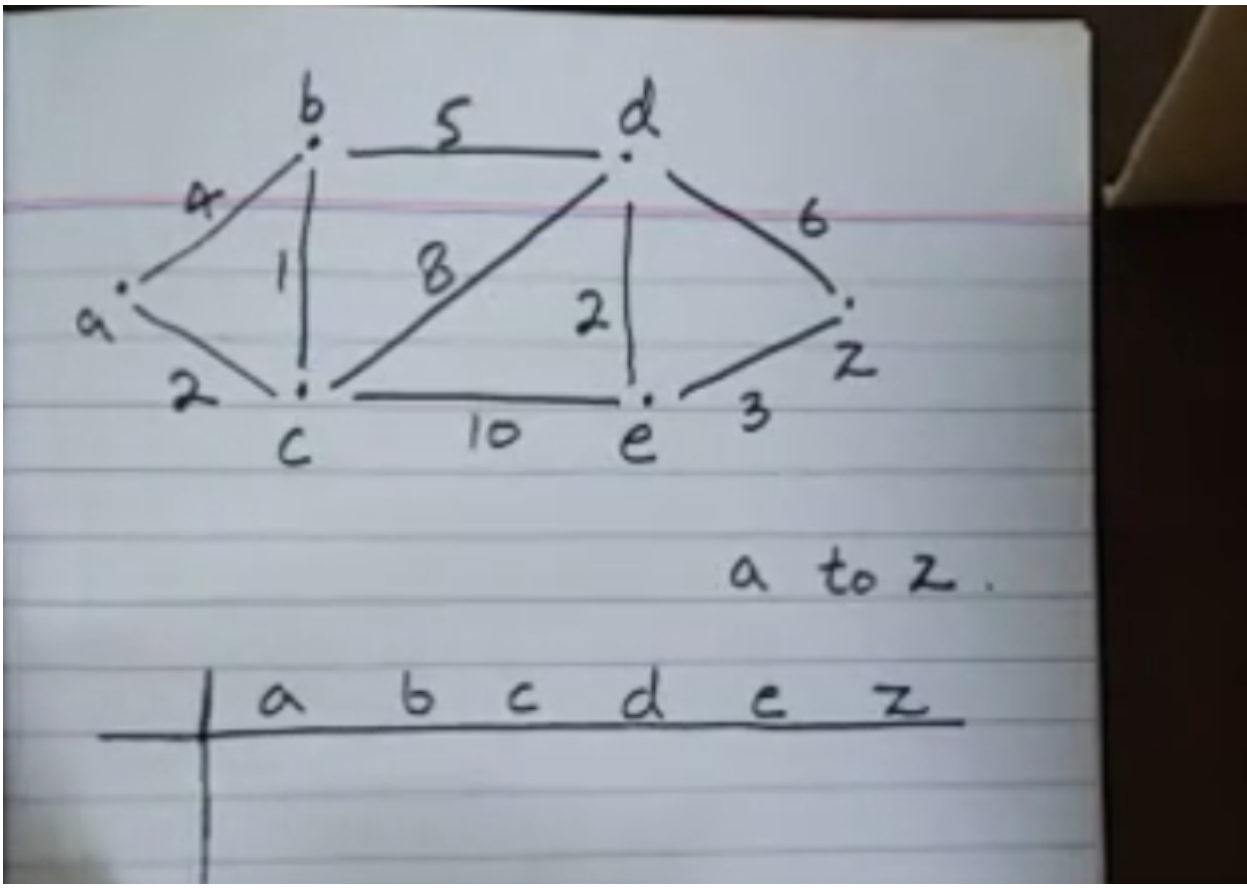
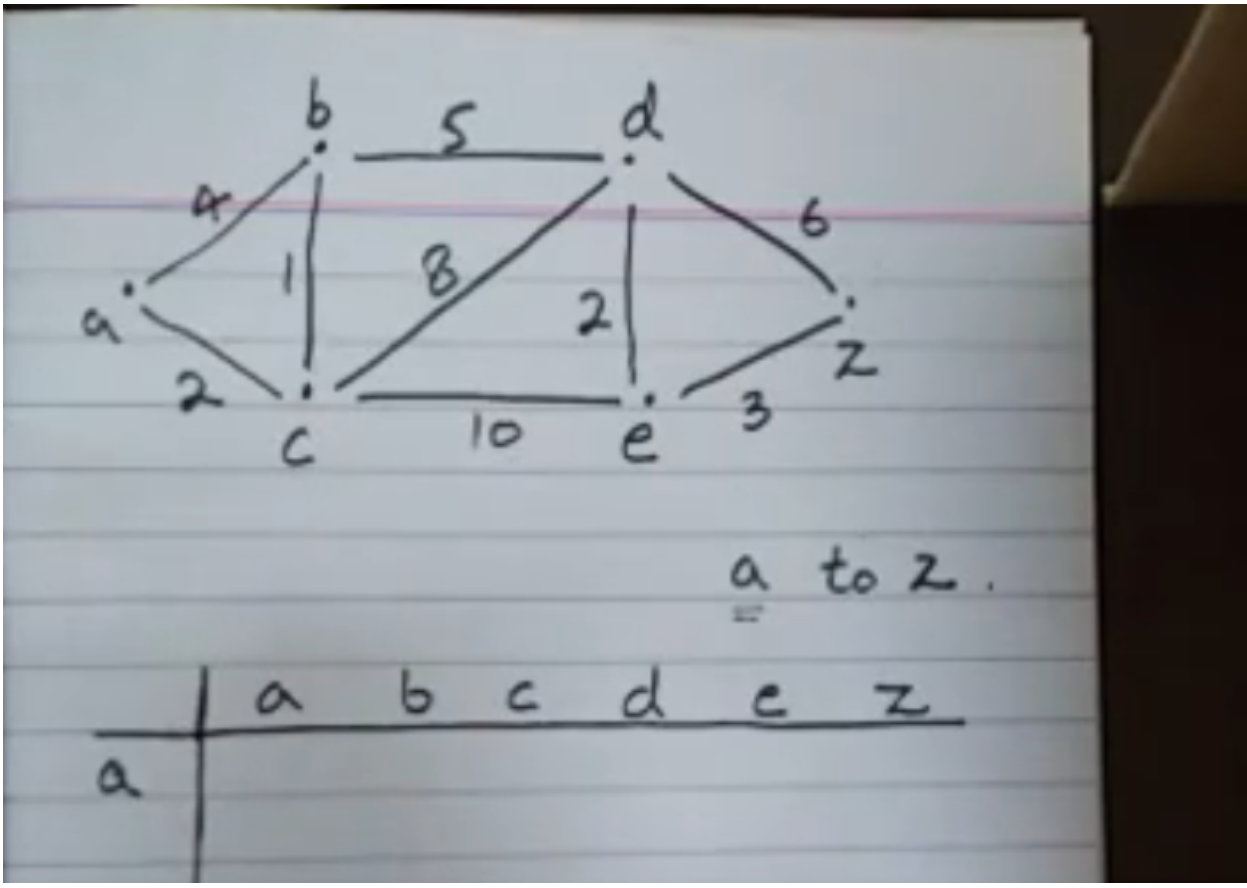
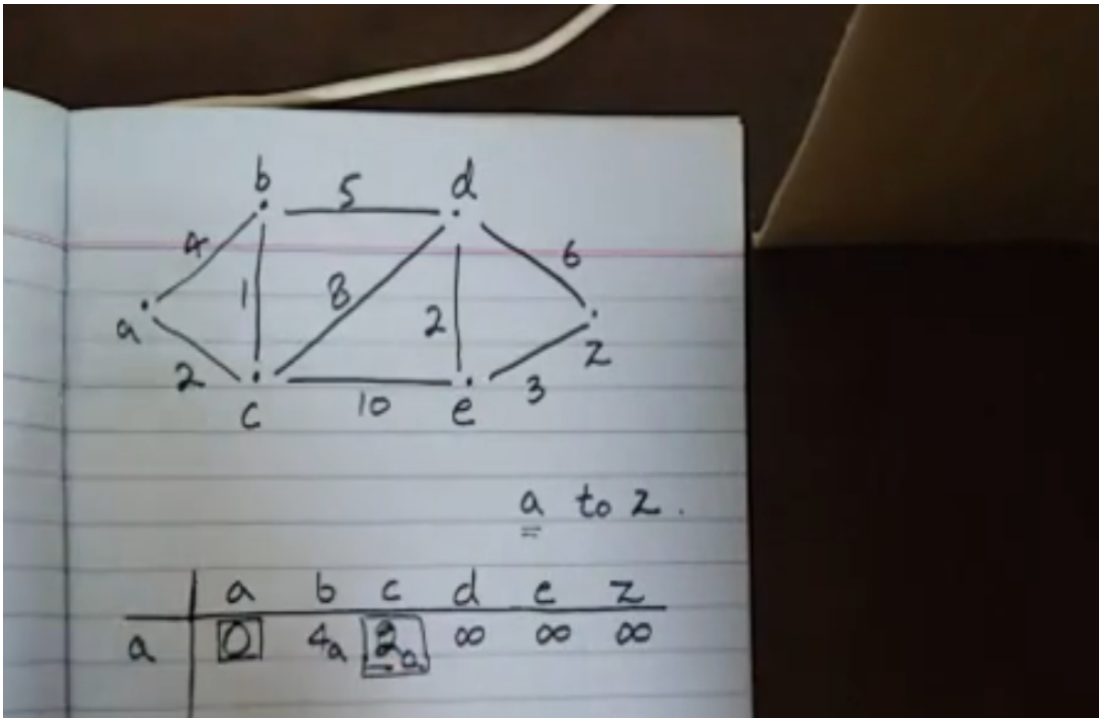
Discrete Lecture # 24

- **Dijistra Algorithm (Shortest Path)**
  - **We find the shortest available path in the graph between any two distinct pair of vertices**
  - **First we construct a table with all the vertices either alphabatically or not in columns**
  - 

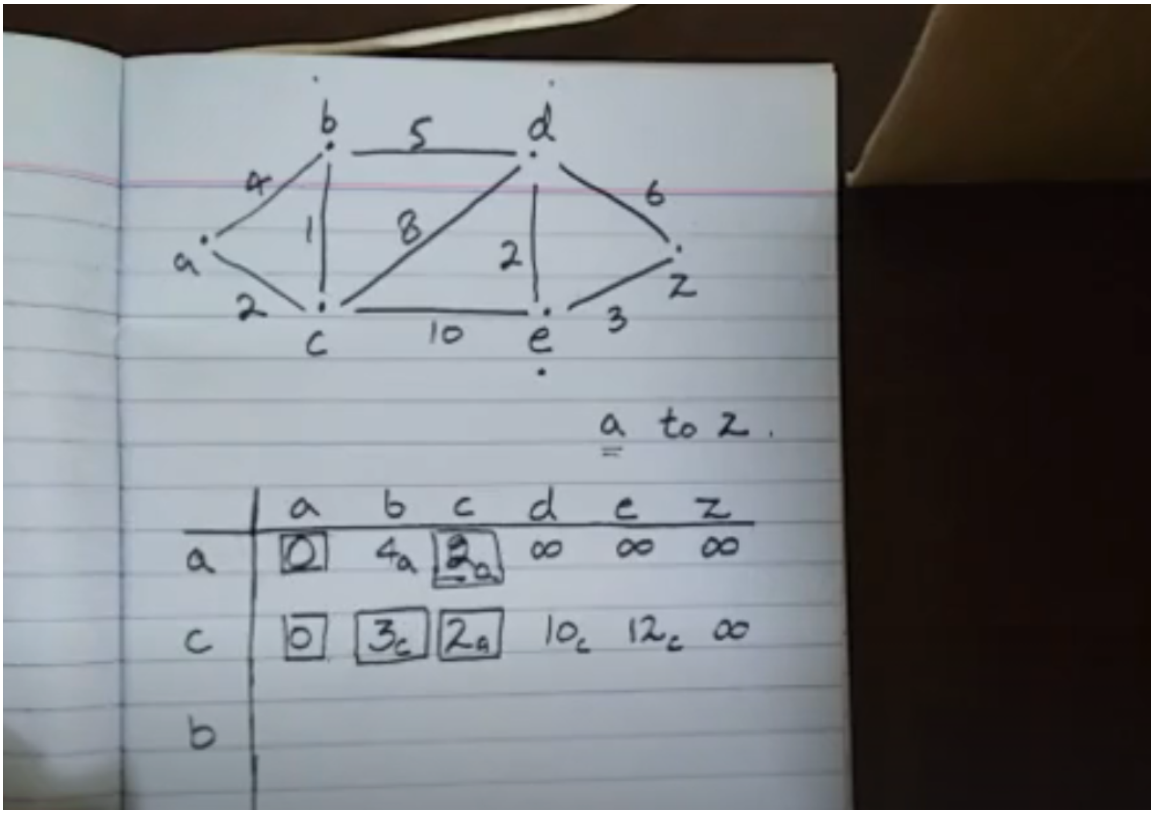
- **In rows start with the first vertices from where you have to start and find the ending vertex**



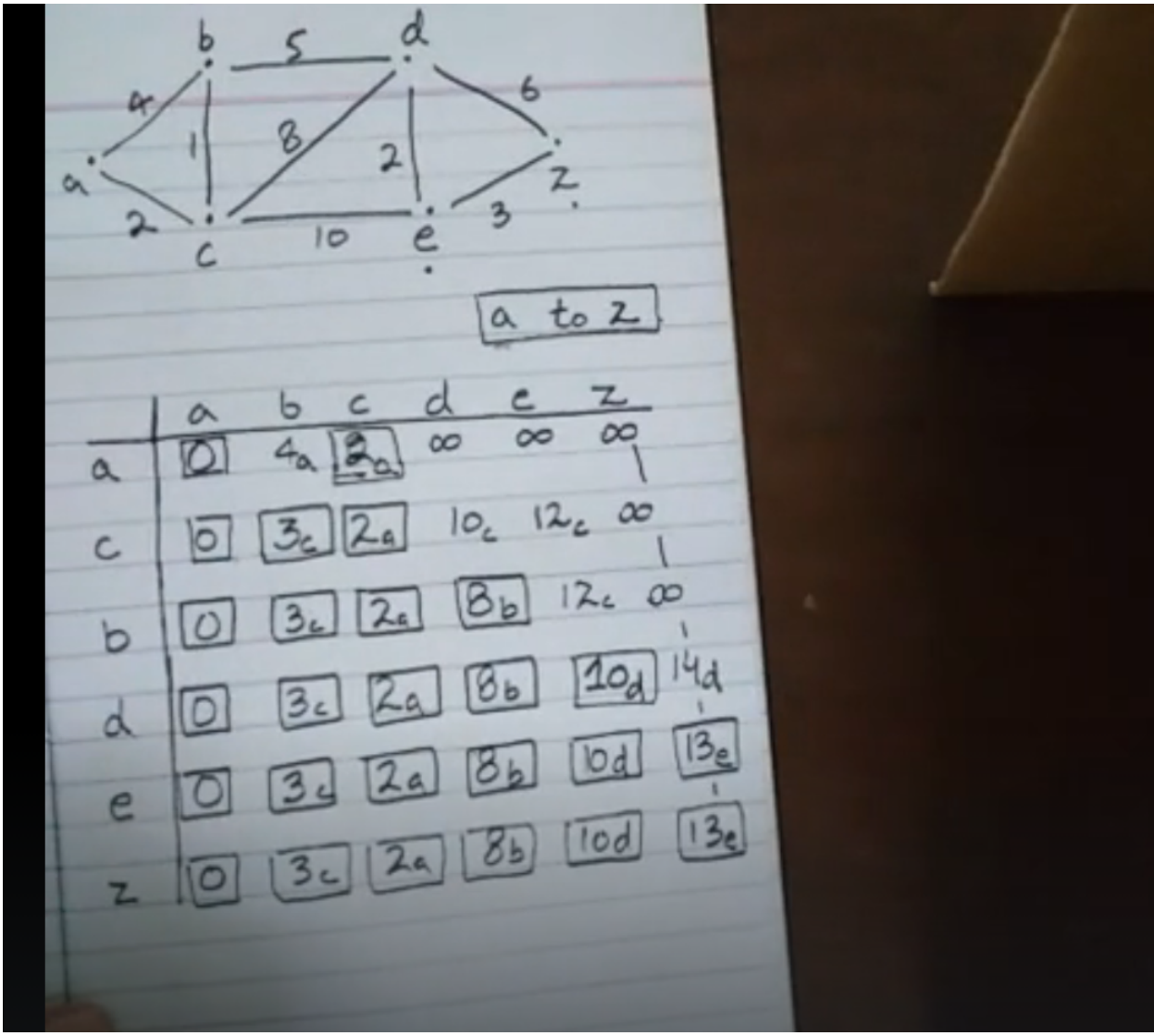
- **Now from write all the weights in those columns with which A vertex is connected**
- YOU MUST MENTION THE SUBSCRIPT WITH THE WEIGHT , SUBSCRIPT WILL BE THE ROW NAME WITH THE WEIGHT IF IT IS UPDATED

- 

  - Now you have to pick the lowest weight and its respected column and write it in the second row and repeat the process
  - YOU MUST MENTION THE SUBSCRIPT WITH THE WEIGHT , SUBSCRIPT WILL BE THE ROW NAME WITH THE WEIGHT IF IT IS UPDATED



- As you can see we did the same process
- In this process , when you are done with the first row you have to keep in mind to add the previous weight spend on reaching the row vertex and after that you can re-assign weight



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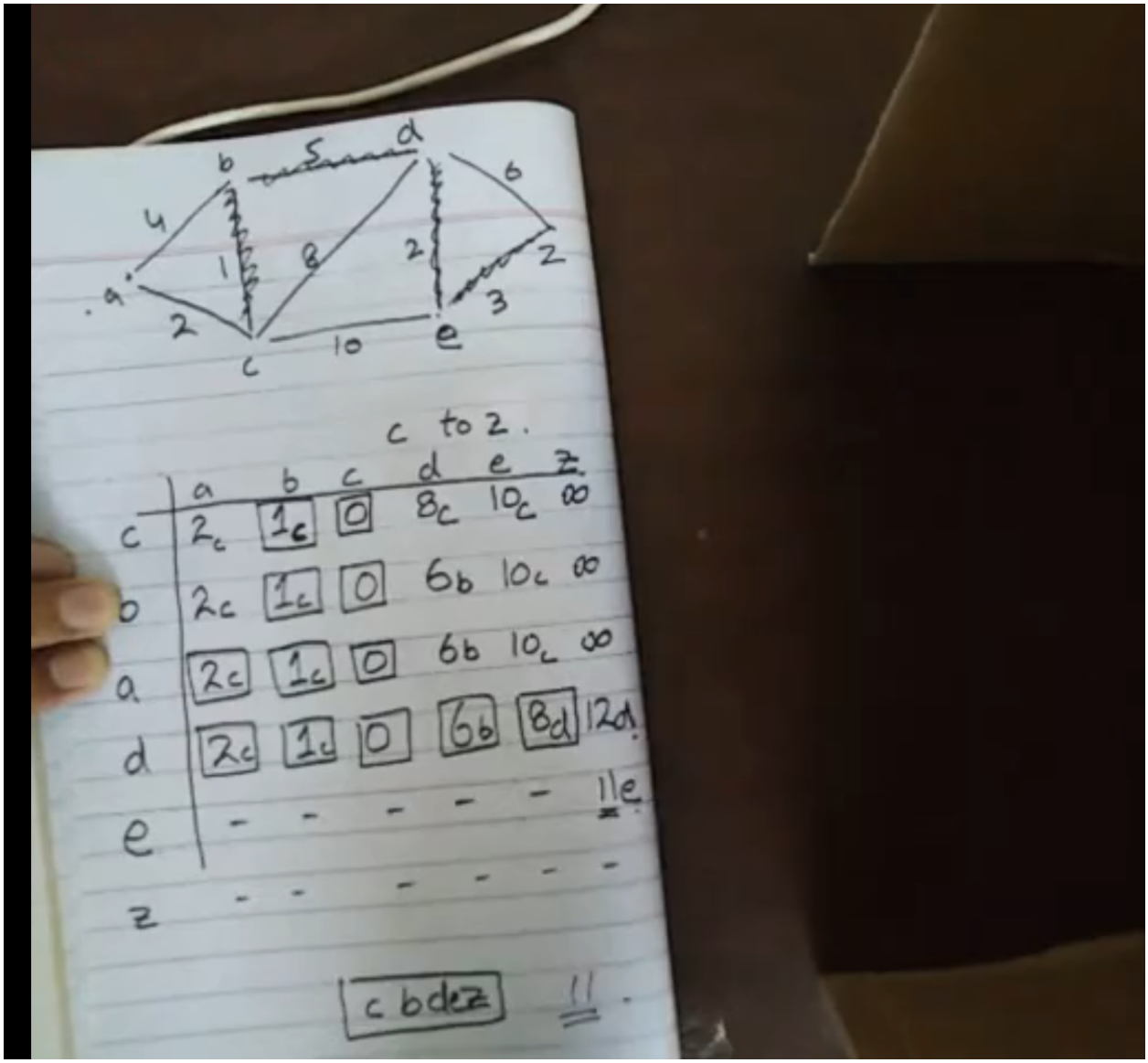
- Now
- To find the shortest path

- Go to the column of the end vertex write its name
- Z
- Now in the last row in Z colum check the subscript it is e
- So
- E Z
- Now go to the column of the subscript and write the subscript and keep on going until to find the start vertex

- A C B D E Z
- Weight = Weight of Z end vertex which is = 13



- C B D E Z