Tutorial-3: Correlation, Regression and Probability Distribution Using Python

Batch -1

Q.1 For the following data set

{(25,70), (28,80), (32,85), (36,75), (38,59), (40,65), (39,78), (42,50), (41,54), (45,66)}

(i) Draw the scatter diagram (ii) Find the correlation coefficients

(iii) Find both the regression lines (iv) Plot both regression lines together

(v) Find the error for both regression lines

Q2 If X is Binomial Distribution B(n,p) where n=15 p=0.45

Write program to evaluate and print (i) P(X=10) (ii) P(X≤12) (iii) P(X≥9)

Q3 If X is Poisson Distribution with mean 5

Write program to evaluate and print (i) P(X=2) (ii) P(X≤4) (iii) P(1≤X≤3)

Q.4 If X is Uniform Distribution over the range (10,90). Write programme to evaluate and print

(i) P(X<29) (ii) P(X>34) (iii) P(70< X<80)

Q.5 If X is Exponential Distribution with mean 20. Write programme to evaluate and print

(i) P(X<10) (ii) P(X>7) (iii) P(11< X<16).

Find value of k such that P(X<k) = 0.6.

Q.6 If X is Normal Distribution with mean 40 and standard deviation 10. Write programme to evaluate and print (i) P(X<38) (ii) P(X>55) (iii) P(20< X<70).

Find value of k1 such that P(X<k1) = 0.3. Also find k2 such that P(X>k2) = 0.8