

# title

Maximum  
Bismillah  
Mehnooz

Nafiz Imtiaz,  
Abrar Fahim, S.  
S. Somik

First 2 slides contain sample blocks, columns and stuff

Remark

in block

important theorem

in alertblock

Examples

in users block

text in frame

this is alert

# columns

Qasim  
Bashir  
Malik

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text in first column

$$E = mc^2$$

- first item
- hello there

text in second column

# Real World Applications

Osama  
Bashir  
Malina

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Abrar Fahim, S.  
S. Somik

# Maximum Bipartite Matching

## CSE 300 Presentation

Nafiz Imtiaz, Abrar Fahim, S. S. Somik

Department of CSE, BUET, Dhaka 1000, Bangladesh

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# Bipartite Graph Definition

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Bipartite  
Matching

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Abrar Fahim, S.  
S. Somik



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# Maximum Matching

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Bipartite  
Matching

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# Max Flow Problem Overview

Maximum  
Bipartite  
Matching

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# Relating Max Flow Problem with Maximum Matching

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# Max Flow problem Algorithm

Maximum  
Flow  
Algorithm

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- solving max flow using ford fulkerson takes  $O(ef^*)$  time, where  $f^* = \text{max flow}$ , but in our problem,  $f^* = n = \text{no of vertices}$  and  $\text{no of edges} = m + 2n$ ,  $m = \text{no of edges in bipartite graph}$  and  $2n$  edges are added later to convert the problem into max flow problem. So running time

$$= O((m + 2n)n) = O(mn + n^2) = O(mn)$$

- but, we can use a simpler way to solve this since edges are unweighted, although we get same time complexity
- even simpler way is a recursive way which is shown as "Alternative approach" in the fancy slides from the internet

# Solving Main Problem

Maximum  
Bipartite  
Matching

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Abrar Fahim, S.  
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# Time Complexity

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Bipartite  
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# Alternate solutions

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Bipartite  
Matching

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S. Somik

# References

Qasim  
Bashir  
Malina

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Abrar Fahim, S.  
S. Somik