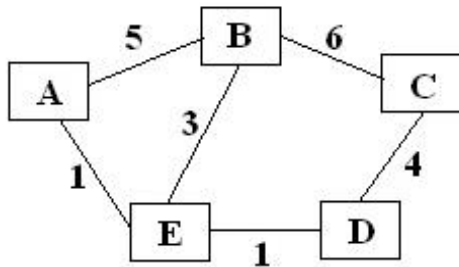
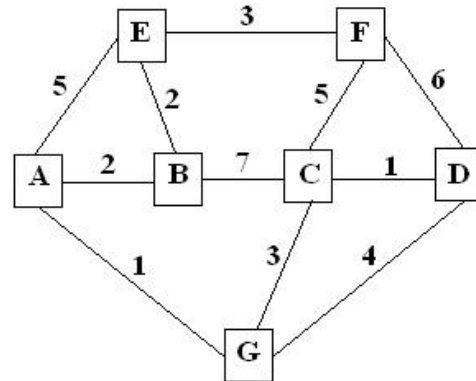


1. Koristeći Dijkstra algoritam odrediti najkraću putanju od čvora A do svih mrežnih čvorišta, za sledeće mrežne topologije:

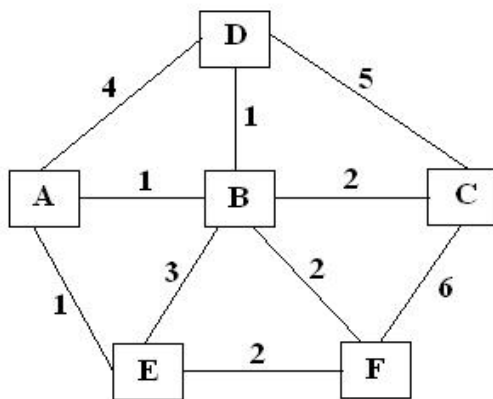
a)



c)



b)



Rešenje:

a)

| Korak | N' | D(B), P(B) | D(C),P(C) | D(D),P(D) | D(E),P(E) |
|-------|-------|-------------|-------------|-------------|-------------|
| 0 | A | 5, A | ∞ | ∞ | 1, A |
| 1 | AE | 4, E | ∞ | 2, E | |
| 2 | AED | 4, E | 6, D | | |
| 3 | AEDB | | 6, D | | |
| 4 | AEDBC | | | | |

b)

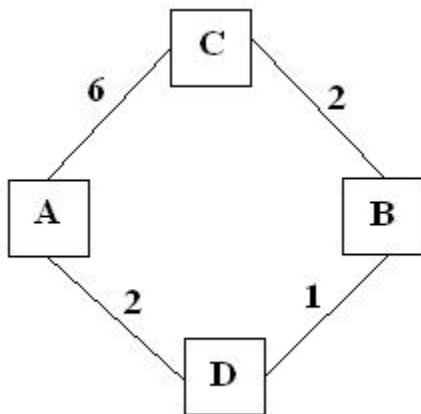
| Korak | N' | D(B), P(B) | D(C),P(C) | D(D),P(D) | D(E),P(E) | D(F),P(F) |
|-------|--------|-------------|-------------|-------------|-------------|-------------|
| 0 | A | 1, A | ∞ | 4, A | 1, A | ∞ |
| 1 | AB | | 3, B | 2, B | 1, A | 3, B |
| 2 | ABE | | 3, B | 2, B | | 3, B |
| 3 | ABED | | 3, B | | | 3, B |
| 4 | ABEDC | | | | | 3, B |
| 5 | ABEDCF | | | | | |

c)

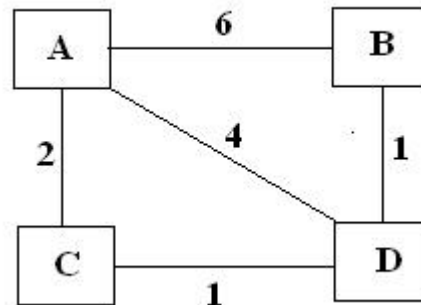
| Korak | N' | D(B), P(B) | D(C),P(C) | D(D),P(D) | D(E),P(E) | D(F),P(F) | D(G),P(G) |
|-------|---------|-------------|-------------|-------------|-------------|-------------|-------------|
| 0 | A | 2, A | ∞ | ∞ | 5, A | ∞ | 1, A |
| 1 | AG | 2, A | 4, G | 5, G | 5, A | ∞ | |
| 2 | AGB | | 4, G | 5, G | 4, B | ∞ | |
| 3 | AGBC | | | 5, G | 4, B | 9, C | |
| 4 | AGBCE | | | 5, G | | 7, E | |
| 5 | AGBCED | | | | | 7, E | |
| 6 | AGBCEDF | | | | | | |

7. Koristeći *Distance vector* algoritam odrediti tabele rutiranja za svaki čvor, za sledeće mrežne topologije:

a)



b)



Rešenje:

a)

Tabela za čvor A:

| | A | B | C | D |
|---|----------|----------|----------|----------|
| A | 0 | ∞ | 6 | 2 |
| C | ∞ | ∞ | ∞ | ∞ |
| D | ∞ | ∞ | ∞ | ∞ |

| | A | B | C | D |
|---|---|---|----------|----------|
| A | 0 | 3 | 6 | 2 |
| C | 6 | 2 | 0 | ∞ |
| D | 2 | 1 | ∞ | 0 |

| | A | B | C | D |
|---|---|---|---|---|
| A | 0 | 3 | 5 | 2 |
| C | 6 | 2 | 0 | 3 |
| D | 2 | 1 | 3 | 0 |

| | A | B | C | D |
|---|---|---|---|---|
| A | 0 | 3 | 5 | 2 |
| C | 5 | 2 | 0 | 3 |
| D | 2 | 1 | 3 | 0 |

Tabela za čvor B:

| | A | B | C | D |
|---|----------|----------|----------|----------|
| B | ∞ | 0 | 2 | 1 |
| C | ∞ | ∞ | ∞ | ∞ |
| D | ∞ | ∞ | ∞ | ∞ |

| | A | B | C | D |
|---|---|---|----------|----------|
| B | 3 | 0 | 2 | 1 |
| C | 6 | 2 | 0 | ∞ |
| D | 2 | 1 | ∞ | 0 |

| | A | B | C | D |
|---|---|---|---|---|
| B | 3 | 0 | 2 | 1 |
| C | 6 | 2 | 0 | 3 |
| D | 2 | 1 | 3 | 0 |

| | A | B | C | D |
|---|---|---|---|---|
| B | 3 | 0 | 2 | 1 |
| C | 5 | 2 | 0 | 3 |
| D | 2 | 1 | 3 | 0 |

Tabela za čvor C:

| | A | B | C | D |
|---|----------|----------|----------|----------|
| C | 6 | 2 | 0 | ∞ |
| A | ∞ | ∞ | ∞ | ∞ |
| B | ∞ | ∞ | ∞ | ∞ |

| | A | B | C | D |
|---|----------|----------|---|---|
| C | 6 | 2 | 0 | 3 |
| A | 0 | ∞ | 6 | 2 |
| B | ∞ | 0 | 2 | 1 |

| | A | B | C | D |
|---|---|---|---|---|
| C | 5 | 2 | 0 | 3 |
| A | 0 | 3 | 6 | 2 |
| B | 3 | 0 | 2 | 1 |

| | A | B | C | D |
|---|---|---|---|---|
| C | 5 | 2 | 0 | 3 |
| A | 0 | 3 | 5 | 2 |
| B | 3 | 0 | 2 | 1 |

Tabela za čvor D:

| | A | B | C | D |
|---|----------|----------|----------|----------|
| D | 2 | 1 | ∞ | 0 |
| A | ∞ | ∞ | ∞ | ∞ |
| B | ∞ | ∞ | ∞ | ∞ |

| | A | B | C | D |
|---|----------|----------|---|---|
| D | 2 | 1 | 3 | 0 |
| A | 0 | ∞ | 6 | 2 |
| B | ∞ | 0 | 2 | 1 |

| | A | B | C | D |
|---|---|---|---|---|
| D | 2 | 1 | 3 | 0 |
| A | 0 | 3 | 6 | 2 |
| B | 3 | 0 | 2 | 1 |

| | A | B | C | D |
|---|---|---|---|---|
| D | 2 | 1 | 3 | 0 |
| A | 0 | 3 | 5 | 2 |
| B | 3 | 0 | 2 | 1 |