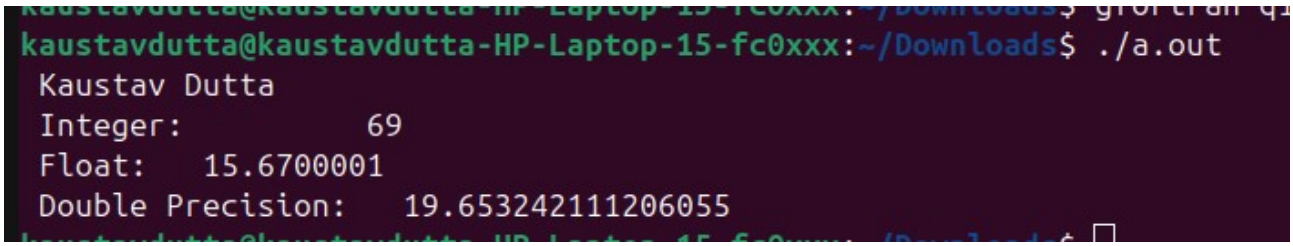
Fortran Assignment

Q0)



Q1a)

q1b)

0.1284

0.7198

0.8095

0.0920

0.7095

0.9820

0.8301

0.4408

0.5718

0.2607

Fortran Assignment

q1c,d)

0.130768120

0.347710967

0.611653209

0.212184787

9.25900340E-02

0.670266688

0.875639260

0.812960207

0.182952404

0.182494223

Changing seed and generating 10 new random numbers

q1e)

```
kaustavdutta@kaustavdutta-HP-Laptop-15-fc0xxx:~/Desktop/fortran$ ./a.out
 Average=  0.453657717
```

q1f)

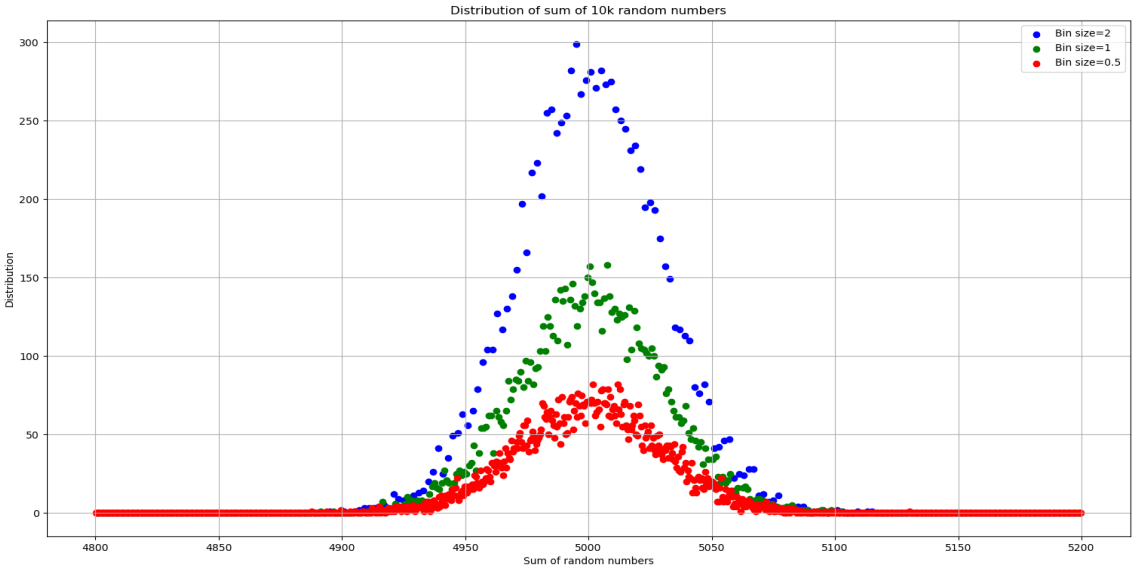
```
kaustavdutta@kaustavdutta-HP-Laptop-15-fc0xxx:~/Desktop/fortran$ ./a.out
 Average of         100 random numbers:   -4.14898507E-02
 Average of       10000 random numbers:    7.30447378E-03
 Average of     1000000 random numbers:   -1.29645676E-04
```

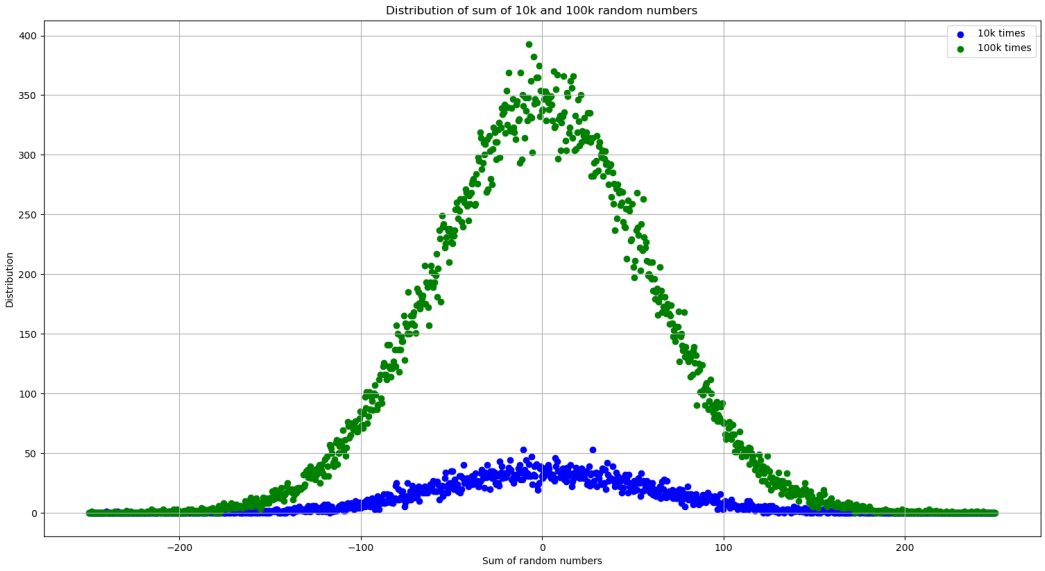
q1g)

```
kaustavdutta@kaustavdutta-HP-Laptop-15-fc0xxx:~/Desktop/fortran$ ./a.out
 Size:         100
 Average:  -3.1465125134042149E-002
 Absolute difference from 0.50:  0.53146512513404209
 Size:       10000
 Average:  -8.1812601483465773E-003
 Absolute difference from 0.50:  0.50818126014834653
 Size:     1000000
 Average:   1.0967914642643862E-004
 Absolute difference from 0.50:  0.49989032085357354
```

q1h)

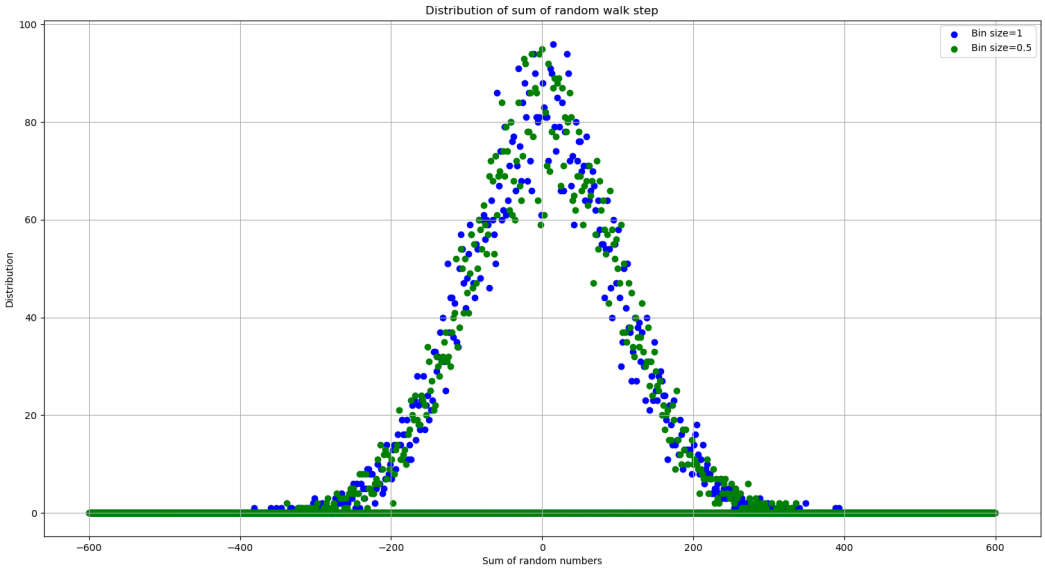
Fortran Assignment



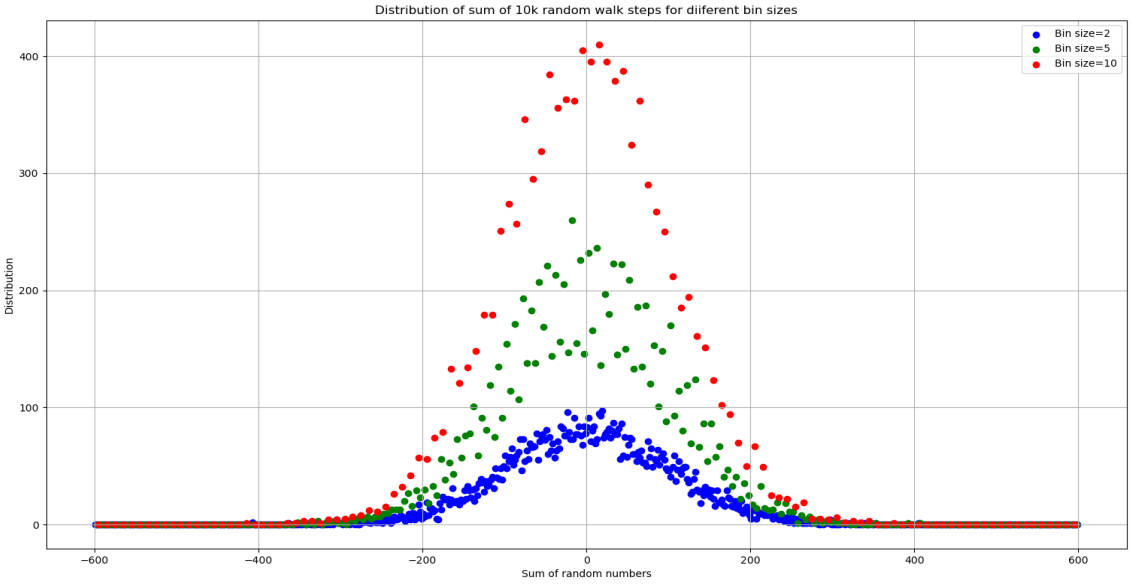


q1i)

Fortran Assignment

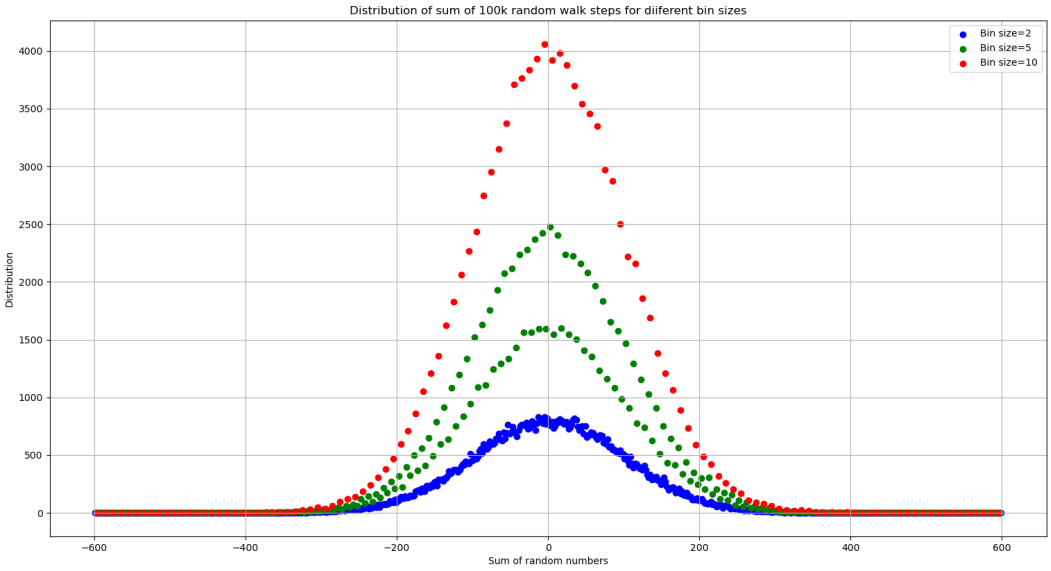


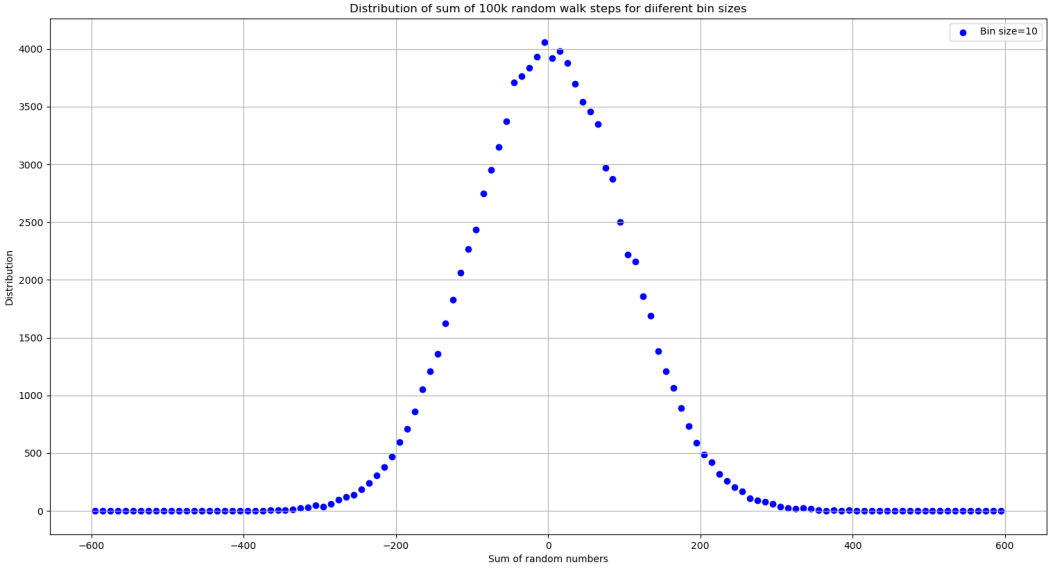
q1j)



q1k)

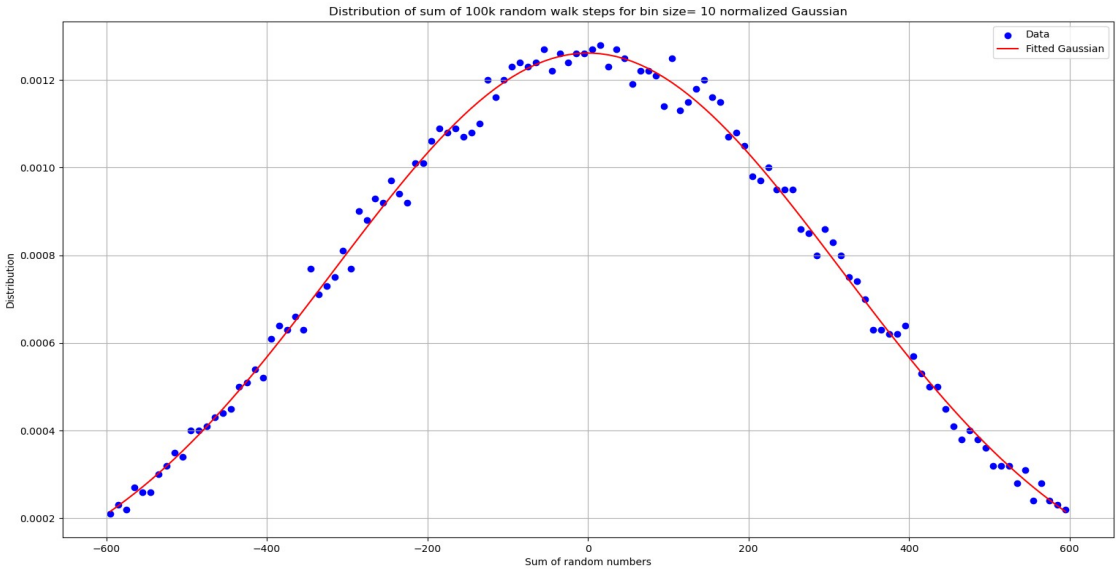
Fortran Assignment



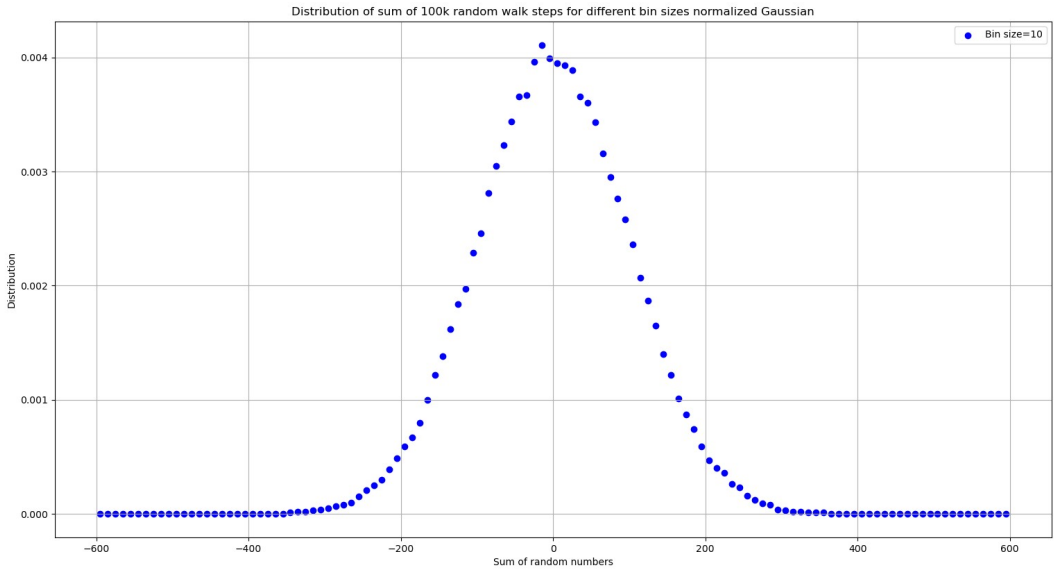


Fortran Assignment

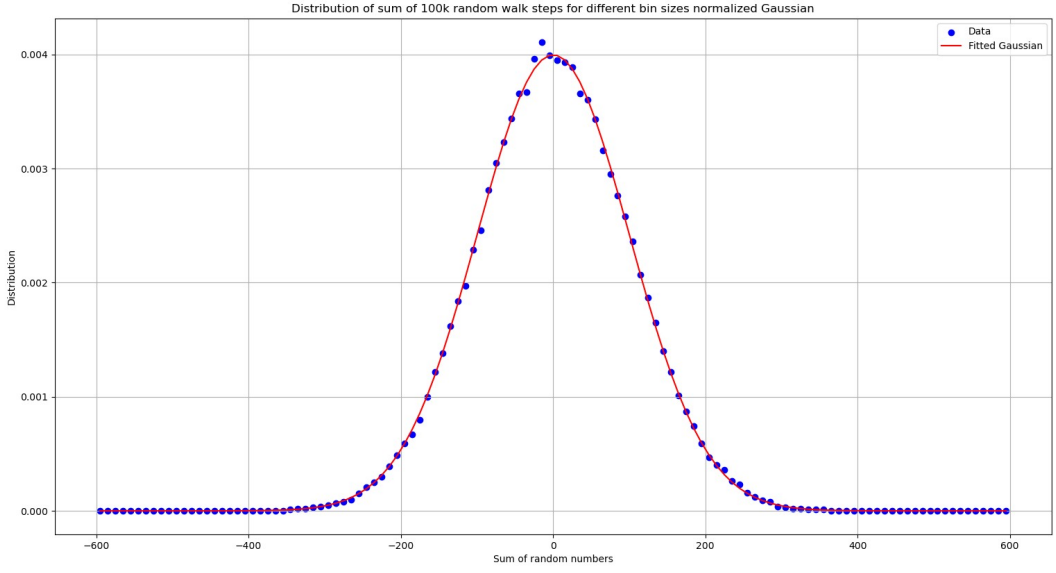
q1l)



Fortran Assignment



q1m)



Fitting of 1k question

```
kaustavdutta@kaustavdutta-HP-Laptop-15-fc0xxx:~/Desktop/fortran$ python3 q1k_norm_fit.py
Area under the curve: 0.9998666666666667
Fitted parameters: Amplitude = 0.003996108401798943,  Std Dev = 99.81594146556161
```