Assignment 1

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Question: 3 (c)
Using a graph paper draw a histogram for the given distribution showing the
number of runs scored by 50 batsmen. Estimate the mode of the data.

Runs Scored	3000-4000	4000-5000	5000-6000	6000-7000	7000-8000	8000-9000	9000-10000
No. of batsmen	4	18	9	6	7	2	4

Table 1.1

Solution:

The Histogram for the data given in Table 1.1 is plotted as shown in Fig:
1.1.
The approach for calculating mode is outlined in Fig: 1.2. The interval
corresponding to the maximum number of batsmen is the mode class. The
intersection of the lines PQ and RS as shown in Fig 1.2 (Point M) is the
mode point. The required mode is the x-coordinate of the Mode point.

$$P = \begin{pmatrix} 5000 \\ 18 \end{pmatrix} \quad Q = \begin{pmatrix} 4000 \\ 4 \end{pmatrix}$$

$$R = \begin{pmatrix} 4000 \\ 18 \end{pmatrix} \quad S = \begin{pmatrix} 5000 \\ 9 \end{pmatrix}$$

and the mode point is

$$M = \begin{pmatrix} 4068.695 \\ 12.521 \end{pmatrix}$$
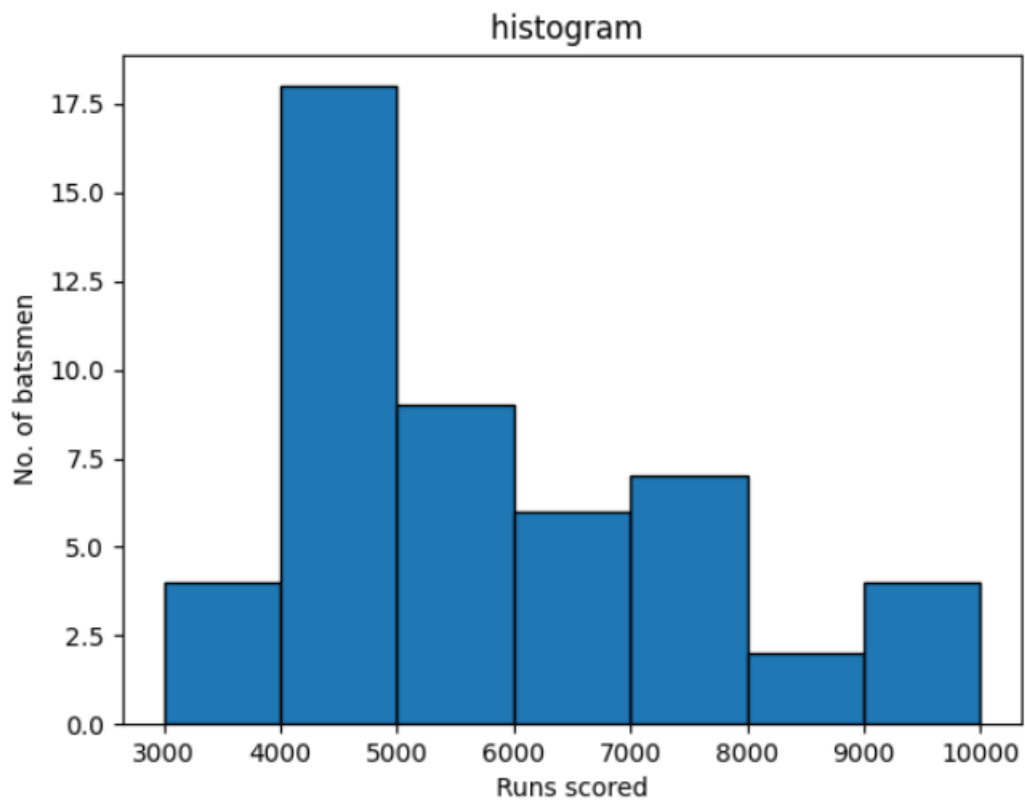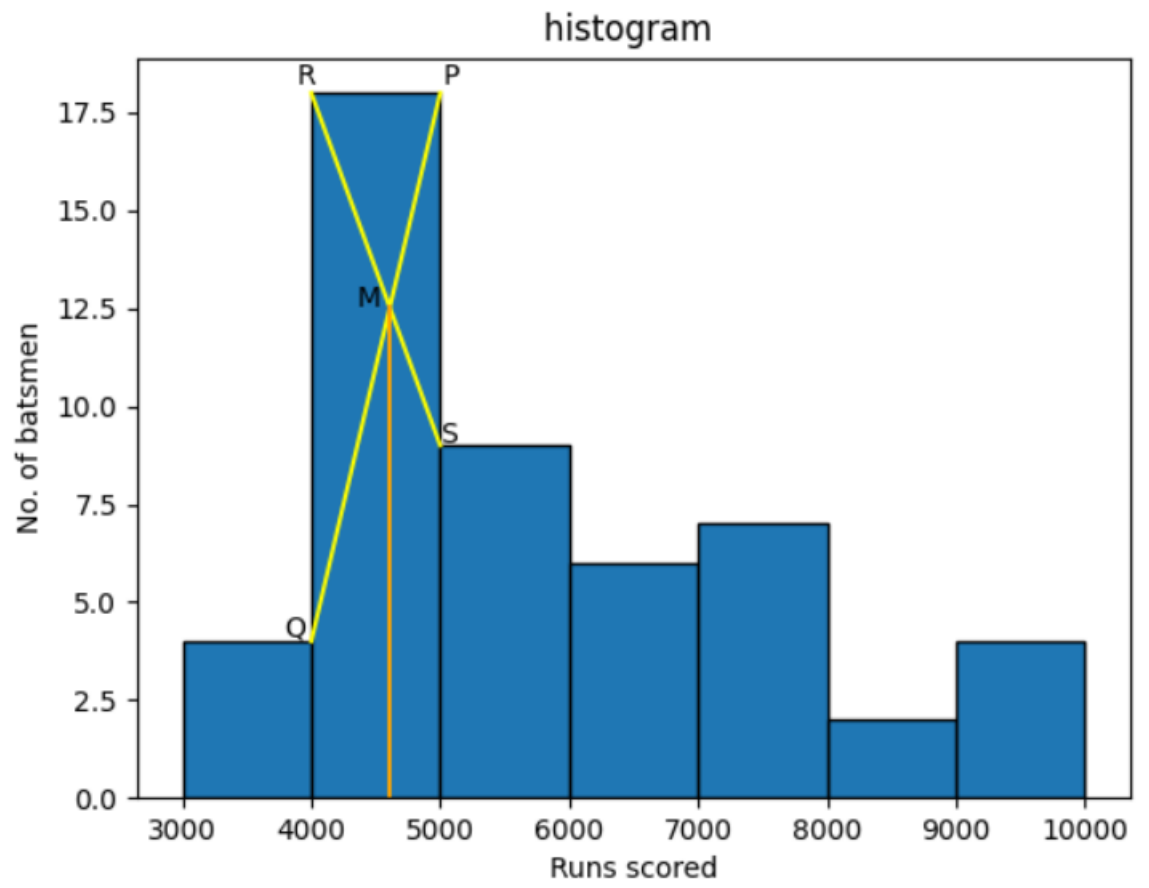
Therefore, the mode is 4068.695.

Fig: 1.1

Fig: 1.2