ExtraAssignment

Gradient Descent in Two Dimensions

ITC 502 Machine Learning and Deep Learning

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Question1 : x and y coordinates of the minimum point found by the gradient descent method.

Answer1 :
x value at local minimum: 0.0784
y value at local minimum: 0.5128

Question2: Minimum function value f(x,y) of the point found by the gradient descent method.

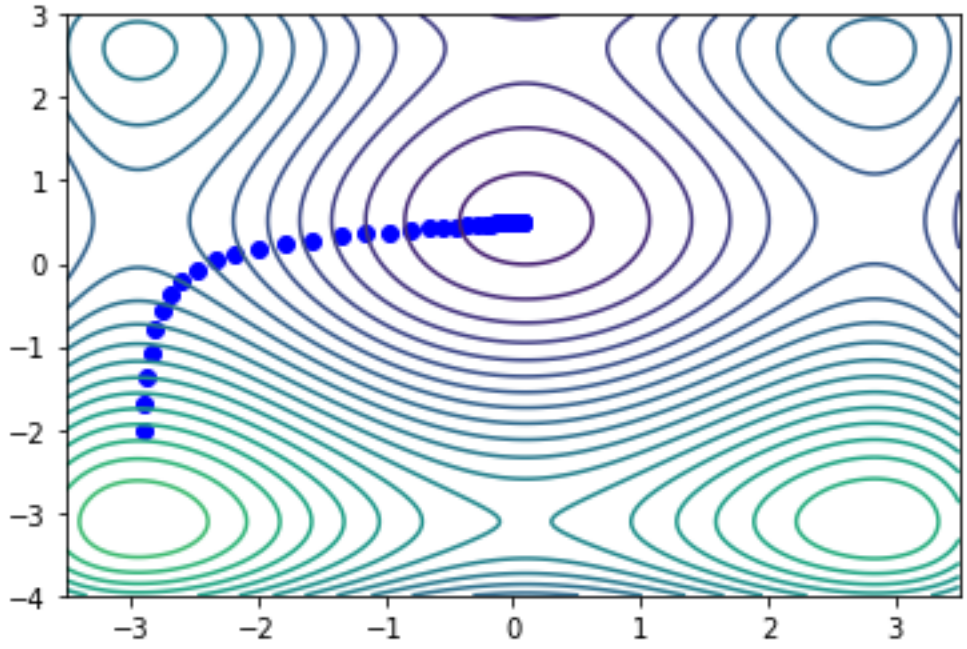
Answer2:
Local minimum occurs at: 8.6824

Question3: Number of gradient descent iterations

Answer3:
Number of steps taken: 40

Question4: Plot of gradient descent iterations as shown in Figure 1. Contour plot[1] in Figure 1 shows the function values. If you plot the function and gradient descent iterations as a surface plot in 3D (See Figure 2), you will get a 20 bonus points.

a)



b)