**White Noise that is not Strict White Noise**

Start with 2 random variables X and Y, defined as follows:

First, Y is uniform:

Next

But X and Y are clearly not independent.

Now consider a process with derived from as follows:

Randomly choose one of with

equal probability Let this random variable be Now let

1. This is clearly NOT strict white noise, because and are not independent.
2. We have from the calculations above.
3. We claim that also. To see this, note that

By a very similar calculation to (2), the correlation is 0.

Thus we have a process that is White Noise, but not Strict White Noise.