Confidence interval of a mean

The mean you calculate from a sample is not likely to be exactly equal to the population mean. The size of the discrepancy depends on the size and variability of the sample. If your sample is small and variable, the sample mean may be quite far from the population mean. If your sample is large with little scatter, the sample mean will probably be very close to the population mean. Statistical calculations combine sample size and variability (standard deviation) to generate a confidence interval (CI) for the population mean. You can calculate intervals for any desired degree of confidence, but 95% confidence intervals are most common. If you assume that your sample is randomly selected from some population (that follows a Gaussian distribution), you can be 95% sure that the confidence interval includes the population mean. More precisely, if you generate many 95% CI from many data sets, you expect the CI to include the true population mean in 95% of the cases and not to include the true mean value in the other 5%. Since you usually don't know the population mean, you'll never know when this happens.

Confidence intervals of other parameters

Statisticians have derived methods to generate confidence intervals for almost any situation. For example when comparing groups, you can calculate the 95% confidence interval for the difference between the group means. Interpretation is straightforward. If you accept the assumptions, there is a 95% chance that the interval you calculate includes the true difference between population means.

Similarly, methods exist to compute a 95% confidence interval for a proportion, the ratio of proportions, the best-fit slope of linear regression, and almost any other statistical parameter.

Nothing special about 95%

There is nothing magical about 95%. You could calculate confidence intervals for any desired degree of confidence. If you want more confidence that an interval contains the true parameter, then the intervals have to be wider. So 99% confidence intervals are wider than 95% confidence intervals, and 90% confidence intervals are narrower than 95% confidence intervals.