## 1. RIP (Задание А + Задание Б)

```
eartser@eartser:~/Learning/comp-networks/lab12/RIP$ python3 main.py graph.json
Final state of router 153.122.200.4:
[Source IP]          [Destination IP]     [Next Hop]          Metric
153.122.200.4        77.176.137.211       77.176.137.211          1
153.122.200.4        38.254.60.167        38.254.60.167           1
153.122.200.4        14.184.212.226       77.176.137.211          2
153.122.200.4        210.198.84.207       38.254.60.167           2
153.122.200.4        58.145.154.236       77.176.137.211          2
153.122.200.4        229.76.15.78         38.254.60.167           2

Final state of router 77.176.137.211:
[Source IP]          [Destination IP]     [Next Hop]          Metric
77.176.137.211       153.122.200.4        153.122.200.4           1
77.176.137.211       14.184.212.226       14.184.212.226          1
77.176.137.211       58.145.154.236       58.145.154.236          1
77.176.137.211       38.254.60.167        153.122.200.4           2
77.176.137.211       210.198.84.207       14.184.212.226          2
77.176.137.211       229.76.15.78         153.122.200.4           3

Final state of router 38.254.60.167:
[Source IP]          [Destination IP]     [Next Hop]          Metric
38.254.60.167        153.122.200.4        153.122.200.4           1
38.254.60.167        210.198.84.207       210.198.84.207          1
38.254.60.167        58.145.154.236       58.145.154.236          1
38.254.60.167        229.76.15.78         229.76.15.78            1
38.254.60.167        77.176.137.211       153.122.200.4           2
38.254.60.167        14.184.212.226       210.198.84.207          2

Final state of router 14.184.212.226:
[Source IP]          [Destination IP]     [Next Hop]          Metric
14.184.212.226       77.176.137.211       77.176.137.211          1
14.184.212.226       210.198.84.207       210.198.84.207          1
14.184.212.226       58.145.154.236       58.145.154.236          1
14.184.212.226       153.122.200.4        77.176.137.211          2
14.184.212.226       38.254.60.167        210.198.84.207          2
14.184.212.226       229.76.15.78         210.198.84.207          2

Final state of router 210.198.84.207:
[Source IP]          [Destination IP]     [Next Hop]          Metric
210.198.84.207       38.254.60.167        38.254.60.167           1
210.198.84.207       14.184.212.226       14.184.212.226          1
210.198.84.207       229.76.15.78         229.76.15.78            1
210.198.84.207       153.122.200.4        38.254.60.167           2
210.198.84.207       77.176.137.211       14.184.212.226          2
210.198.84.207       58.145.154.236       38.254.60.167           2

Final state of router 58.145.154.236:
[Source IP]          [Destination IP]     [Next Hop]          Metric
58.145.154.236       77.176.137.211       77.176.137.211          1
```

```
58.145.154.236       38.254.60.167        38.254.60.167               1
58.145.154.236       14.184.212.226       14.184.212.226              1
58.145.154.236       153.122.200.4        77.176.137.211              2
58.145.154.236       210.198.84.207       38.254.60.167               2
58.145.154.236       229.76.15.78         38.254.60.167               2


Final state of router 229.76.15.78:
[Source IP]          [Destination IP]     [Next Hop]             Metric
229.76.15.78         38.254.60.167        38.254.60.167               1
229.76.15.78         210.198.84.207       210.198.84.207              1
229.76.15.78         153.122.200.4        38.254.60.167               2
229.76.15.78         77.176.137.211       38.254.60.167               3
229.76.15.78         14.184.212.226       210.198.84.207              2
229.76.15.78         58.145.154.236       38.254.60.167               2
```

**eartser@eartser:~/Learning/comp-networks/lab12/RIP$ python3 main.py graph.json
--mode=simulation**

```
Simulation step 1 of router 153.122.200.4:
[Source IP]          [Destination IP]     [Next Hop]             Metric
153.122.200.4        77.176.137.211       77.176.137.211              1
153.122.200.4        38.254.60.167        38.254.60.167               1
153.122.200.4        14.184.212.226       77.176.137.211              2
153.122.200.4        210.198.84.207       38.254.60.167               2
153.122.200.4        58.145.154.236       77.176.137.211              2
153.122.200.4        229.76.15.78         38.254.60.167               2


Simulation step 1 of router 77.176.137.211:
[Source IP]          [Destination IP]     [Next Hop]             Metric
77.176.137.211       153.122.200.4        153.122.200.4               1
77.176.137.211       14.184.212.226       14.184.212.226              1
77.176.137.211       58.145.154.236       58.145.154.236              1
77.176.137.211       38.254.60.167        153.122.200.4               2
77.176.137.211       210.198.84.207       14.184.212.226              2


Simulation step 1 of router 38.254.60.167:
[Source IP]          [Destination IP]     [Next Hop]             Metric
38.254.60.167        153.122.200.4        153.122.200.4               1
38.254.60.167        210.198.84.207       210.198.84.207              1
38.254.60.167        58.145.154.236       58.145.154.236              1
38.254.60.167        229.76.15.78         229.76.15.78                1
38.254.60.167        77.176.137.211       153.122.200.4               2
38.254.60.167        14.184.212.226       210.198.84.207              2


Simulation step 1 of router 14.184.212.226:
[Source IP]          [Destination IP]     [Next Hop]             Metric
14.184.212.226       77.176.137.211       77.176.137.211              1
14.184.212.226       210.198.84.207       210.198.84.207              1
14.184.212.226       58.145.154.236       58.145.154.236              1
14.184.212.226       153.122.200.4        77.176.137.211              2
14.184.212.226       38.254.60.167        210.198.84.207              2
14.184.212.226       229.76.15.78         210.198.84.207              2
```

```
Simulation step 1 of router 210.198.84.207:
[Source IP]            [Destination IP]        [Next Hop]              Metric
210.198.84.207         38.254.60.167           38.254.60.167               1
210.198.84.207         14.184.212.226          14.184.212.226              1
210.198.84.207         229.76.15.78            229.76.15.78                1
210.198.84.207         153.122.200.4           38.254.60.167               2
210.198.84.207         77.176.137.211          14.184.212.226              2
210.198.84.207         58.145.154.236          38.254.60.167               2

Simulation step 1 of router 58.145.154.236:
[Source IP]            [Destination IP]        [Next Hop]              Metric
58.145.154.236         77.176.137.211          77.176.137.211              1
58.145.154.236         38.254.60.167           38.254.60.167               1
58.145.154.236         14.184.212.226          14.184.212.226              1
58.145.154.236         153.122.200.4           77.176.137.211              2
58.145.154.236         210.198.84.207          38.254.60.167               2
58.145.154.236         229.76.15.78            38.254.60.167               2

Simulation step 1 of router 229.76.15.78:
[Source IP]            [Destination IP]        [Next Hop]              Metric
229.76.15.78           38.254.60.167           38.254.60.167               1
229.76.15.78           210.198.84.207          210.198.84.207              1
229.76.15.78           153.122.200.4           38.254.60.167               2
229.76.15.78           77.176.137.211          38.254.60.167               3
229.76.15.78           14.184.212.226          210.198.84.207              2
229.76.15.78           58.145.154.236          38.254.60.167               2

Simulation step 2 of router 153.122.200.4:
[Source IP]            [Destination IP]        [Next Hop]              Metric
153.122.200.4          77.176.137.211          77.176.137.211              1
153.122.200.4          38.254.60.167           38.254.60.167               1
153.122.200.4          14.184.212.226          77.176.137.211              2
153.122.200.4          210.198.84.207          38.254.60.167               2
153.122.200.4          58.145.154.236          77.176.137.211              2
153.122.200.4          229.76.15.78            38.254.60.167               2

Simulation step 2 of router 77.176.137.211:
[Source IP]            [Destination IP]        [Next Hop]              Metric
77.176.137.211         153.122.200.4           153.122.200.4               1
77.176.137.211         14.184.212.226          14.184.212.226              1
77.176.137.211         58.145.154.236          58.145.154.236              1
77.176.137.211         38.254.60.167           153.122.200.4               2
77.176.137.211         210.198.84.207          14.184.212.226              2
77.176.137.211         229.76.15.78            153.122.200.4               3

Simulation step 2 of router 38.254.60.167:
[Source IP]            [Destination IP]        [Next Hop]              Metric
38.254.60.167          153.122.200.4           153.122.200.4               1
38.254.60.167          210.198.84.207          210.198.84.207              1
38.254.60.167          58.145.154.236          58.145.154.236              1
```

```
38.254.60.167          229.76.15.78           229.76.15.78                   1
38.254.60.167          77.176.137.211         153.122.200.4                  2
38.254.60.167          14.184.212.226         210.198.84.207                 2


Simulation step 2 of router 14.184.212.226:
[Source IP]            [Destination IP]       [Next Hop]              Metric
14.184.212.226         77.176.137.211         77.176.137.211                 1
14.184.212.226         210.198.84.207         210.198.84.207                 1
14.184.212.226         58.145.154.236         58.145.154.236                 1
14.184.212.226         153.122.200.4          77.176.137.211                 2
14.184.212.226         38.254.60.167          210.198.84.207                 2
14.184.212.226         229.76.15.78           210.198.84.207                 2


Simulation step 2 of router 210.198.84.207:
[Source IP]            [Destination IP]       [Next Hop]              Metric
210.198.84.207         38.254.60.167          38.254.60.167                  1
210.198.84.207         14.184.212.226         14.184.212.226                 1
210.198.84.207         229.76.15.78           229.76.15.78                   1
210.198.84.207         153.122.200.4          38.254.60.167                  2
210.198.84.207         77.176.137.211         14.184.212.226                 2
210.198.84.207         58.145.154.236         38.254.60.167                  2


Simulation step 2 of router 58.145.154.236:
[Source IP]            [Destination IP]       [Next Hop]              Metric
58.145.154.236         77.176.137.211         77.176.137.211                 1
58.145.154.236         38.254.60.167          38.254.60.167                  1
58.145.154.236         14.184.212.226         14.184.212.226                 1
58.145.154.236         153.122.200.4          77.176.137.211                 2
58.145.154.236         210.198.84.207         38.254.60.167                  2
58.145.154.236         229.76.15.78           38.254.60.167                  2


Simulation step 2 of router 229.76.15.78:
[Source IP]            [Destination IP]       [Next Hop]              Metric
229.76.15.78           38.254.60.167          38.254.60.167                  1
229.76.15.78           210.198.84.207         210.198.84.207                 1
229.76.15.78           153.122.200.4          38.254.60.167                  2
229.76.15.78           77.176.137.211         38.254.60.167                  3
229.76.15.78           14.184.212.226         210.198.84.207                 2
229.76.15.78           58.145.154.236         38.254.60.167                  2


Simulation step 3 of router 153.122.200.4:
[Source IP]            [Destination IP]       [Next Hop]              Metric
153.122.200.4          77.176.137.211         77.176.137.211                 1
153.122.200.4          38.254.60.167          38.254.60.167                  1
153.122.200.4          14.184.212.226         77.176.137.211                 2
153.122.200.4          210.198.84.207         38.254.60.167                  2
153.122.200.4          58.145.154.236         77.176.137.211                 2
153.122.200.4          229.76.15.78           38.254.60.167                  2


Simulation step 3 of router 77.176.137.211:
[Source IP]            [Destination IP]       [Next Hop]              Metric
```

```
77.176.137.211        153.122.200.4         153.122.200.4              1
77.176.137.211        14.184.212.226        14.184.212.226             1
77.176.137.211        58.145.154.236        58.145.154.236             1
77.176.137.211        38.254.60.167         153.122.200.4              2
77.176.137.211        210.198.84.207        14.184.212.226             2
77.176.137.211        229.76.15.78          153.122.200.4              3

Simulation step 3 of router 38.254.60.167:
[Source IP]           [Destination IP]      [Next Hop]              Metric
38.254.60.167         153.122.200.4         153.122.200.4              1
38.254.60.167         210.198.84.207        210.198.84.207             1
38.254.60.167         58.145.154.236        58.145.154.236             1
38.254.60.167         229.76.15.78          229.76.15.78               1
38.254.60.167         77.176.137.211        153.122.200.4              2
38.254.60.167         14.184.212.226        210.198.84.207             2

Simulation step 3 of router 14.184.212.226:
[Source IP]           [Destination IP]      [Next Hop]              Metric
14.184.212.226        77.176.137.211        77.176.137.211             1
14.184.212.226        210.198.84.207        210.198.84.207             1
14.184.212.226        58.145.154.236        58.145.154.236             1
14.184.212.226        153.122.200.4         77.176.137.211             2
14.184.212.226        38.254.60.167         210.198.84.207             2
14.184.212.226        229.76.15.78          210.198.84.207             2

Simulation step 3 of router 210.198.84.207:
[Source IP]           [Destination IP]      [Next Hop]              Metric
210.198.84.207        38.254.60.167         38.254.60.167              1
210.198.84.207        14.184.212.226        14.184.212.226             1
210.198.84.207        229.76.15.78          229.76.15.78               1
210.198.84.207        153.122.200.4         38.254.60.167              2
210.198.84.207        77.176.137.211        14.184.212.226             2
210.198.84.207        58.145.154.236        38.254.60.167              2

Simulation step 3 of router 58.145.154.236:
[Source IP]           [Destination IP]      [Next Hop]              Metric
58.145.154.236        77.176.137.211        77.176.137.211             1
58.145.154.236        38.254.60.167         38.254.60.167              1
58.145.154.236        14.184.212.226        14.184.212.226             1
58.145.154.236        153.122.200.4         77.176.137.211             2
58.145.154.236        210.198.84.207        38.254.60.167              2
58.145.154.236        229.76.15.78          38.254.60.167              2

Simulation step 3 of router 229.76.15.78:
[Source IP]           [Destination IP]      [Next Hop]              Metric
229.76.15.78          38.254.60.167         38.254.60.167              1
229.76.15.78          210.198.84.207        210.198.84.207             1
229.76.15.78          153.122.200.4         38.254.60.167              2
229.76.15.78          77.176.137.211        38.254.60.167              3
229.76.15.78          14.184.212.226        210.198.84.207             2
229.76.15.78          58.145.154.236        38.254.60.167              2
```

```
Final state of router 153.122.200.4:
[Source IP]            [Destination IP]        [Next Hop]           Metric
153.122.200.4          77.176.137.211          77.176.137.211           1
153.122.200.4          38.254.60.167           38.254.60.167            1
153.122.200.4          14.184.212.226          77.176.137.211           2
153.122.200.4          210.198.84.207          38.254.60.167            2
153.122.200.4          58.145.154.236          77.176.137.211           2
153.122.200.4          229.76.15.78            38.254.60.167            2

Final state of router 77.176.137.211:
[Source IP]            [Destination IP]        [Next Hop]           Metric
77.176.137.211         153.122.200.4           153.122.200.4            1
77.176.137.211         14.184.212.226          14.184.212.226           1
77.176.137.211         58.145.154.236          58.145.154.236           1
77.176.137.211         38.254.60.167           153.122.200.4            2
77.176.137.211         210.198.84.207          14.184.212.226           2
77.176.137.211         229.76.15.78            153.122.200.4            3

Final state of router 38.254.60.167:
[Source IP]            [Destination IP]        [Next Hop]           Metric
38.254.60.167          153.122.200.4           153.122.200.4            1
38.254.60.167          210.198.84.207          210.198.84.207           1
38.254.60.167          58.145.154.236          58.145.154.236           1
38.254.60.167          229.76.15.78            229.76.15.78             1
38.254.60.167          77.176.137.211          153.122.200.4            2
38.254.60.167          14.184.212.226          210.198.84.207           2

Final state of router 14.184.212.226:
[Source IP]            [Destination IP]        [Next Hop]           Metric
14.184.212.226         77.176.137.211          77.176.137.211           1
14.184.212.226         210.198.84.207          210.198.84.207           1
14.184.212.226         58.145.154.236          58.145.154.236           1
14.184.212.226         153.122.200.4           77.176.137.211           2
14.184.212.226         38.254.60.167           210.198.84.207           2
14.184.212.226         229.76.15.78            210.198.84.207           2

Final state of router 210.198.84.207:
[Source IP]            [Destination IP]        [Next Hop]           Metric
210.198.84.207         38.254.60.167           38.254.60.167            1
210.198.84.207         14.184.212.226          14.184.212.226           1
210.198.84.207         229.76.15.78            229.76.15.78             1
210.198.84.207         153.122.200.4           38.254.60.167            2
210.198.84.207         77.176.137.211          14.184.212.226           2
210.198.84.207         58.145.154.236          38.254.60.167            2

Final state of router 58.145.154.236:
[Source IP]            [Destination IP]        [Next Hop]           Metric
58.145.154.236         77.176.137.211          77.176.137.211           1
58.145.154.236         38.254.60.167           38.254.60.167            1
58.145.154.236         14.184.212.226          14.184.212.226           1
```

```
58.145.154.236        153.122.200.4              77.176.137.211               2
58.145.154.236        210.198.84.207             38.254.60.167                2
58.145.154.236        229.76.15.78               38.254.60.167                2


Final state of router 229.76.15.78:
[Source IP]           [Destination IP]          [Next Hop]              Metric
229.76.15.78          38.254.60.167             38.254.60.167                1
229.76.15.78          210.198.84.207            210.198.84.207               1
229.76.15.78          153.122.200.4             38.254.60.167                2
229.76.15.78          77.176.137.211            38.254.60.167                3
229.76.15.78          14.184.212.226            210.198.84.207               2
229.76.15.78          58.145.154.236            38.254.60.167                2
```

## 3. Транслятор портов