Homework 3: Bayesian Curve:

This is a document explaining how the demo will take place and what to expect.

Duration:

- Everyone will get 3 minutes to demo how their Bayesian curve assignment works.
- You can't exceed that time duration or else 10 points will be deducted.

Programming:

- When you come for the Demo, make sure your program can be compiled. There should be no compilation errors.
- Please compile and keep the program ready to run.
- The Program should be well commented to have an easy understanding.
- You can program in any language and use any libraries you want. There is no restriction.
- You have to test your program for 10 data sets. The data sets preferably should be actual stock prices, or can be dummy data sets.
- You have to compare the expected value with your predicted value.
- You have to calculate the absolute mean error and average relative error.

Report:

- You have to make a report outlining your testing of the Bayesian curve to get a predicted value.
- Bring a one page report to the Demo which includes 10 trial runs, absolute mean error and average relative error.
- Just include results of your test runs. Please don't write 10 pages about Bayesian curve and how to do prediction; you will not get extra points for it.

Demo:

- I have provided you 5 data sets in the last page, during the demo I will randomly pick one data set, and you need to show me what predicted value you get. Depending on how close your predicted value is to the actual value, I will grade your assignment.
- I will ask you 1-2 questions about your implementation of the program.

➢ **Grading Rubric:**

Criteria	Pts	Excellent (80-100)pts	Good (50-80)pts	Satisfactory (25-50)pts	Poor (0-25)pts
Program	**50**	• Program well documented. • Gives good prediction. • Calculates the errors.	• Program is well documented. • Gives prediction. • Errors are slightly higher than expected.	• Program is not well documented. • Gives wrong prediction. • Very large errors.	• Program not documented. • No prediction achieved. • Very large errors.
Report	**10**	• Report submitted before Demo. • Has 10 trial run data well documented.	• Report submitted. • Has 10 trial runs but no consistency in results	• Report submitted. • 10 trial runs have erratic prediction.	• Report not submitted. • Doesn't have 10 trial runs.
Demo	**40**	• Predicted value for the given data set is +/-5% close to actual value. • Answered all questions correctly. • Demo finished within 5 minutes.	• Predicted value for the given data set is +/-10% close to actual value. • Unable to answer few questions. • Demo finished little over 5 minutes.	• Predicted value for the given data set is +/-25% close to actual value. • . • Unable to answer any question. • Demo finished in 8-9 minutes.	• Predicted value for the given data set no where close to actual value. • Unable to answer any questions. • Demo takes way long to finish.

Test Data Set for Demo:

These are stock values for 5 companies:

Data 1	Data 2	Data 3	Data 4	Data 5
28.32	25.67	125.67	325.67	1325.67
28.50	26.87	126.87	331.87	1321.87
27.91	28.55	128.55	331.55	1331.55
27.37	29.32	132.44	330.42	1334.42
28.26	28.26	123.55	333.55	1333.15
28.55	28.55	128.88	332.88	1328.88
28.65	30.18	130.12	330.12	1324.12
29.05	32.11	134.5	334.5	1330.35
28.64	29.14	139.21	335.21	1335.21
28.11	28.11	137.45	334.45	1334.45

These are 10 values for each company. You have to use Bayesian curve to predict the 11th value. In the demo I will be checking your result for this data set. (Please prepare these data in advance so that your program can read it directly.)