

Phase III:- Adding new packages to mathematical & statistical libraries.

Reference implementation:- SciPy, Julia, amol & Ceph

### ★ Mathematical Pkgs.

\* Priority order based on "scipy.special"

#### i) Airy functions

- $\text{airy}(z, \text{out}) \rightarrow$  Airy functions & their derivatives.
- $\text{airyx}(z, \text{out}) \rightarrow$  Exponentially scaled airy func & their derivatives.

#### ii) Elliptic Integrals:-

- $\text{ellipkinc}(\phi, m, \text{out})$ :- Incomplete elliptic integral of 1<sup>st</sup> kind.
- $\text{ellipeinc}(\phi, m, \text{out})$ :- Incomplete elliptic integral of 2<sup>nd</sup> kind.

#### iii) Bessel functions:-

- $\text{jv}(\nu, z, \text{out})$ :- Bessel function of the 1<sup>st</sup> kind of real order & complex argument.
- $\text{jve}(\nu, z, \text{out})$ :- Exponentially scaled bessel func<sup>n</sup> of the 1<sup>st</sup> kind order  $\nu$ .

### ★ Statistical Packages

\* Based on tracking issue present in statlib repo & scipy

#### i) Rademacher distribution

#### ii) Zipf distribution

#### iii) double-gamma distribution

#### iv) Rice distribution