Goal:
Investigate the dependence of the electron velocity on the electric field dependence in zigzag carbon nanotubes using Monte Carlo method. All of the following sections will be discussed in class. Furthermore mini-assignment will be made to help with different sections of the project.

1. The random generator below provides random number uniformly distributed between 0 and 1. You may use it or use built random number generators.
2. Develop initial distribution of electron energy and momentum
3. Identify scattering processes and compute scattering rates
4. Develop a code using any programming language (Matlab, c, fortran, Java)
5. Use time average to compute velocity at each field

Random # generator

```c
C*************************************************************************
FUNCTION RANNUM(I)
IMPLICIT REAL*8(A-H,O-Z)
include 'common_n.inc'
C*** FROM CLAMPS AT NRCC - FROM KALOS
10  QD2=QA2*QB2
    QE2=DINT(QD2/QBASE)
    QC2=QD2-QBASE*QE2
    QB1=DMOD(QE2+DMOD(QA1*QB2,QBASE)+DMOD(QA2*QB1,QBASE),QBASE)
    QB2=QC2
    RANNUM=QB1/QBASE
    IF(RANNUM.EQ.0.0D0)GO TO 10
    RETURN
END
```