Calculation of π by Monte-Carlo algorithm

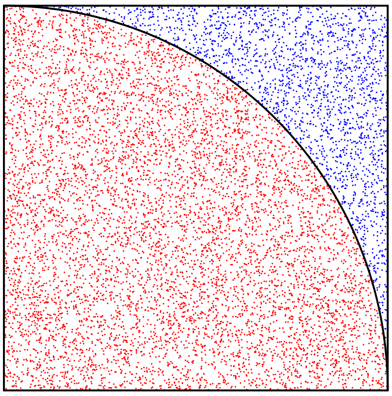
$n = 10000$

$= \mathbf{random}(\mathbf{fill}(\mathbf{vector}_{hp}(n); 1)) = \mathbf{random}(\mathbf{fill}(\mathbf{vector}_{hp}(10000); 1)) = [0.796934\ \ 0.3428716\ \ 0.8387431$
$0.8144222\ \ 0.208082\ \ 0.9580367\ \ 0.235574\ \ 0.9640031\ \ 0.8439941\ \ 0.7286194\ \ 0.8198159\ \ 0.4949155\ \ 0.8513573$
$0.5243268\ \ 0.004840068\ \ 0.2672824\ \ 0.02825512\ \ 0.8103465\ \ 0.5666044\ \ 0.4332156\ \ \ldots\ \ 0.04434482]$

$= \mathbf{random}(\mathbf{fill}(\mathbf{Vector}_{hp}(n); 1)) = \mathbf{random}(\mathbf{fill}(\mathbf{Vector}_{hp}(10000); 1)) = [0.692637\ \ 0.3152484\ \ 0.9603776$
$0.2372237\ \ 0.8257397\ \ 0.1262372\ \ 0.2408104\ \ 0.9619765\ \ 0.2079101\ \ 0.9574729\ \ 0.8109736\ \ 0.5249152\ \ 0.1995952$
$0.6665502\ \ 0.7679245\ \ 0.3873982\ \ 0.4064997\ \ 0.1041482\ \ 0.3927386\ \ 0.1914169\ \ \ldots\ \ 0.735944]$

$= \sqrt{x^{\odot 2} + y^{\odot 2}} = [1.055865\ \ 0.4657708\ \ 1.275075\ \ 0.848268\ \ 0.851554\ \ 0.9663178\ \ 0.336875\ \ 1.361874$
$0.8692254\ \ 1.203179\ \ 1.153159\ \ 0.7214411\ \ 0.8744412\ \ 0.8480612\ \ 0.7679398\ \ 0.4706561\ \ 0.4074805\ \ 0.8170118$
$0.6894086\ \ 0.4736204\ \ \ldots\ \ 0.7372788]$

$n_{in} = \mathbf{count}(\mathbf{floor}(r); 0; 1) = 7920$, $PI = \dfrac{4 \cdot n_{in}}{n} = \dfrac{4 \cdot 7920}{10000} = 3.168$



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