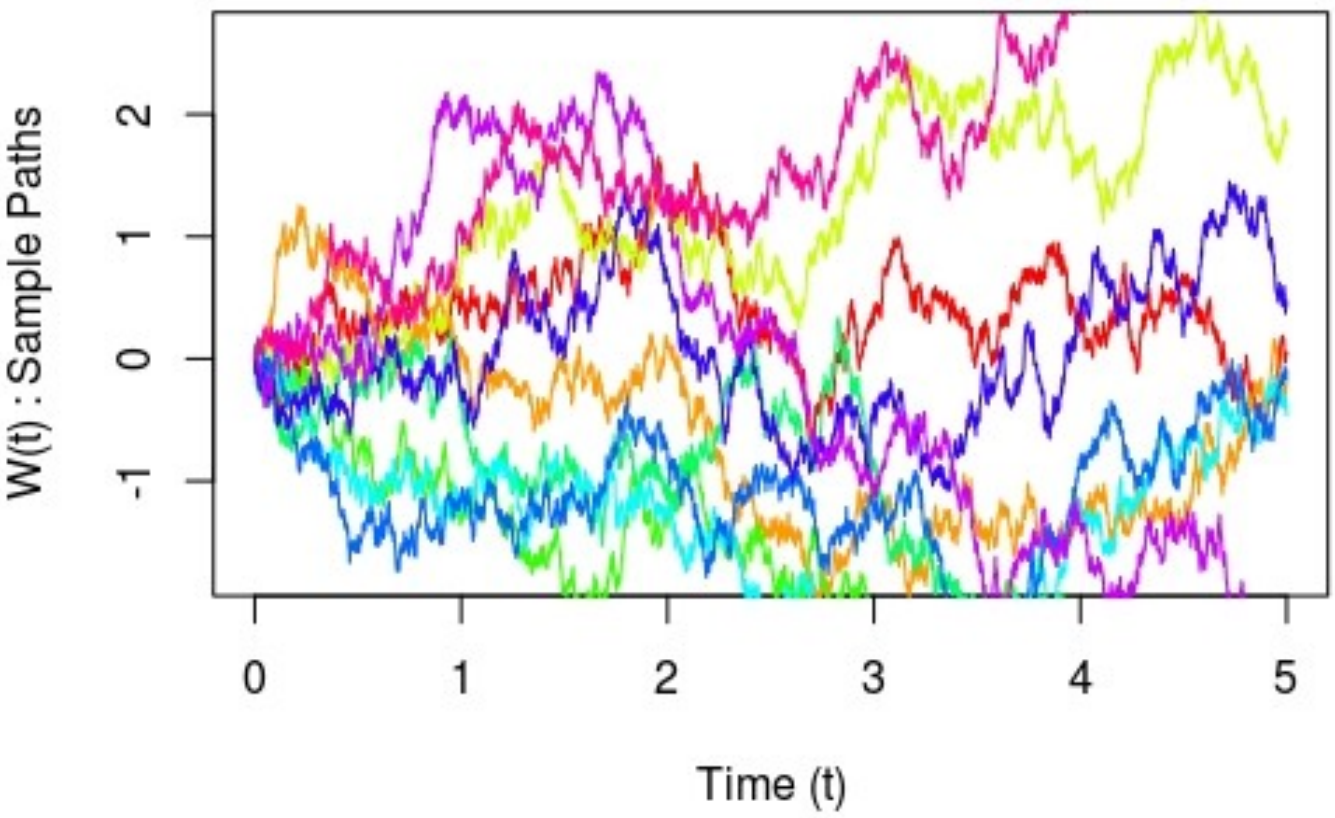
LAB 09

◆ Question 1

10 sample paths for the standard Brownian Motion in the time interval [0,5] were generated and following values were obtained in one of the sample run of the program:

Exp[W(2)] = 0.1632837

Exp[W(5)] = -0.3610785

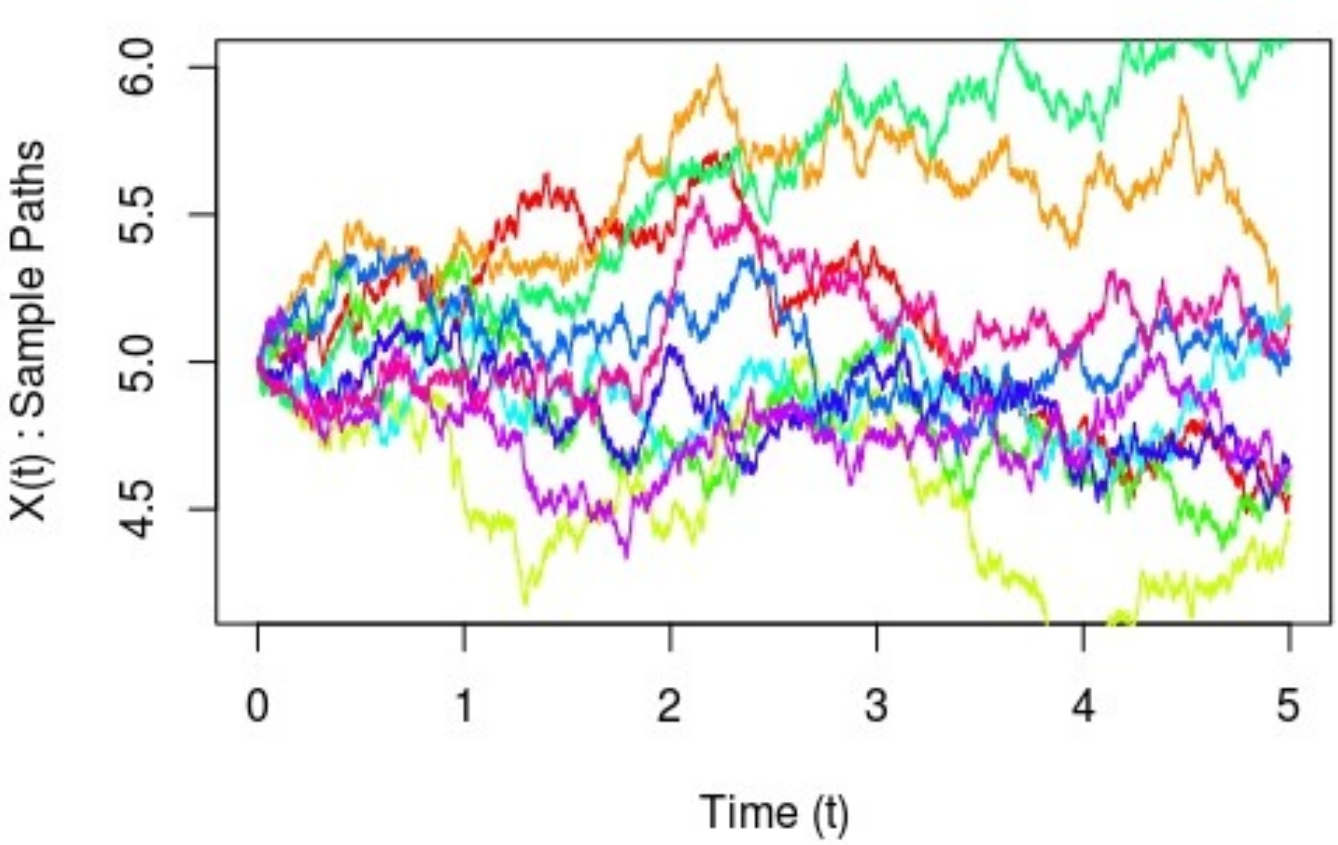


Generated Sample paths of standard Brownian Motion

◆ Question 2

10 sample paths for the Brownian motion X~(BM(μ,σ^2)) in the time interval [0,5] were generated using X(0)=5, μ=0.06 and σ=0.3 and following values were obtained in one of the sample run of the program:

Exp[X(2)] = 5.064602
Exp[X(5)] = 4.94676

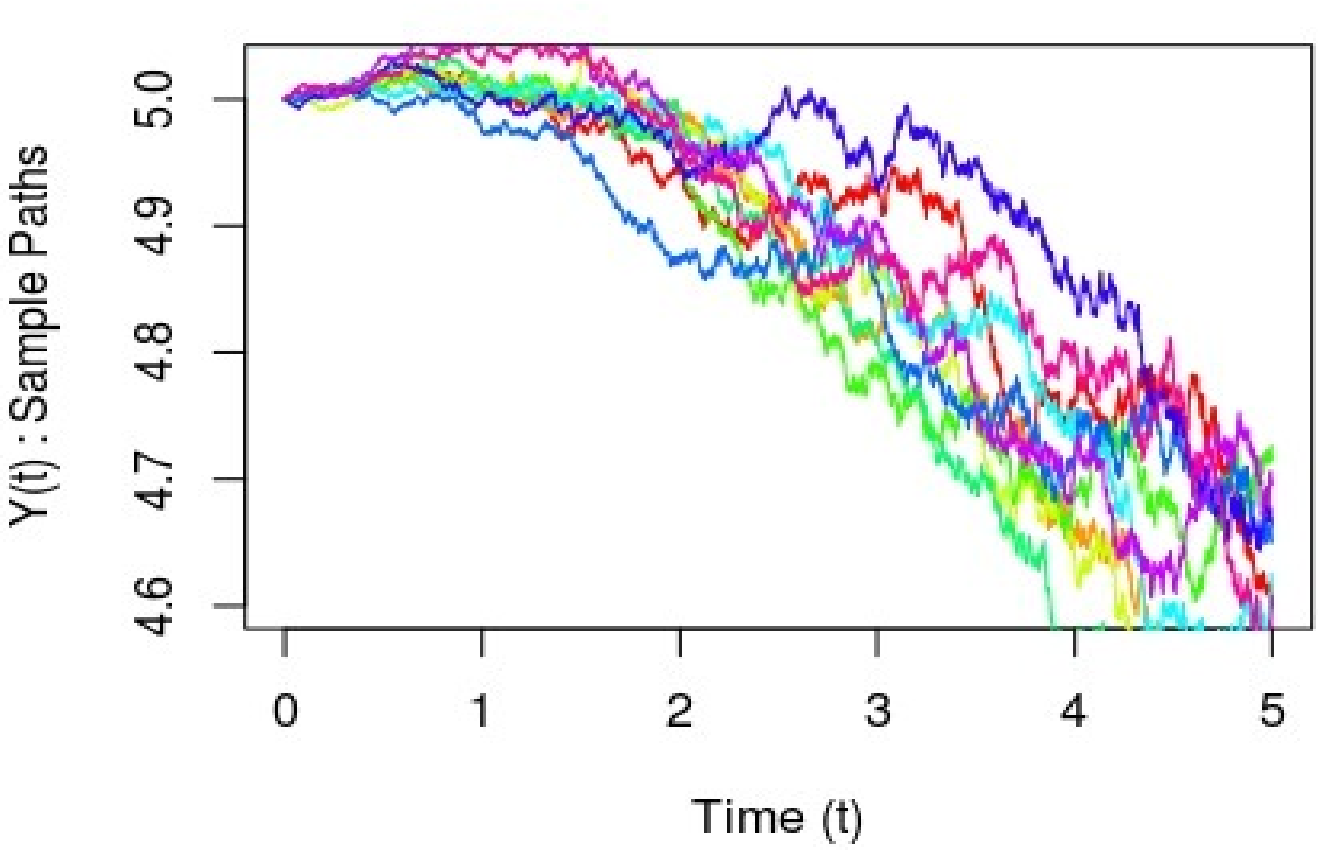


Generated Sample paths of Brownian motion (BM(μ,σ^2))

◆ Question 3

10 sample paths for the Brownian motion $Y \sim (BM(\mu,\sigma^2))$ in the time interval [0,5] were generated using $Y(0)=5$, $\mu(t) = 0.0325 - 0.05t$, $\sigma(t) = 0.012 + 0.0138t + 0.00125t^2$ and Euler's approximations and following values were obtained in one of the sample run of the program :

Exp[Y(2)] = 4.957307
Exp[Y(5)] = 4.581593



Generated Sample paths of Brownian motion ($BM(\mu,\sigma^2)$)