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~/Dropbox/Documents/Terms/2019-09 - Fall/CSCI255-Fall2019/Lab9-Graph Shortest Path
./a.out
This is the Weighted Graph Demo

      1    2    3    4    5    6
   1  0    0    1    0    0    0
   2  3    0    5    0    0    0
   3  0    0    0    2    4    0
   4  5    0    0    0    0    5
   5  0    0    0    0    0    1
   6  0    0    0    0    0    0


Start: 1
Destination: 6

Adding node 1 to the solved set S={1 }
Adding node 3 to the solved set S={1 3 }
Updating labels for node 4
        distance: 2147483647 -> 3
        parent:   -1 -> 3
        Labelled Nodes:
            1(d:0, p:-1) 2(d:2147483647, p:-1) 3(d:1, p:1)
            4(d:3, p:3) 5(d:2147483647, p:-1) 6(d:2147483647, p:-1)
            7(d:2147483647, p:-1) 8(d:2147483647, p:-1) 9(d:2147483647, p:-1)
            10(d:2147483647, p:-1) 11(d:2147483647, p:-1) 12(d:2147483647, p:-1)
            13(d:2147483647, p:-1) 14(d:2147483647, p:-1) 15(d:2147483647, p:-1)
            16(d:2147483647, p:-1) 17(d:2147483647, p:-1) 18(d:2147483647, p:-1)
            19(d:2147483647, p:-1) 20(d:2147483647, p:-1) 21(d:2147483647, p:-1)
            22(d:2147483647, p:-1) 23(d:2147483647, p:-1) 24(d:2147483647, p:-1)
            25(d:2147483647, p:-1) 26(d:2147483647, p:-1) 27(d:2147483647, p:-1)
            28(d:2147483647, p:-1) 29(d:2147483647, p:-1) 30(d:2147483647, p:-1)
            31(d:2147483647, p:-1) 32(d:2147483647, p:-1) 33(d:2147483647, p:-1)
            34(d:2147483647, p:-1) 35(d:2147483647, p:-1) 36(d:2147483647, p:-1)
            37(d:2147483647, p:-1) 38(d:2147483647, p:-1) 39(d:2147483647, p:-1)
            40(d:2147483647, p:-1) 41(d:2147483647, p:-1) 42(d:2147483647, p:-1)
            43(d:2147483647, p:-1) 44(d:2147483647, p:-1) 45(d:2147483647, p:-1)
            46(d:2147483647, p:-1) 47(d:2147483647, p:-1) 48(d:2147483647, p:-1)
            49(d:2147483647, p:-1) 50(d:2147483647, p:-1) 51(d:2147483647, p:-1)
            52(d:2147483647, p:-1) 53(d:2147483647, p:-1) 54(d:2147483647, p:-1)
            55(d:2147483647, p:-1) 56(d:2147483647, p:-1) 57(d:2147483647, p:-1)
            58(d:2147483647, p:-1) 59(d:2147483647, p:-1) 60(d:2147483647, p:-1)
            61(d:2147483647, p:-1) 62(d:2147483647, p:-1) 63(d:2147483647, p:-1)
            64(d:2147483647, p:-1) 65(d:2147483647, p:-1) 66(d:2147483647, p:-1)
            67(d:2147483647, p:-1) 68(d:2147483647, p:-1) 69(d:2147483647, p:-1)
            70(d:2147483647, p:-1) 71(d:2147483647, p:-1) 72(d:2147483647, p:-1)
            73(d:2147483647, p:-1) 74(d:2147483647, p:-1) 75(d:2147483647, p:-1)
            76(d:2147483647, p:-1) 77(d:2147483647, p:-1) 78(d:2147483647, p:-1)
            79(d:2147483647, p:-1) 80(d:2147483647, p:-1) 81(d:2147483647, p:-1)
            82(d:2147483647, p:-1) 83(d:2147483647, p:-1) 84(d:2147483647, p:-1)
            85(d:2147483647, p:-1) 86(d:2147483647, p:-1) 87(d:2147483647, p:-1)
            88(d:2147483647, p:-1) 89(d:2147483647, p:-1) 90(d:2147483647, p:-1)
            91(d:2147483647, p:-1) 92(d:2147483647, p:-1) 93(d:2147483647, p:-1)
            94(d:2147483647, p:-1) 95(d:2147483647, p:-1) 96(d:2147483647, p:-1)
            97(d:2147483647, p:-1) 98(d:2147483647, p:-1) 99(d:2147483647, p:-1)
            100(d:2147483647, p:-1)
Updating labels for node 5
        distance: 2147483647 -> 5
        parent:   -1 -> 3
        Labelled Nodes:
            1(d:0, p:-1) 2(d:2147483647, p:-1) 3(d:1, p:1)
            4(d:3, p:3) 5(d:5, p:3) 6(d:2147483647, p:-1)
            7(d:2147483647, p:-1) 8(d:2147483647, p:-1) 9(d:2147483647, p:-1)
            10(d:2147483647, p:-1) 11(d:2147483647, p:-1) 12(d:2147483647, p:-1)
            13(d:2147483647, p:-1) 14(d:2147483647, p:-1) 15(d:2147483647, p:-1)
            16(d:2147483647, p:-1) 17(d:2147483647, p:-1) 18(d:2147483647, p:-1)
            19(d:2147483647, p:-1) 20(d:2147483647, p:-1) 21(d:2147483647, p:-1)
            22(d:2147483647, p:-1) 23(d:2147483647, p:-1) 24(d:2147483647, p:-1)
            25(d:2147483647, p:-1) 26(d:2147483647, p:-1) 27(d:2147483647, p:-1)
            28(d:2147483647, p:-1) 29(d:2147483647, p:-1) 30(d:2147483647, p:-1)
            31(d:2147483647, p:-1) 32(d:2147483647, p:-1) 33(d:2147483647, p:-1)
            34(d:2147483647, p:-1) 35(d:2147483647, p:-1) 36(d:2147483647, p:-1)
            37(d:2147483647, p:-1) 38(d:2147483647, p:-1) 39(d:2147483647, p:-1)
            40(d:2147483647, p:-1) 41(d:2147483647, p:-1) 42(d:2147483647, p:-1)
            43(d:2147483647, p:-1) 44(d:2147483647, p:-1) 45(d:2147483647, p:-1)
            46(d:2147483647, p:-1) 47(d:2147483647, p:-1) 48(d:2147483647, p:-1)
            49(d:2147483647, p:-1) 50(d:2147483647, p:-1) 51(d:2147483647, p:-1)
            52(d:2147483647, p:-1) 53(d:2147483647, p:-1) 54(d:2147483647, p:-1)
            55(d:2147483647, p:-1) 56(d:2147483647, p:-1) 57(d:2147483647, p:-1)
            58(d:2147483647, p:-1) 59(d:2147483647, p:-1) 60(d:2147483647, p:-1)
            61(d:2147483647, p:-1) 62(d:2147483647, p:-1) 63(d:2147483647, p:-1)
            64(d:2147483647, p:-1) 65(d:2147483647, p:-1) 66(d:2147483647, p:-1)
            67(d:2147483647, p:-1) 68(d:2147483647, p:-1) 69(d:2147483647, p:-1)
            70(d:2147483647, p:-1) 71(d:2147483647, p:-1) 72(d:2147483647, p:-1)
            73(d:2147483647, p:-1) 74(d:2147483647, p:-1) 75(d:2147483647, p:-1)
            76(d:2147483647, p:-1) 77(d:2147483647, p:-1) 78(d:2147483647, p:-1)
            79(d:2147483647, p:-1) 80(d:2147483647, p:-1) 81(d:2147483647, p:-1)
            82(d:2147483647, p:-1) 83(d:2147483647, p:-1) 84(d:2147483647, p:-1)
            85(d:2147483647, p:-1) 86(d:2147483647, p:-1) 87(d:2147483647, p:-1)
            88(d:2147483647, p:-1) 89(d:2147483647, p:-1) 90(d:2147483647, p:-1)
            91(d:2147483647, p:-1) 92(d:2147483647, p:-1) 93(d:2147483647, p:-1)
            94(d:2147483647, p:-1) 95(d:2147483647, p:-1) 96(d:2147483647, p:-1)
            97(d:2147483647, p:-1) 98(d:2147483647, p:-1) 99(d:2147483647, p:-1)
            100(d:2147483647, p:-1)
Adding node 4 to the solved set S={1 3 4 }
Updating labels for node 6
        distance: 2147483647 -> 8
        parent:   -1 -> 4
        Labelled Nodes:
            1(d:0, p:-1) 2(d:2147483647, p:-1) 3(d:1, p:1)
            4(d:3, p:3) 5(d:5, p:3) 6(d:8, p:4)
            7(d:2147483647, p:-1) 8(d:2147483647, p:-1) 9(d:2147483647, p:-1)
            10(d:2147483647, p:-1) 11(d:2147483647, p:-1) 12(d:2147483647, p:-1)
            13(d:2147483647, p:-1) 14(d:2147483647, p:-1) 15(d:2147483647, p:-1)
            16(d:2147483647, p:-1) 17(d:2147483647, p:-1) 18(d:2147483647, p:-1)
            19(d:2147483647, p:-1) 20(d:2147483647, p:-1) 21(d:2147483647, p:-1)
            22(d:2147483647, p:-1) 23(d:2147483647, p:-1) 24(d:2147483647, p:-1)
            25(d:2147483647, p:-1) 26(d:2147483647, p:-1) 27(d:2147483647, p:-1)
            28(d:2147483647, p:-1) 29(d:2147483647, p:-1) 30(d:2147483647, p:-1)
            31(d:2147483647, p:-1) 32(d:2147483647, p:-1) 33(d:2147483647, p:-1)
            34(d:2147483647, p:-1) 35(d:2147483647, p:-1) 36(d:2147483647, p:-1)
            37(d:2147483647, p:-1) 38(d:2147483647, p:-1) 39(d:2147483647, p:-1)
            40(d:2147483647, p:-1) 41(d:2147483647, p:-1) 42(d:2147483647, p:-1)
            43(d:2147483647, p:-1) 44(d:2147483647, p:-1) 45(d:2147483647, p:-1)
            46(d:2147483647, p:-1) 47(d:2147483647, p:-1) 48(d:2147483647, p:-1)
            49(d:2147483647, p:-1) 50(d:2147483647, p:-1) 51(d:2147483647, p:-1)
            52(d:2147483647, p:-1) 53(d:2147483647, p:-1) 54(d:2147483647, p:-1)
            55(d:2147483647, p:-1) 56(d:2147483647, p:-1) 57(d:2147483647, p:-1)
            58(d:2147483647, p:-1) 59(d:2147483647, p:-1) 60(d:2147483647, p:-1)
            61(d:2147483647, p:-1) 62(d:2147483647, p:-1) 63(d:2147483647, p:-1)
            64(d:2147483647, p:-1) 65(d:2147483647, p:-1) 66(d:2147483647, p:-1)
            67(d:2147483647, p:-1) 68(d:2147483647, p:-1) 69(d:2147483647, p:-1)
            70(d:2147483647, p:-1) 71(d:2147483647, p:-1) 72(d:2147483647, p:-1)
            73(d:2147483647, p:-1) 74(d:2147483647, p:-1) 75(d:2147483647, p:-1)
            76(d:2147483647, p:-1) 77(d:2147483647, p:-1) 78(d:2147483647, p:-1)
            79(d:2147483647, p:-1) 80(d:2147483647, p:-1) 81(d:2147483647, p:-1)
            82(d:2147483647, p:-1) 83(d:2147483647, p:-1) 84(d:2147483647, p:-1)
            85(d:2147483647, p:-1) 86(d:2147483647, p:-1) 87(d:2147483647, p:-1)
            88(d:2147483647, p:-1) 89(d:2147483647, p:-1) 90(d:2147483647, p:-1)
            91(d:2147483647, p:-1) 92(d:2147483647, p:-1) 93(d:2147483647, p:-1)
            94(d:2147483647, p:-1) 95(d:2147483647, p:-1) 96(d:2147483647, p:-1)
            97(d:2147483647, p:-1) 98(d:2147483647, p:-1) 99(d:2147483647, p:-1)
            100(d:2147483647, p:-1)
Adding node 5 to the solved set S={1 3 4 5 }
Updating labels for node 6
        distance: 8 -> 6
        parent:   4 -> 5
        Labelled Nodes:
            1(d:0, p:-1) 2(d:2147483647, p:-1) 3(d:1, p:1)
            4(d:3, p:3) 5(d:5, p:3) 6(d:6, p:5)
            7(d:2147483647, p:-1) 8(d:2147483647, p:-1) 9(d:2147483647, p:-1)
            10(d:2147483647, p:-1) 11(d:2147483647, p:-1) 12(d:2147483647, p:-1)
            13(d:2147483647, p:-1) 14(d:2147483647, p:-1) 15(d:2147483647, p:-1)
            16(d:2147483647, p:-1) 17(d:2147483647, p:-1) 18(d:2147483647, p:-1)
            19(d:2147483647, p:-1) 20(d:2147483647, p:-1) 21(d:2147483647, p:-1)
            22(d:2147483647, p:-1) 23(d:2147483647, p:-1) 24(d:2147483647, p:-1)
            25(d:2147483647, p:-1) 26(d:2147483647, p:-1) 27(d:2147483647, p:-1)
            28(d:2147483647, p:-1) 29(d:2147483647, p:-1) 30(d:2147483647, p:-1)
            31(d:2147483647, p:-1) 32(d:2147483647, p:-1) 33(d:2147483647, p:-1)
            34(d:2147483647, p:-1) 35(d:2147483647, p:-1) 36(d:2147483647, p:-1)
            37(d:2147483647, p:-1) 38(d:2147483647, p:-1) 39(d:2147483647, p:-1)
            40(d:2147483647, p:-1) 41(d:2147483647, p:-1) 42(d:2147483647, p:-1)
            43(d:2147483647, p:-1) 44(d:2147483647, p:-1) 45(d:2147483647, p:-1)
            46(d:2147483647, p:-1) 47(d:2147483647, p:-1) 48(d:2147483647, p:-1)
            49(d:2147483647, p:-1) 50(d:2147483647, p:-1) 51(d:2147483647, p:-1)
            52(d:2147483647, p:-1) 53(d:2147483647, p:-1) 54(d:2147483647, p:-1)
            55(d:2147483647, p:-1) 56(d:2147483647, p:-1) 57(d:2147483647, p:-1)
            58(d:2147483647, p:-1) 59(d:2147483647, p:-1) 60(d:2147483647, p:-1)
            61(d:2147483647, p:-1) 62(d:2147483647, p:-1) 63(d:2147483647, p:-1)
            64(d:2147483647, p:-1) 65(d:2147483647, p:-1) 66(d:2147483647, p:-1)
            67(d:2147483647, p:-1) 68(d:2147483647, p:-1) 69(d:2147483647, p:-1)
            70(d:2147483647, p:-1) 71(d:2147483647, p:-1) 72(d:2147483647, p:-1)
            73(d:2147483647, p:-1) 74(d:2147483647, p:-1) 75(d:2147483647, p:-1)
            76(d:2147483647, p:-1) 77(d:2147483647, p:-1) 78(d:2147483647, p:-1)
            79(d:2147483647, p:-1) 80(d:2147483647, p:-1) 81(d:2147483647, p:-1)
            82(d:2147483647, p:-1) 83(d:2147483647, p:-1) 84(d:2147483647, p:-1)
            85(d:2147483647, p:-1) 86(d:2147483647, p:-1) 87(d:2147483647, p:-1)
            88(d:2147483647, p:-1) 89(d:2147483647, p:-1) 90(d:2147483647, p:-1)
            91(d:2147483647, p:-1) 92(d:2147483647, p:-1) 93(d:2147483647, p:-1)
            94(d:2147483647, p:-1) 95(d:2147483647, p:-1) 96(d:2147483647, p:-1)
            97(d:2147483647, p:-1) 98(d:2147483647, p:-1) 99(d:2147483647, p:-1)
            100(d:2147483647, p:-1)
Adding node 6 to the solved set S={1 3 4 5 6 }
shortest distance from 1 To 6 is 6
Showing best path:
1
3
5
6
```