

Nama : Laila Khoirun Nisa

NIM : B2A020034

Kelas : A

## TUGAS TEKNIK SAMPLING PERTEMUAN 2

### RANDOM NUMBER GENERATOR

Gunakan Multiplicative

Gunakan Bernouli\_1

$Z0 = 11123$                        $m = 138$

$a = 35$                                $n = 100$

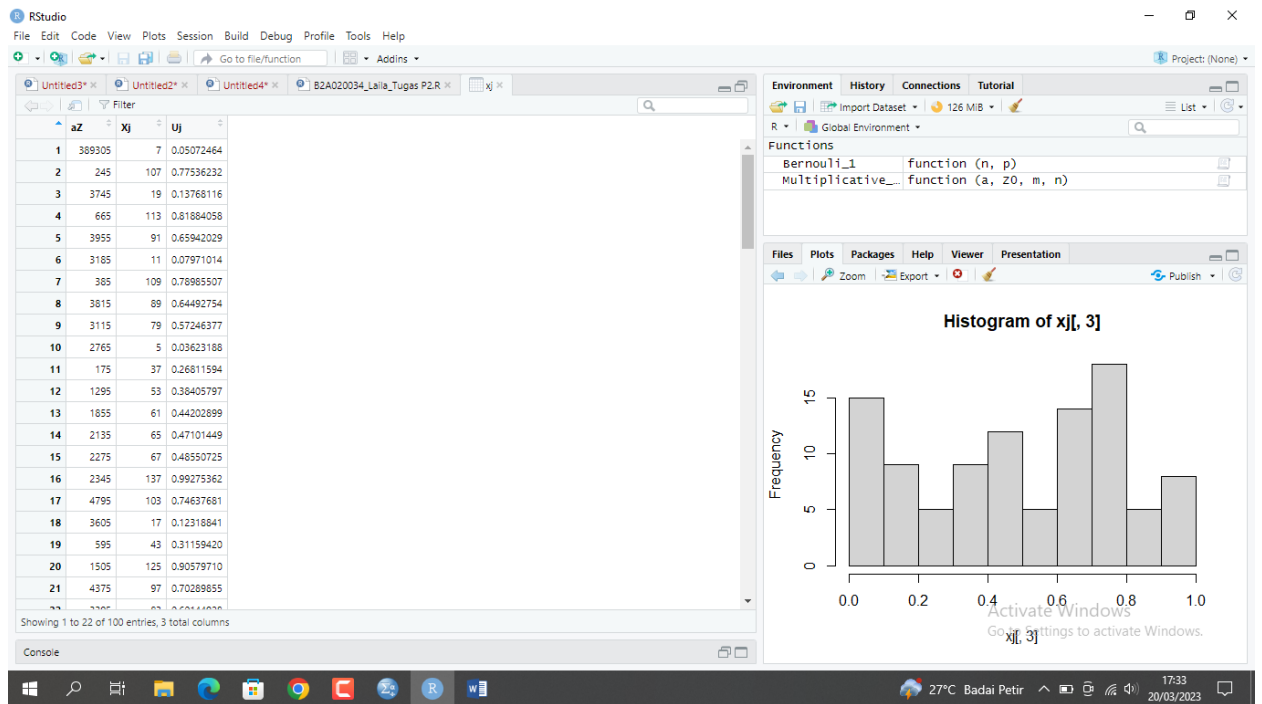
$p = 0.65$

#### **Syntax Multiplicative**

```
Multiplicative_RNG<-function(a,Z0,m,n){  
  xj<-matrix(NA,n,3)  
  colnames(xj)<-c("aZ","Xj","Uj")  
  for (j in 1:n)  
  {  
    xj[j,1]<-(a*Z0)  
    xj[j,2]<-xj[j,1]%%m  
    xj[j,3]<-xj[j,2]/m  
    Z0<-xj[j,2]  
  }  
  hist(xj[,3])  
  View(xj)  
}
```

#### **Console**

```
> Multiplicative_RNG(35,11123,138,100)
```



RStudio

File Edit Code View Plots Session Build Debug Profile Tools Help

Go to file/function Addins

Untitled3\* xj B2A020034\_Laila\_Tugas P2.R xj

	az	xj	Uj
22	3395	83	0.60144928
23	2905	7	0.05072464
24	245	107	0.77536232
25	3745	19	0.13768116
26	665	113	0.81884058
27	3955	91	0.65942029
28	3185	11	0.07971014
29	385	109	0.78985507
30	3815	89	0.64492754
31	3115	79	0.57246377
32	2765	5	0.03623188
33	175	37	0.26811594
34	1295	53	0.38405797
35	1855	61	0.44202899
36	2135	65	0.47101449
37	2275	67	0.48550725
38	2345	137	0.99275362
39	4795	103	0.74637681
40	3605	17	0.12318841
41	595	43	0.31159420
42	1505	125	0.90579710

Showing 22 to 43 of 100 entries, 3 total columns

RStudio

File Edit Code View Plots Session Build Debug Profile Tools Help

Go to file/function Addins

Untitled3\* xj B2A020034\_Laila\_Tugas P2.R xj

	az	xj	Uj
43	4375	97	0.70289855
44	3395	83	0.60144928
45	2905	7	0.05072464
46	245	107	0.77536232
47	3745	19	0.13768116
48	665	113	0.81884058
49	3955	91	0.65942029
50	3185	11	0.07971014
51	385	109	0.78985507
52	3815	89	0.64492754
53	3115	79	0.57246377
54	2765	5	0.03623188
55	175	37	0.26811594
56	1295	53	0.38405797
57	1855	61	0.44202899
58	2135	65	0.47101449
59	2275	67	0.48550725
60	2345	137	0.99275362
61	4795	103	0.74637681
62	3605	17	0.12318841
63	595	43	0.31159420

Showing 42 to 64 of 100 entries, 3 total columns

RStudio

File Edit Code View Plots Session Build Debug Profile Tools Help

Go to file/function Addins

Untitled3\* x Untitled2\* x Untitled4\* x B2A020034\_Laila\_Tugas P2.R x

	aZ	Xj	Uj
64	1505	125	0.90579710
65	4375	97	0.70289855
66	3395	83	0.60144928
67	2905	7	0.05072464
68	245	107	0.77536232
69	3745	19	0.13768116
70	665	113	0.81884058
71	3955	91	0.65942029
72	3185	11	0.07971014
73	385	109	0.78985507
74	3815	89	0.64492754
75	3115	79	0.57246377
76	2765	5	0.03623188
77	175	37	0.26811594
78	1295	53	0.38405797
79	1855	61	0.44202899
80	2135	65	0.47101449
81	2275	67	0.48550725
82	2345	137	0.99275362
83	4795	103	0.74637681
84	3605	17	0.12318841

Showing 63 to 84 of 100 entries, 3 total columns

RStudio

File Edit Code View Plots Session Build Debug Profile Tools Help

Go to file/function Addins

Untitled3\* x Untitled2\* x Untitled4\* x B2A020034\_Laila\_Tugas P2.R x

	aZ	Xj	Uj
80	2135	65	0.47101449
81	2275	67	0.48550725
82	2345	137	0.99275362
83	4795	103	0.74637681
84	3605	17	0.12318841
85	595	43	0.31159420
86	1505	125	0.90579710
87	4375	97	0.70289855
88	3395	83	0.60144928
89	2905	7	0.05072464
90	245	107	0.77536232
91	3745	19	0.13768116
92	665	113	0.81884058
93	3955	91	0.65942029
94	3185	11	0.07971014
95	385	109	0.78985507
96	3815	89	0.64492754
97	3115	79	0.57246377
98	2765	5	0.03623188
99	175	37	0.26811594
100	1295	53	0.38405797

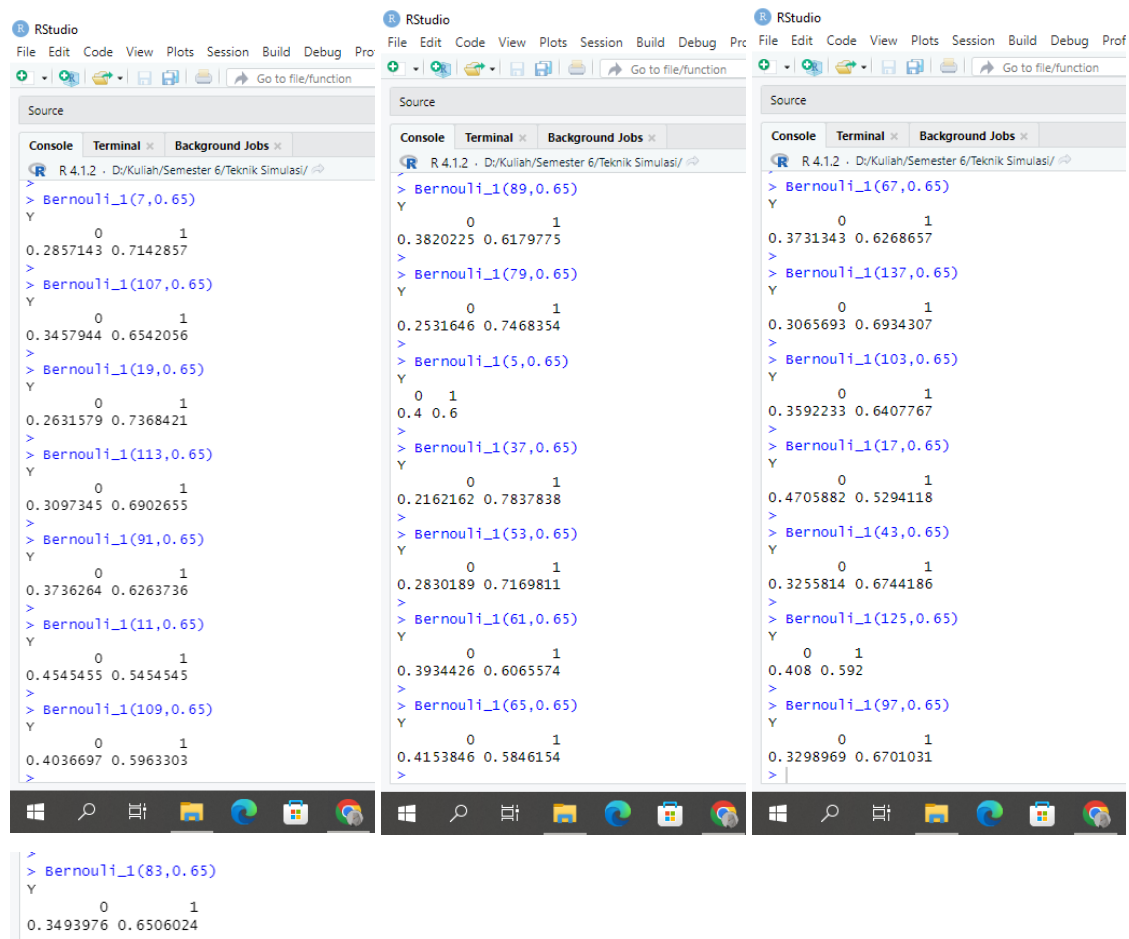
Showing 79 to 100 of 100 entries, 3 total columns

## Syntax Bernouli\_1

```
Bernouli_1<-function(n,p){  
  i<-n  
  p<-p  
  X<-runif(i)  
  Y<-NULL  
  for (z in 1:i) ifelse (X[z]<=p,Y[z]<-1,Y[z]<-0)  
  (tabel<-table(Y)/length(Y))  
}
```

## Console

Nilai n menggunakan nilai xj pada tabel



The image displays three screenshots of the RStudio console, showing the execution of the `Bernouli_1` function with different values of `n` and `p`. Each screenshot shows the function call, the output of the function (a table of 0s and 1s), and the resulting table of relative frequencies.

**Screenshot 1 (Left):** Shows the function being called with `n=7` and `p=0.65`. The output is a vector of 7 values (0, 1, 0, 0, 1, 0, 1). The resulting table shows the relative frequencies of 0 and 1.

**Screenshot 2 (Middle):** Shows the function being called with `n=89` and `p=0.65`. The output is a vector of 89 values. The resulting table shows the relative frequencies of 0 and 1.

**Screenshot 3 (Right):** Shows the function being called with `n=67` and `p=0.65`. The output is a vector of 67 values. The resulting table shows the relative frequencies of 0 and 1.

**Bottom Screenshot:** Shows the function being called with `n=83` and `p=0.65`. The output is a vector of 83 values. The resulting table shows the relative frequencies of 0 and 1.