**EX:** An engineer measures the following beta values for bipolar transistors with the aim of finding nominal values of gain, (i.e., beta), to list on a datasheet.

\[
\begin{align*}
\beta_1 &= 111 \\
\beta_2 &= 136 \\
\beta_3 &= 159 \\
\beta_4 &= 141 \\
\beta_5 &= 109 \\
\beta_6 &= 121 \\
\beta_7 &= 117 \\
\beta_8 &= 105 \\
\beta_9 &= 99 \\
\beta_{10} &= 102
\end{align*}
\]

Find the sample mean of the data.

**SOL’N:** The sample mean is the average of the data values:

\[
\bar{X} = \frac{1}{n} \sum_{i=1}^{n} X_i = \frac{1}{n} X_1 + \ldots + \frac{1}{n} X_n
\]

Here, \( n = 10 \) is the number of data points, and the \( X_i \) are the \( \beta \) values. Using a spreadsheet to sum the \( \beta \) values and divide by 10, we have our sample mean:

\[
\text{sample mean} = \bar{X} = \frac{1200}{10} = 120
\]