**Coding HW2 Readme**

**EX1:**

**(a) generates the Bernoulli samples 𝑋 with 𝑝 = 0.25, 𝑁 = 1000, and calculates the estimate P\_hatML­**

­­­A:

Line8: Xa = rand(N, 1) <0.25; generate P = 0.25 的Bernoulli samples。

Estimate 𝑝̂­ML­­ 其實就是sample mean，call function “estimate\_p”計算sample mean即為答案。

// estimate\_p function

function p = estimate\_p(X, N)

p = 0;

for i = 1:N

p = p + X(i);

end

p = p / N;

disp(p);

end

**(b) generates the Bernoulli samples 𝑋 with 𝑝 = 0.5, 𝑁 = 1000, and calculates the estimate P\_hat­ML­**

A:

Line17: Xb = randi([0, 1], N, 1); 或者 Xa = rand(N, 1) <0.5; generate P = 0.5 的Bernoulli samples。

與(a) 小題相同，Estimate 𝑝̂­ML­­ 其實就是sample mean，call function “estimate\_p”計算sample mean即為答案。

**EX2:**

1. **generates the 2-D normal samples 𝑋 with mu=[1 1]’ , sigma=[5 3; 3 4], N=1000, calculates the estimates mu\_hat­ML, sigma\_hat­ML**

A:

用作業一使用過的mvnrnd產生samples X，mu\_hat­ML的算法也是使用sample mean的方式，透過呼叫function part的”estimate\_mu”計算; sigma\_hat­ML的算法是，透過呼叫function part的”estimate\_sigma” 來計算。

1. **(b) generates the 2-D normal samples 𝑋 with mu=[1 1]’ , sigma=[5 3; 3 4], N=1000, calculates the estimates mu\_hat­ML, sigma\_hat­ML**

A:

同(a)小題

用作業一使用過的mvnrnd產生samples X，mu\_hat­ML的算法也是使用sample mean的方式，透過呼叫function part的”estimate\_mu”計算; sigma\_hat­ML的算法是，透過呼叫function part的”estimate\_sigma” 來計算。