

```
1 % NAME: ADITYA BARMAN
2 % ROLL: 002320601024
3 % PROBLEM 4. Variance with Frequency
4
5
6 clc, clearvars, close all
7
8 f = [15, 20, 30, 18, 12, 5];
9 f_total = 0;
10 f_m_total = 0;
11
12 up_bd = [23, 28, 33, 38, 43, 48];
13 lw_bd = [19, 24, 29, 34, 39, 44];
14 midpts = ((up_bd + lw_bd)/2);
15 f_m = f .* midpts;
16
17 for i = 1:6
18     f_total = f_total + f(i);
19     f_m_total = f_m_total + f_m(i);
20 end
21
22 mean_value = (f_m_total/f_total);
23
24 midpt_x = zeros(1, 6);
25
26 for j = 1:6
27     m_sub_x = (midpts(j) - mean_value);
28     midpt_x(j) = m_sub_x;
29 end
30
31 midpt_x_sq = midpt_x .* midpt_x;
32 f_m_x = zeros(1, 6);
33
34 for k = 1:6
35     f_m_x_val = f(k)*midpt_x_sq(k);
36     f_m_x(k) = f_m_x_val;
37 end
38
39 f_m_x_total = 0;
40
41 for z = 1:6
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42     f_m_x_total = f_m_x_total + f_m_x(z);
43 end
44
45 variance = (f_m_x_total/f_total);
46 fprintf('Variance of the data is: %.4f\n', variance);
47
48
49 % ===== OUTPUT =====
50
51 % Variance of the data is: 47.6275
52
53 % =====
```