Module 4: Keras Assignment

Problem Statement:

Consider yourself to be Matt, who is a Deep Learning Engineer at a prestigious company. Your company is working with the National Institute of Diabetes to find out what are the factors which lead up to a patient having diabetes.

Dataset Used:

Pregnancies	Glucose	BloodPressure	SkinThickness	Insulin	BMI	DiabetesPedigreeFunction	Age	Outcome
6	148	72	35	0	33.6	0.627	50	1
1	85	66	29	0	26.6	0.351	31	0
8	183	64	0	0	23.3	0.672	32	1
1	89	66	23	94	28.1	0.167	21	0
0	137	40	35	168	43.1	2.288	33	1
5	116	74	0	0	25.6	0.201	30	0
3	78	50	32	88	31.0	0.248	26	1
10	115	0	0	0	35.3	0.134	29	0
2	197	70	45	543	30.5	0.158	53	1
8	125	96	0	0	0.0	0.232	54	1

Tasks to be Done :

A. Build a sequential model using Keras on top of this Diabetes dataset to find out if the patient has diabetes or not, using ‘Pregnancies’, ‘Glucose’ & ‘BloodPressure’ as independent columns.
   a. This model should have 1 hidden layer with 8 nodes
   b. Use Stochastic Gradient as the optimization algorithm
   c. Fit the model, with number of epochs to be 100 and batch size to be 10

B. Build another sequential model where ‘Outcome’ is the dependent variable and all other columns are predictors.
   a. This model should have 3 hidden layers with 16 nodes in each layer
   b. Use ‘adam’ as the optimization algorithm
   c. Fit the model, with number of epochs to be 150 and batch size to be 10