**OUTPUT**

BFS order: 0 1 2 3 4 5 6

Node 0 has been visited

Node 1 has been visited

Node 2 has been visited

Node 3 has been visited

Node 4 has been visited

Node 5 has been visited

Node 6 has been visited

DFS order: 0 2 6 5 1 4 3

Node 0 has been visited

Node 1 has been visited

Node 2 has been visited

Node 3 has been visited

Node 4 has been visited

Node 5 has been visited

Node 6 has been visited

**OUTPUT**

Sequential Bubble Sort

Time taken: 0.454162 seconds

Parallel Bubble Sort

Time taken: 0.21216 seconds

Sequential Merge Sort

Time taken: 0.00582216 seconds

Parallel Merge Sort

Time taken: 0.0118202 seconds

**OUTPUT**

Enter the size of the vector: 10

Enter the values of the vector:

3

7

1

23

34

5

123

67

78

88

Min value: 1

Max value: 123

Sum: 429

Average: 42.9

Time taken: 0ms

**OUTPUT**

**Vector addition**

Vector a: 65 11 52 43 12 59 51 80 13 79 70 21 44 51 97 68 83 57 5 69 14 66 39 86 59 72 71 95 69 0 43 33 51 13 94 74 64 26 39 59 81 31 28 20 77 19 92 51 95 0 51 2 19 22 92 12 16 30 74 45 27 75 70 15 95 59 94 14 42 75 22 64 83 35 1 12 97 99 18 37 83 11 62 95 66 96 62 78 59 54 46 92 57 15 58 92 0 23 33 72

Vector b: 38 42 73 34 10 97 58 20 60 68 2 13 24 32 45 15 79 35 52 17 29 65 98 4 17 81 45 16 98 18 20 78 42 56 35 8 40 55 64 50 83 4 78 49 72 72 53 44 16 42 26 67 28 10 81 25 43 44 2 3 65 19 78 17 16 46 14 65 88 87 87 38 46 9 80 28 39 67 15 65 48 29 77 57 22 88 12 45 13 12 18 95 91 27 52 93 56 15 70 51

Vector c: 103 53 125 77 22 156 109 100 73 147 72 34 68 83 142 83 162 92 57 86 43 131 137 90 76 153 116 111 167 18 63 111 93 69 129 82 104 81 103 109 164 35 106 69 149 91 145 95 111 42 77 69 47 32 173 37 59 74 76 48 92 94 148 32 111 105 108 79 130 162 109 102 129 44 81 40 136 166 33 102 131 40 139 152 88 184 74 123 72 66 64 187 148 42 110 185 56 38 103 123

**Matrix multiplication**

Result matrix:

5 0 0 9

1 6 5 5

6 3 2 3

1 5 7 9

Result matrix:

2 0 8 4

9 1 0 6

2 4 0 7

7 2 7 2

Result matrix:

73 18 103 38

101 36 43 85

64 17 69 62

124 51 71 101

**OUTPUT**

Enter number of database entries: 4

Enter database entry #1:

ID: 2

Name: rashika

Age: 22

Enter database entry #2:

ID: 4

Name: payal

Age: 19

Enter database entry #3:

ID: 3

Name: dev

Age: 23

Enter database entry #4:

ID: 1

Name: kishore

Age: 12

Enter ID of entry to delete: 3

Enter ID of entry to update: 4

Enter updated name: ashu

Enter updated age: 22

Enter ID of entry to retrieve: 4

Name: ashu, Age: 22