FIDA SALIM
1811065
Int. MSc, SPS
NISER

RANDOM WALK ON 2 DIMENSIONS

Using python simulations, the random walk models were generated for different steps, N = 250,500,750,1000,1250 with fixed step size = 1. Random values generated were substituted as the angle of direction of each step-size. A N step random walk was conducted 100 times to analyse $R_{average}$, R_{rms} , $X_{average}$ and $Y_{average}$. The $X_{average}$ and $Y_{average}$ were found close to 0. According to the mathematical model of random walk, the R_{rms} is equal to $\sqrt{N}$. The graph plotted with R_{rms} vs $\sqrt{N}$ provided linear relation with slight deviation. If the walks were conducted for large times (like 10000), the data could have agreed with mathematical result. If small deviation is neglected, the simulation fairly agrees with mathematical model.