

# Data Analytics using Python

## Assignment -1

1. For the following functions below find the minima using gradient descent algorithm (stop the algorithm after 1000 iterations), also study the sensitivity of the algorithm with different values of learning rate (alpha):
  - a.  $y = (x - 2)^2 + 5x$
  - b.  $y = (x - 2)^3 + 10x^2$
  - c.  $y = \frac{\log x}{x}$
2. Find out two business problems from your work for each of the following categories of machine learning:
  - a. Supervised Learning – Prediction problems
  - b. Supervised Learning – classification problems
  - c. Unsupervised Learning