

```
1 % NAME: ADITYA BARMAN
2 % ROLL: 002320601024
3 % PROBLEM 11. Spearman's Rank Correlation
4
5
6 clc, clearvars, close all
7
8 math_x = [43 77 64 96 48 35 86 71];
9 phys_y = [36 68 49 79 50 41 82 65];
10 n = length(math_x);
11
12 R_x = zeros(1, n);
13 R_y = zeros(1, n);
14
15 for i = 1:n
16     [valx, idx] = max(math_x);
17     math_x(idx) = -Inf;
18     R_x(idx) = i;
19
20     [valy, idx] = max(phys_y);
21     phys_y(idx) = -Inf;
22     R_y(idx) = i;
23 end
24
25 d_sq = (R_x - R_y) .^ 2;
26 d_sq_sum = sum(d_sq);
27
28 sp_num = 6 * d_sq_sum;
29 sp_denom = n * ((n ^ 2) - 1);
30
31 sp = 1 - (sp_num / sp_denom);
32
33 fprintf('The Spearman Rank Correlation is %.4f\n', sp);
34
35
36
37 % ===== OUTPUT =====
38
39 % The Spearman Rank Correlation is 0.9286
40
41 % =====
```

