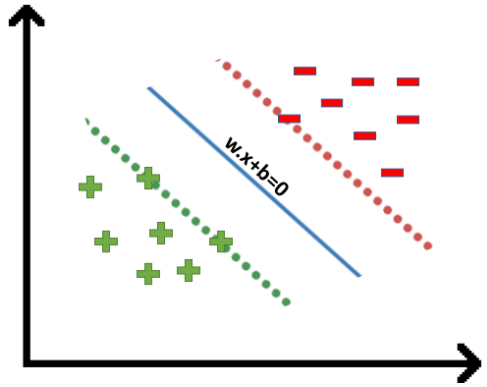
Methodology:

SVM is a powerful supervised algorithm that works best on smaller datasets but on complex ones. Support Vector Machine, abbreviated as SVM can be used for both regression and classification tasks, but generally, they work best in classification problems. They were very famous around the time they were created, during the 1990s, and keep on being the go-to method for a high-performing algorithm with a little tuning.

Equations used:



$$\vec{X}.\vec{w} - c \geq 0$$

putting $-c$ as b, we get

$$\vec{X}.\vec{w} + b \geq 0$$

hence

$$y = \begin{cases} +1 & \text{if } \vec{X}.\vec{w} + b \geq 0 \\ -1 & \text{if } \vec{X}.\vec{w} + b < 0 \end{cases}$$

Results:

Method	Accuracy
Part1	0.83
Part2	0.82
Part3	0.904
Part5	0.954

Discussion & conclusion:

In Part 5 model accuracy is 0.954 which is maximum and hence non linear model is performing better.