Calculation of π by Monte-Carlo algorithm

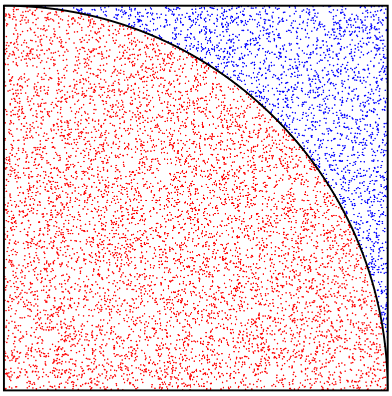
$n = 10000$

$= \mathbf{random}(\mathbf{fill}(\mathbf{vector}_{\mathrm{hp}}(n); 1)) = \mathbf{random}(\mathbf{fill}(\mathbf{vector}_{\mathrm{hp}}(10000); 1)) = [0.001799367\ \ 0.8750261\ \ 0.2829606$
$0.1733978\ \ 0.5763774\ \ 0.2903022\ \ 0.3657439\ \ 0.5450284\ \ 0.6811521\ \ 0.129895\ \ 0.6017672\ \ 0.3065246\ \ 0.7190901$
$0.1435574\ \ 0.4793494\ \ 0.4363276\ \ 0.9358903\ \ 0.2292997\ \ 0.5298317\ \ 0.8569359\ \ \ldots\ \ 0.4501879]$

$= \mathbf{random}(\mathbf{fill}(\mathbf{Vector}_{\mathrm{hp}}(n); 1)) = \mathbf{random}(\mathbf{fill}(\mathbf{Vector}_{\mathrm{hp}}(10000); 1)) = [0.4698551\ \ 0.403979\ \ 0.3578065$
$0.08098221\ \ 0.2013057\ \ 0.3727541\ \ 0.220038\ \ 0.3555691\ \ 0.9844405\ \ 0.3892044\ \ 0.5625908\ \ 0.6622651\ \ 0.6501075$
$0.4220525\ \ 0.9375995\ \ 0.5138136\ \ 0.8339162\ \ 0.2749179\ \ 0.04185187\ \ 0.5474062\ \ \ldots\ \ 0.9424482]$

$= \sqrt{x^{\odot 2} + y^{\odot 2}} = [0.4698586\ \ 0.9637789\ \ 0.4561713\ \ 0.1913764\ \ 0.6105202\ \ 0.4724627\ \ 0.4268318\ \ 0.6507575$
$1.197118\ \ 0.4103081\ \ 0.8237914\ \ 0.7297619\ \ 0.9693969\ \ 0.4457993\ \ 1.053028\ \ 0.6740817\ \ 1.253518\ \ 0.3579919$
$0.5314821\ \ 1.016854\ \ \ldots\ \ 1.044451]$

$n_{\mathrm{in}} = \mathbf{count}(\mathbf{floor}(r); 0; 1) = 7742$, $PI = \dfrac{4 \cdot n_{\mathrm{in}}}{n} = \dfrac{4 \cdot 7742}{10000} = 3.0968$



@hydrostructai.com