1. Pairs
a. Data Test

```
$ echo "34 56 29 12 34 56 92 10 34 12" > user1
$ echo "18 29 12 34 79 18 56 12 34 92" > user2
$ echo "26 56 28 39 46 16 56 28 9 46" > user3
```

b. Test Result

```
(10, 12) 0.5
(10, 34) 0.5
(12, 10) 0.09
(12, 18) 0.09
(12, 34) 0.36
(12, 56) 0.18
(12, 79) 0.09
(12, 92) 0.18
(16, 28) 0.25
(16, 46) 0.25
(16, 56) 0.25
(16, 9)  0.25
(18, 12) 0.25
(18, 29) 0.12
(18, 34) 0.25
(18, 56) 0.12
(18, 79) 0.12
(18, 92) 0.12
(26, 16) 0.11
(26, 28) 0.22
(26, 39) 0.11
(26, 46) 0.22
(26, 56) 0.22
(26, 9)  0.11
(28, 16) 0.17
(28, 39) 0.17
(28, 46) 0.33
(28, 56) 0.17
(28, 9)  0.17
(29, 10) 0.07
(29, 12) 0.27
(29, 18) 0.07
(29, 34) 0.27
(29, 56) 0.13
(29, 79) 0.07
(29, 92) 0.13
(34, 10) 0.08
(34, 12) 0.25
(34, 18) 0.08
(34, 29) 0.08
(34, 56) 0.25
(34, 79) 0.08
(34, 92) 0.17
```

```
(39, 16) 0.17
(39, 28) 0.17
(39, 46) 0.33
(39, 56) 0.17
(39, 9)  0.17
(46, 16) 0.25
(46, 28) 0.25
(46, 56) 0.25
(46, 9)  0.25
(56, 10) 0.06
(56, 12) 0.18
(56, 16) 0.06
(56, 28) 0.12
(56, 29) 0.06
(56, 34) 0.18
(56, 39) 0.06
(56, 46) 0.12
(56, 9)  0.06
(56, 92) 0.12
(79, 12) 0.2
(79, 18) 0.2
(79, 34) 0.2
(79, 56) 0.2
(79, 92) 0.2
(9, 46)  1.0
(92, 10) 0.33
(92, 12) 0.33
(92, 34) 0.33
```

## 2. Stripes

### a. Data test

```
$ echo "34 56 29 12 34 56 92 10 34 12" > user1
$ echo "18 29 12 34 79 18 56 12 34 92" > user2
$ echo "26 56 28 39 46 16 56 28 9 46" > user3
```

### b. Test Result

```
10     [(34, 0.5), (12, 0.5)]
12     [(56, 0.18), (92, 0.18), (34, 0.36), (18, 0.09), (79, 0.09), (10, 0.09)]
16     [(56, 0.25), (46, 0.25), (28, 0.25), (9, 0.25)]
18     [(56, 0.12), (92, 0.12), (34, 0.25), (79, 0.12), (29, 0.12), (12, 0.25)]
26     [(56, 0.22), (39, 0.11), (46, 0.22), (28, 0.22), (16, 0.11), (9, 0.11)]
28     [(56, 0.17), (39, 0.17), (46, 0.33), (16, 0.17), (9, 0.17)]
29     [(56, 0.13), (92, 0.13), (34, 0.27), (18, 0.07), (79, 0.07), (10, 0.07), (12, 0.27)]
34     [(56, 0.25), (92, 0.17), (18, 0.08), (79, 0.08), (29, 0.08), (10, 0.08), (12, 0.25)]
39     [(56, 0.17), (28, 0.17), (46, 0.33), (16, 0.17), (9, 0.17)]
46     [(56, 0.25), (28, 0.25), (16, 0.25), (9, 0.25)]
56     [(39, 0.06), (92, 0.12), (46, 0.12), (28, 0.12), (34, 0.18), (16, 0.06), (29, 0.06), (10, 0.06), (9, 0.06),
(12, 0.18)]
79     [(56, 0.2), (92, 0.2), (34, 0.2), (18, 0.2), (12, 0.2)]
```

9       [(46, 1.0)]
92      [(34, 0.33), (10, 0.33), (12, 0.33)]

## 3. Hybrid

### a. Data Test

```
$ echo "34 56 29 12 34 56 92 10 34 12" > user1
$ echo "18 29 12 34 79 18 56 12 34 92" > user2
$ echo "26 56 28 39 46 16 56 28 9 46" > user3
```

### b. Test Result

10      [(34, 0.5), (12, 0.5)]
12      [(56, 0.18), (92, 0.18), (34, 0.36), (18, 0.09), (79, 0.09), (10, 0.09)]
16      [(56, 0.25), (46, 0.25), (28, 0.25), (9, 0.25)]
18      [(56, 0.12), (92, 0.12), (34, 0.25), (79, 0.12), (29, 0.12), (12, 0.25)]
26      [(56, 0.22), (39, 0.11), (46, 0.22), (28, 0.22), (16, 0.11), (9, 0.11)]
28      [(56, 0.17), (39, 0.17), (46, 0.33), (16, 0.17), (9, 0.17)]
29      [(56, 0.13), (92, 0.13), (34, 0.27), (18, 0.07), (79, 0.07), (10, 0.07), (12, 0.27)]
34      [(56, 0.25), (92, 0.17), (18, 0.08), (79, 0.08), (29, 0.08), (10, 0.08), (12, 0.25)]
39      [(56, 0.17), (46, 0.33), (28, 0.17), (16, 0.17), (9, 0.17)]
46      [(56, 0.25), (28, 0.25), (16, 0.25), (9, 0.25)]
56      [(39, 0.06), (92, 0.12), (46, 0.12), (28, 0.12), (34, 0.18), (16, 0.06), (29, 0.06), (9, 0.06), (10, 0.06), (12, 0.18)]
79      [(56, 0.2), (92, 0.2), (34, 0.2), (18, 0.2), (12, 0.2)]
9       [(46, 1.0)]
92      [(34, 0.33), (10, 0.33), (12, 0.33)]