Assignment 6- Routing

1.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Step** | **SPT(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)** | **D(h), P(h)** |
| **0** | A | 1, A | ~ | ~ | ~ | ~ | ~ | 8, A |
| **1** | AB |  | 9, B | ~ | ~ | 5, B | 6, B | 8, A |
| **2** | ABF |  | 9, B | ~ | 14, F |  | 6, B | 8, A |
| **3** | ABFG |  | 9, B | 12, G | 14, F |  |  | 8, A |
| **4** | ABFGH |  | 9, B | 12, G | 14, F |  |  |  |
| **5** | ABFGHC |  |  | 10, G | 14, F |  |  |  |
| **6** | ABFGHCD |  |  |  | 14, F |  |  |  |
| **7** | ABFGHCDE |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |

2.

|  |  |  |
| --- | --- | --- |
| **DA()** | **B** | **H** |
| **B** | 1 | 8 |
| **C** | ~ | ~ |
| **D** | ~ | ~ |
| **E** | ~ | ~ |
| **F** | ~ | ~ |
| **G** | ~ | ~ |
| **H** | ~ | 8 |

|  |  |  |
| --- | --- | --- |
| **DA()** | **B** | **H** |
| **B** | 1 | 8 |
| **C** | 9 | ~ |
| **D** | ~ | ~ |
| **E** | ~ | ~ |
| **F** | 5 | ~ |
| **G** | 6 | 9 |
| **H** | ~ | 8 |

|  |  |  |
| --- | --- | --- |
| **DA()** | **B** | **H** |
| **B** | 1 | 8 |
| **C** | 9 | 14 |
| **D** | 10 | 14 |
| **E** | 14 | 20 |
| **F** | 5 | 11 |
| **G** | 6 | 9 |
| **H** | 7 | 8 |

3.

B:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Step** | **SPT(N)** | **D(a), P(a)** | **D(c), P(c)** | **D(e), P(e)** |
| **0** | B | ~ | 1, B | 10, B |
| **1** | BC | ~ |  | 10, B |
| **2** | BCE | 25, E |  |  |
| **3** | BCEA |  |  |  |
|  |  |  |  |  |

C**:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Step** | **SPT(N)** | **D(a), P(a)** | **D(b), P(b)** | **D(e), P(e)** |
| **0** | C | ~ | 1, C | 15, C |
| **1** | CB | 2, B |  | 11, B |
| **2** | CBA |  |  | 11, B |
| **3** | CBAE |  |  |  |
|  |  |  |  |  |

E:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Step** | **SPT(N)** | **D(a), P(a)** | **D(b), P(b)** | **D(c), P(c)** |
| **0** | E | 15, E | 10, E | 15, E |
| **1** | EB | 11, B |  | 11, B |
| **2** | EBA |  |  | 11, B |
| **3** | EBAC |  |  |  |
|  |  |  |  |  |

If a packet is starting at E and it's destination is A, it will first go from E to B according to the table above (the path given by Step 2). B will see that the destination is A and according to it's table, in order to get to A, the packet needs to E first (as the path in Step 3 shows). The packet will get bounced back to E, but E's table tells it that it needs to send the packet to B for it to get to A via the shortest path, hence E will send the packet back to B. This will continue and the packet will just keep bouncing back between B and E.