Assignment -4

Driver: I have used the Pseudo-random driver where it generates the random number by using the sp_rand() function. The driver file starts with the initialising the seed and passing it to the sp_seed(). Here input will be coming from the input file named input.txt. after that it will go inside the loop and add this seed to every faction that could be available and apples the seed inside it. Loops has been fixed to the 99999 times. At the end of the loop, it change the value to the next value by using the sp_rand() function. Sp_seed() is used in the starting point to trigger the number from the input file.

BUG-1

The first bug I have found while applying the 0 value as a seed. Which was causing the floating error.

```
bash-4.2$ gcc -c spalloc-fixed.c -std=gnu99
bash-4.2$ cc -o driver driver.c spalloc-fixed.o -std=gnu99
bash-4.2$ ./driver
0
Floating point exception (core dumped)
```

To fix the error I have apply the condition to the spalloc-fixed inside the bug-1 folder. The solution for that to apply the condition inside the sp_calloc where input will be the 0 it will retuen null.

Bug-2

When we apply the sp_calloc(seed,seed) function inside the it breaks the code and give the segment fault error. Which could not be found with flag -DSP_FAKE.

```
678206081
1168294900
2030173043
1147749445
3676448653
1374167170
2446692419
3000781731
1211595764
92163
Segmentation fault (core dumped)
```

Even it always tops at the same value 92163.
To justify I have tried applying every single possible value that could applies and every time it stops at the same place.

Bug-3

By applying multiple function to the sp_realloc() gave the error aborted error, where it crashes the sa_free function. Here by giving the multiple number of the input diving the function the value is not getting to expect it thus it crashes,

```
349748663
4050682124
881828622
2466234312
748860087
2888153618
driver: spalloc-fixed.c:180: sa_free: Assertion `ca < sa->sa_avail' failed.
Aborted (core dumped)
```