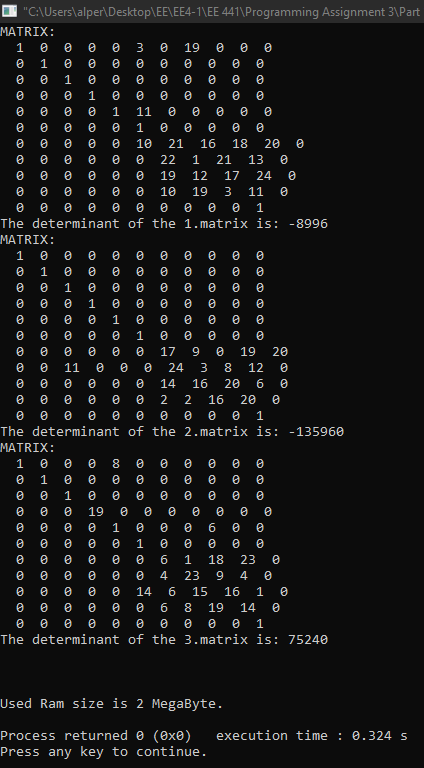
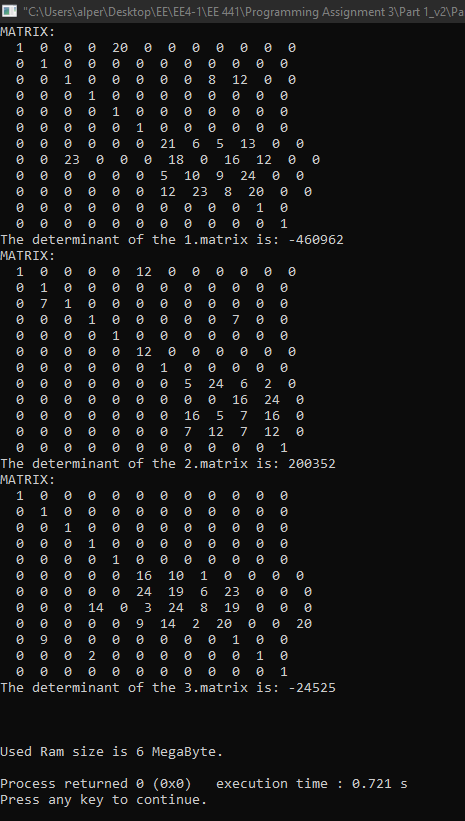
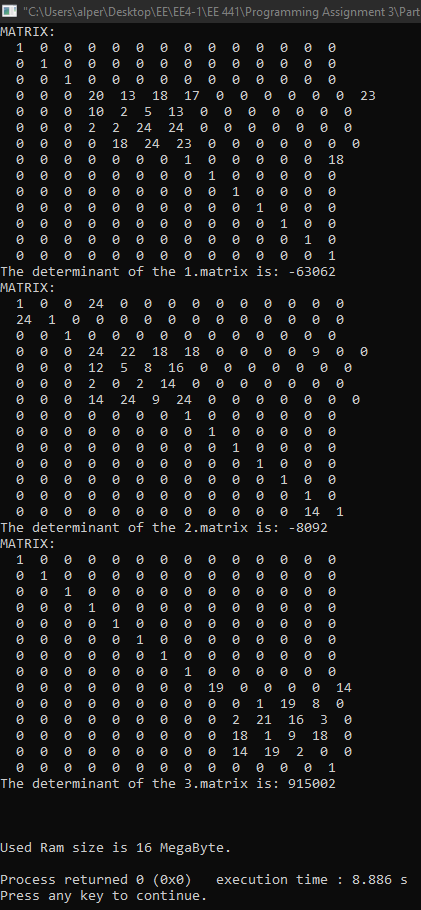
Part-1

11x11 12x12 13x13

  Shape, arrow

Description automatically generated

14x14 15x15

 Shape, arrow

Description automatically generated

Part-2

11x11 12x12 13x13

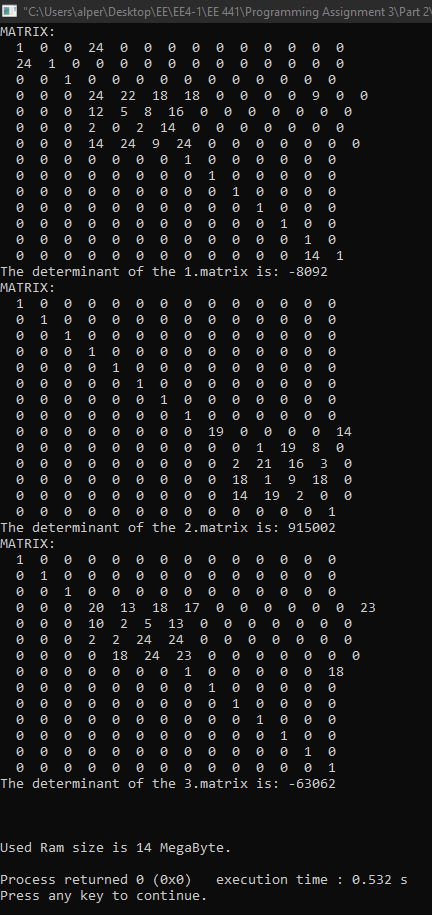
Shape, arrow

Description automatically generated with medium confidence Shape, arrow

Description automatically generated Shape

Description automatically generated with medium confidence

14x14 15x15

 A picture containing background pattern

Description automatically generated

Part-3

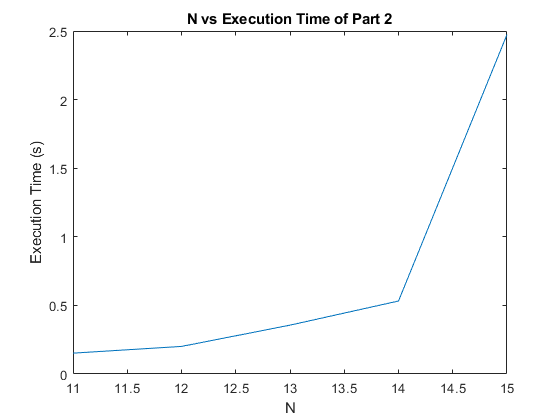
Chart, line chart

Description automatically generatedChart, line chart

Description automatically generated

In part 1, while ram usage increases linearly, we cannot say the same thing for execution time. After N=12, since reaching the nodes of the tree is getting harder, execution time becomes increasing logarithmically.

Chart, line chart

Description automatically generated

In part 2, while ram usage increases linearly, we cannot say the same thing for execution time in this part too. After N=14, since Hash Table is wholly filled, more members cannot be added, so the execution time increases logarithmically.