1. Kolmogorov- Smirnov (KS) Test

Step-1: Define the hypothesis for uniformity.

$$H_0 = R_i \sim U(0,1) \qquad [R_i = Random]$$

$$H_1 = R_i \nsim U(0,1)$$

Step-2: Arrange data in increasing order.

$$R_i = i^m \text{ smallest integer}$$

$$R_1 \leq R_2 \leq \ldots\ldots\ldots \leq R_n$$

Step-3: Compute D^+ and D^-

$$D^+ = \max\{(i/N) - R_i\}; \ 1 \leq i \leq N$$

$$D^- = \max\{(R_i - (i-1)/N\}; \ 1 \leq i \leq N$$

> D^+= Max KS test Parameter
>
> D^-= Min KS test Parameter

Step-4: Compute $D = \max(D^+, D^-)$

Step-5: Determine the critical value $\mathbf{D_\alpha}$ for specified los, α

Step-6: If $\mathbf{D > D_\alpha} \rightarrow \mathbf{H_0}$ is rejected means no's are not uniform.