Calculation of π by Monte-Carlo algorithm

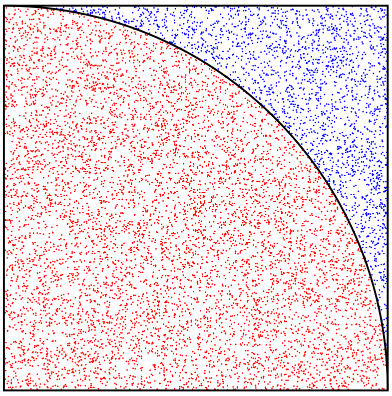
$n = 10000$

$x = \mathbf{random}(\mathbf{fill}(\mathbf{vector_{hp}}(n); 1)) = \mathbf{random}(\mathbf{fill}(\mathbf{vector_{hp}}(10000); 1)) = [0.8815335\ \ 0.7977784\ \ 0.6651829\ \ 0.2953373\ \ 0.184329\ \ 0.9738323\ \ 0.448848\ \ 0.4044005\ \ 0.3997995\ \ 0.8671214\ \ 0.7228449\ \ 0.2846159\ \ 0.5242558\ \ 0.0004758663\ \ 0.9974857\ \ 0.4574623\ \ 0.08322548\ \ 0.8563595\ \ 0.03470082\ \ 0.3026956\ \ \ldots\ \ 0.9153]$

$y = \mathbf{random}(\mathbf{fill}(\mathbf{Vector_{hp}}(n); 1)) = \mathbf{random}(\mathbf{fill}(\mathbf{Vector_{hp}}(10000); 1)) = [0.7608876\ \ 0.4550417\ \ 0.5076255\ \ 0.4827496\ \ 0.5171769\ \ 0.4588636\ \ 0.3735884\ \ 0.232175\ \ 0.251505\ \ 0.09061793\ \ 0.04239632\ \ 0.6901894\ \ 0.09934924\ \ 0.1348916\ \ 0.7329476\ \ 0.3553113\ \ 0.1951417\ \ 0.7389414\ \ 0.604645\ \ 0.439894\ \ \ldots\ \ 0.2009293]$

$r = \sqrt{x^{\odot 2} + y^{\odot 2}} = [1.164496\ \ 0.9184298\ \ 0.8367508\ \ 0.5659251\ \ 0.5490438\ \ 1.076525\ \ 0.5839802\ \ 0.46631\ \ 0.4723287\ \ 0.8718436\ \ 0.7240871\ \ 0.7465706\ \ 0.5335864\ \ 0.1348925\ \ 1.237817\ \ 0.579239\ \ 0.2121479\ \ 1.131099\ \ 0.6056399\ \ 0.5339769\ \ \ldots\ \ 0.9370948]$

$n_{\mathrm{in}} = \mathbf{count}(\mathbf{floor}(r); 0; 1) = 7849$, $PI = \dfrac{4 \cdot n_{\mathrm{in}}}{n} = \dfrac{4 \cdot 7849}{10000} = 3.1396$



@hydrostructai.com