket

Golfer 2 got 5 balls :Stash is 5

Golfer 2 hit 1 ball

Golfer 1 hit 0 ball

Golfer 0 hit 3 ball

Golfer 2 hit 3 ball

Golfer 2Golfer 1 hit 3 ball

hit Golfer 1 hit 4Golfer 4 ball

ball

0Golfer Golfer 2hit 1 4calling for bucket calling for bucket

ball

Golfer 2Golfer 0 calling for bucket

got 5 balls :Stash is 0

Golfer 2 hit 0 ball

######################################

stash= 0 gathering balls on field

done stash= 13 return

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Golfer 0 hit 0 ball

Golfer 1 hit 0 ball

Golfer 2 hit 1 ball

Golfer 0 hit 1 ball

Golfer 1 hit 1 ball

Golfer 0 hit 2 ball

Golfer 0 hit 3 ball

Golfer 0 hit 4 ball

Golfer 0 calling for bucket

Golfer 0 got 5 balls :Stash is 8

Golfer 0 hit 0 ball

Golfer 2 hit 3 ball

Golfer 2 hit 4 ball

Golfer 2 calling for bucket

Golfer 2 got 5 balls :Stash is 3

Golfer 2 hit 0 ball

######################################

stash= 3 gathering balls on field

done stash= 17 return

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…. and so on