Graphviz Tutorial
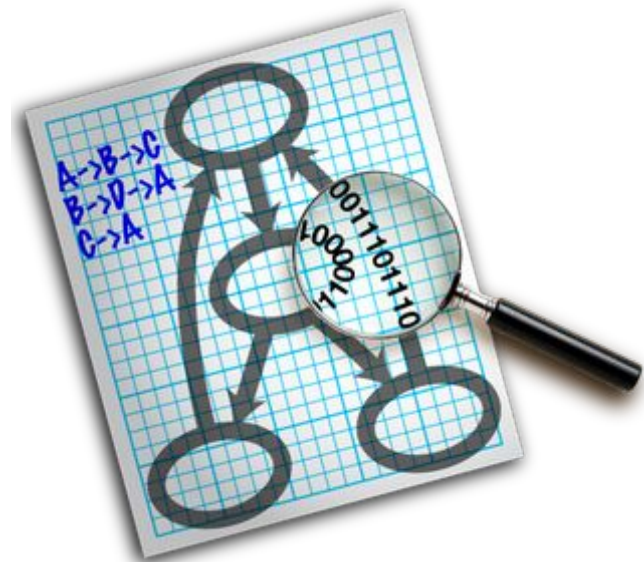
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What is Graphviz?

- Open Source graph visualization software
- Developed by AT&T Labs
- Markup language - DOT
- Use cases
  - Class diagrams
  - State transition diagrams
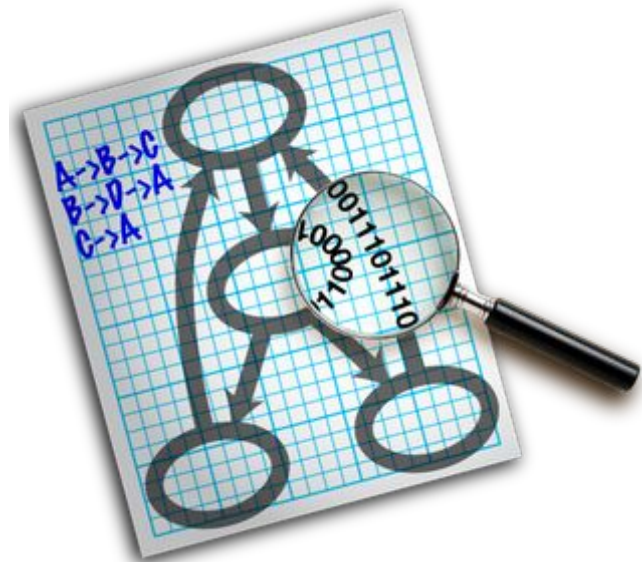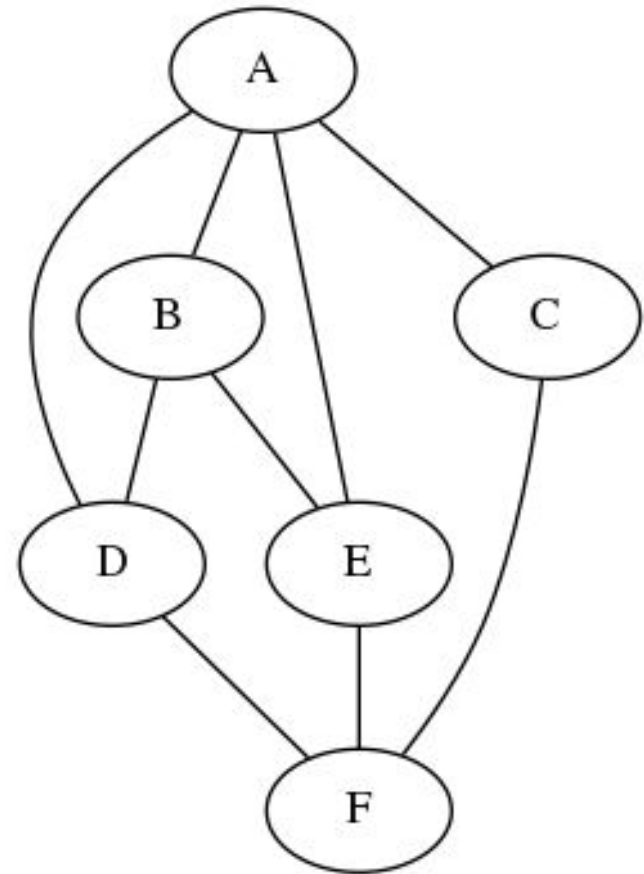 - Function call graphs

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- Open Source graph visualization software

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- Use cases

  - Class diagrams

  - State transition diagrams

  - Function call graphs

- **Input** - Description of a graph
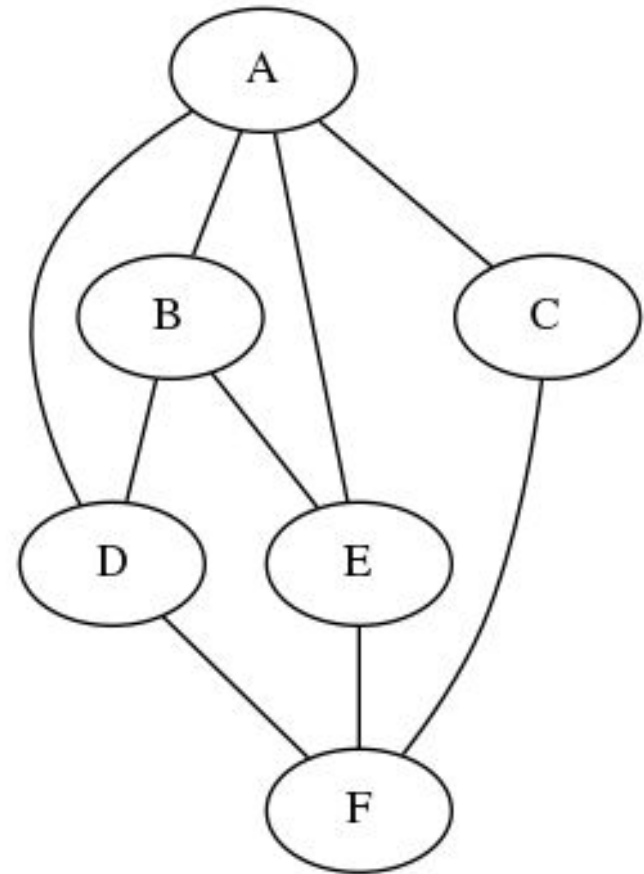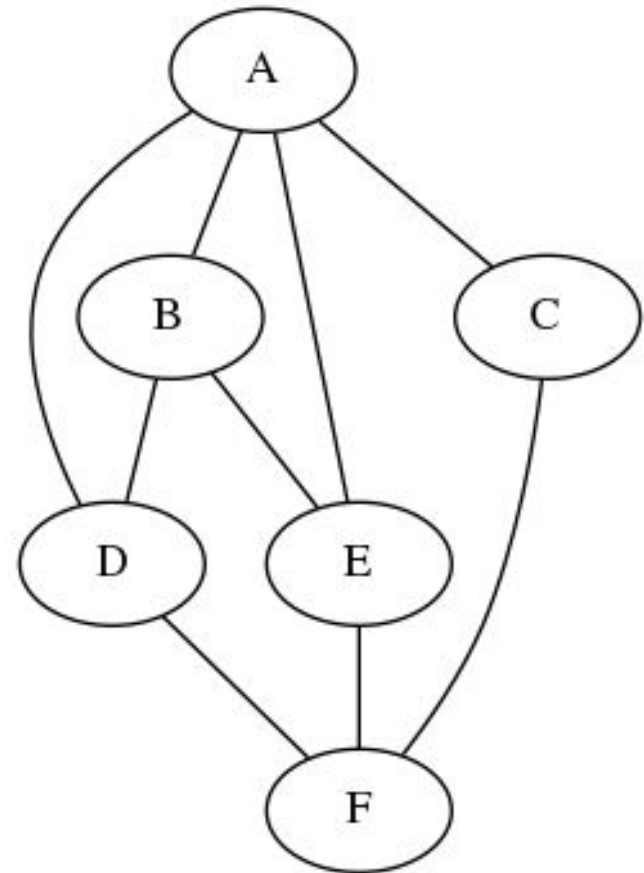
- **Output** - Picture of a graph

A sample graph

Define the nodes

```
graph{
    A  B  C  D  E  F
```

List those who are connected to **A**

```
graph{
    A B C D E F

    A -- B
    A -- C
    A -- D
    A -- E
```

List those who are connected to **B**

```
graph{
    A  B  C  D  E  F

    A -- B
    A -- C
    A -- D
    A -- E

    B -- D
    B -- E
```
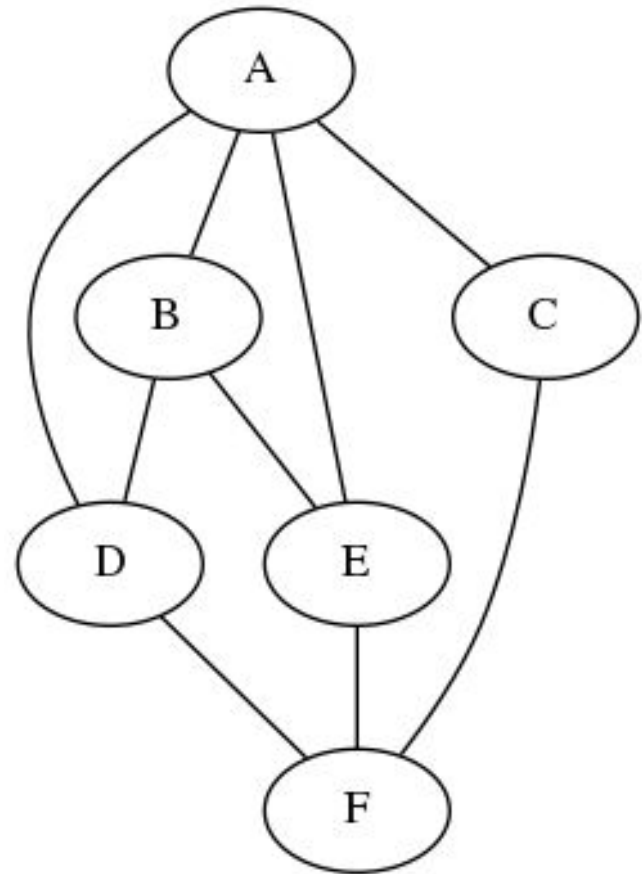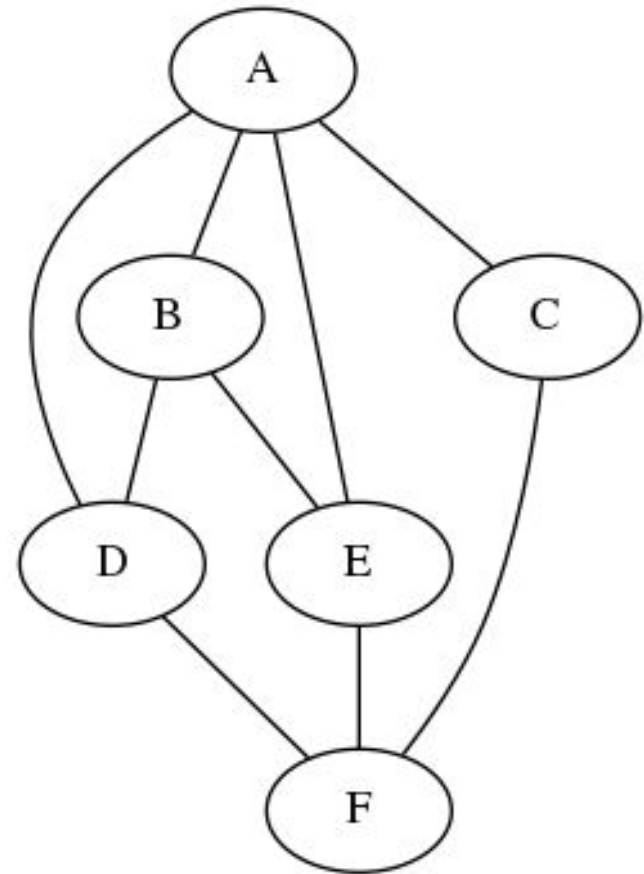
...and so on

```
graph{
    A B C D E F

    A -- B
    A -- C
    A -- D
    A -- E

    B -- D
    B -- E

    C -- F
    D -- F
    E -- F
}
```

Compilation

- But first, install using `apt` in linux (Windows binaries also available)
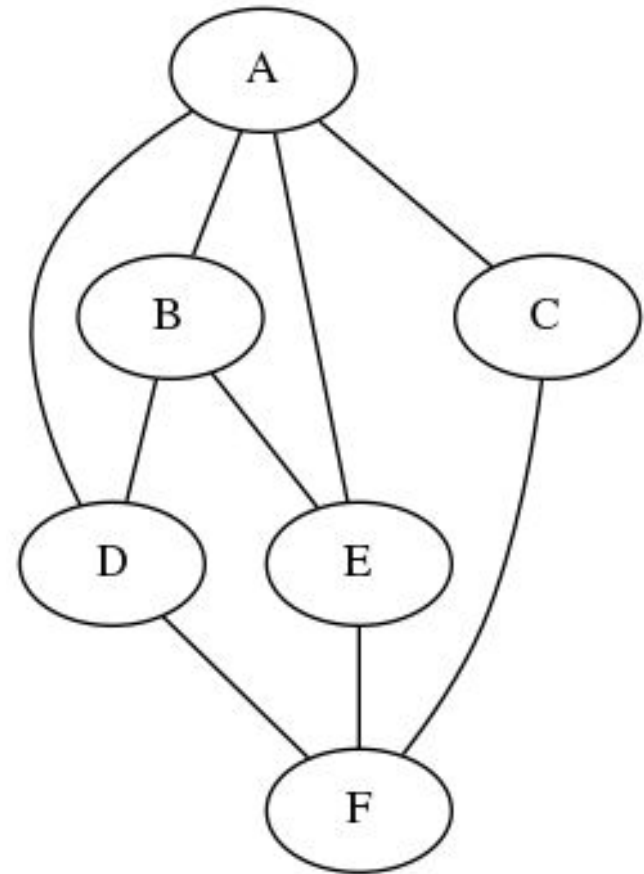
Compilation

- But first, install using `apt` in linux (Windows binaries also available)

- Compilation string

```
dot -Tpng input_graph.dot -o output_image.png
```
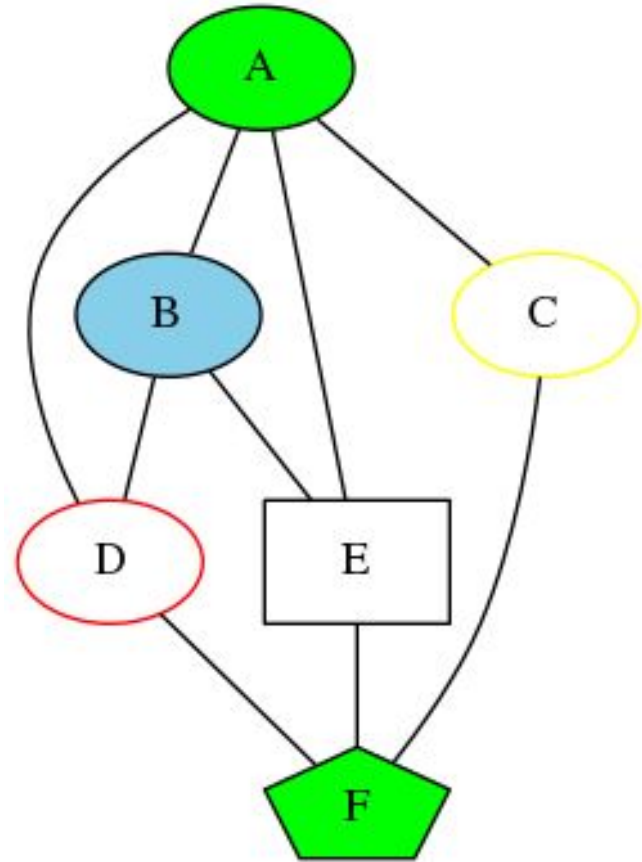
A sample graph with colour and shape

```
graph{
    A  B  C  D  E  F
```

A sample graph with colour and shape

```
graph{
    A B C D E F

// links same as previous
graph
```
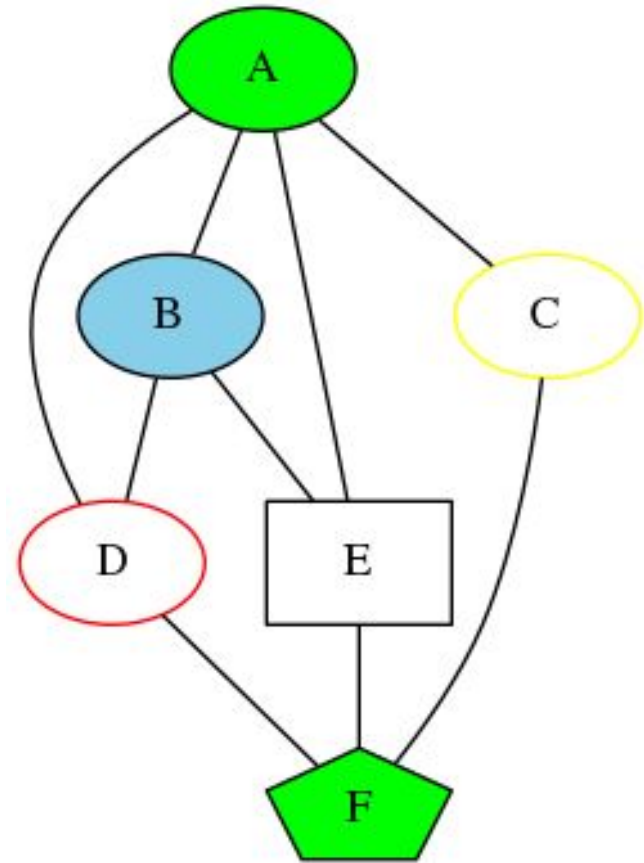
A sample graph with colour and shape

```
graph{
    A B C D E F

    A [fillcolor=green,
    style=filled]
```
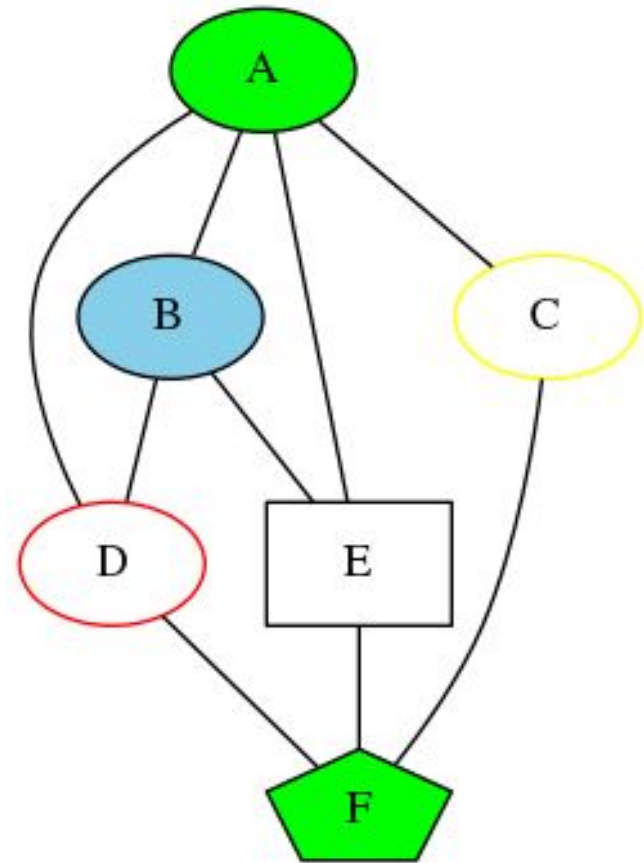
A sample graph with colour and shape

```
graph{
    A B C D E F

    A [fillcolor=green,
    style=filled]
    B [fillcolor=skyblue,
    style=filled]
```

A sample graph with colour and shape

```
graph{
    A B C D E F

    A [fillcolor=green,
    style=filled]
    B [fillcolor=skyblue,
    style=filled]
    C [color=yellow]
```
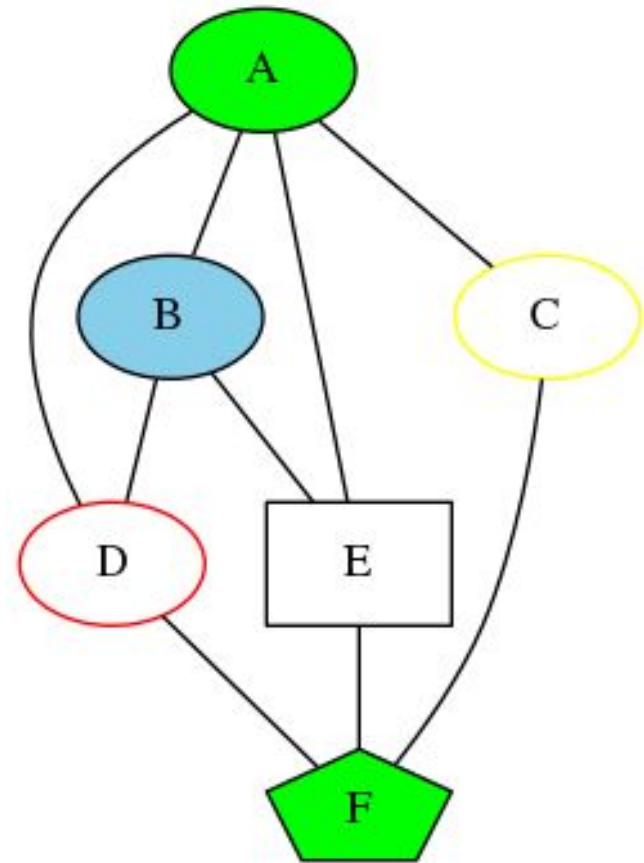
A sample graph with colour and shape

```
graph{
    A B C D E F

    A [fillcolor=green,
    style=filled]
    B [fillcolor=skyblue,
    style=filled]
    C [color=yellow]
    D [color=red]
```
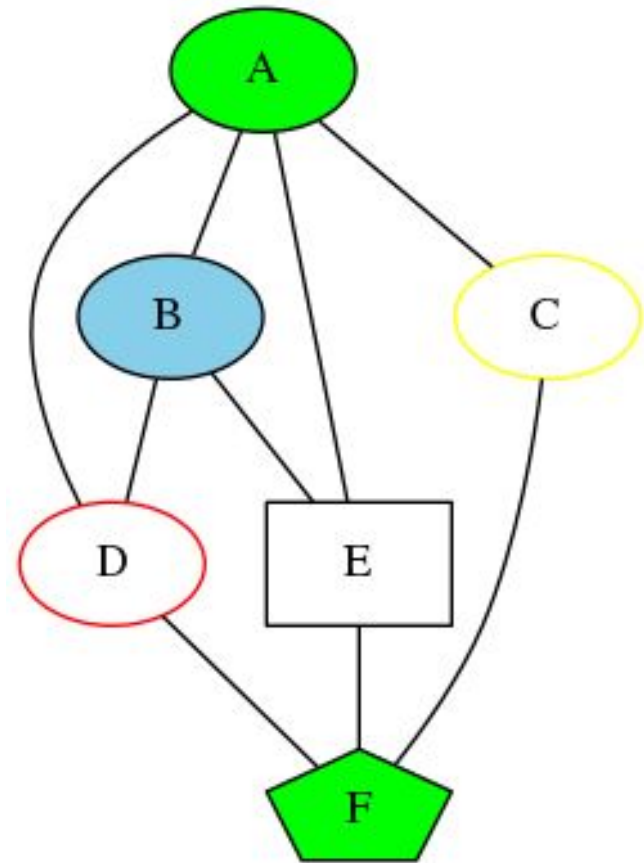
A sample graph with colour and shape

```
graph{
    A B C D E F

    A [fillcolor=green,
    style=filled]
    B [fillcolor=skyblue,
    style=filled]
    C [color=yellow]
    D [color=red]
    E [shape=box]
```
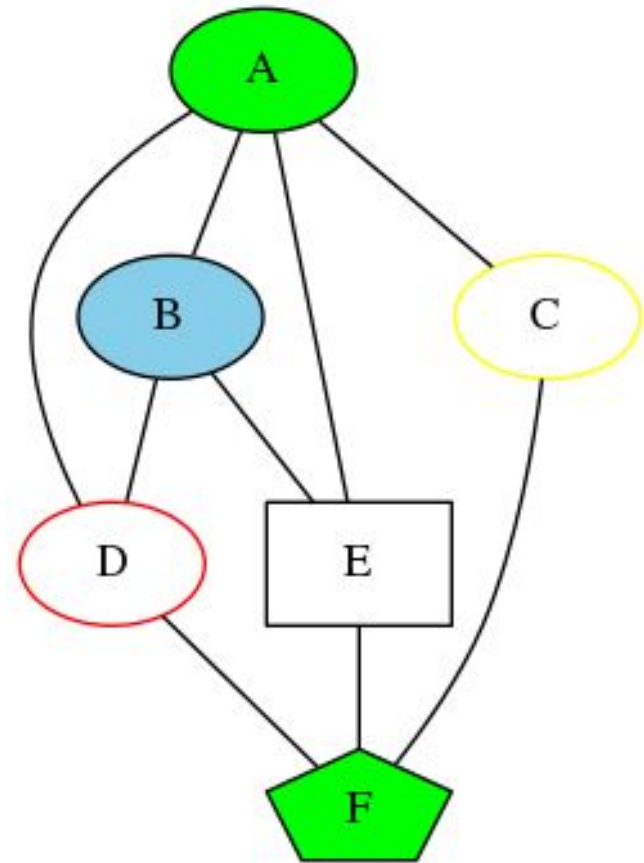
A sample graph with colour and shape

```
graph{
    A B C D E F

    A [fillcolor=green,
    style=filled]
    B [fillcolor=skyblue,
    style=filled]
    C [color=yellow]
    D [color=red]
    E [shape=box]

    F [shape=pentagon,
    fillcolor=green,
    style=filled]
```
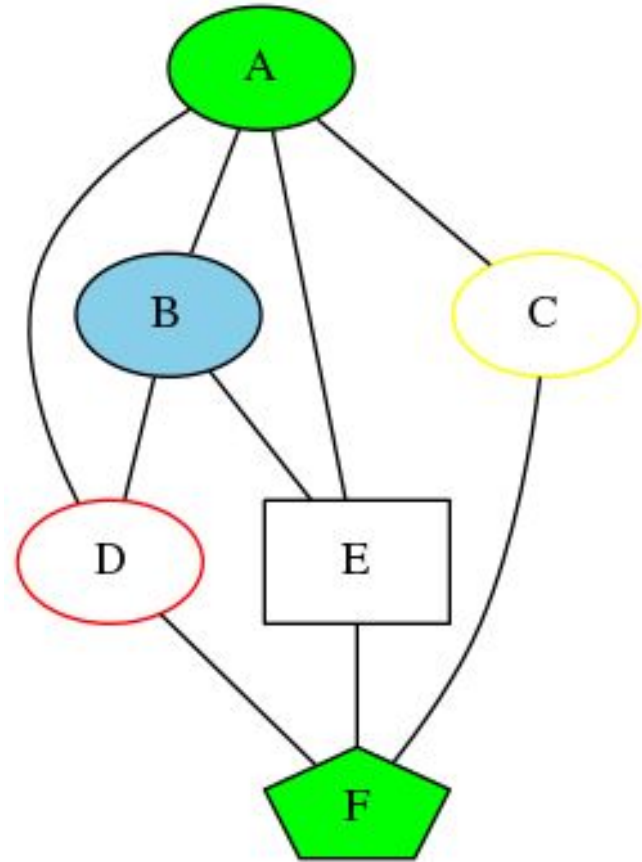
Further resources…

- **man dot**

- http://www.graphviz.org - Official site

- http://graphs.grevian.org/example - Sample codes with output

- http://www.graphviz.org/Gallery.php - Even more samples

- http://www.tonyballantyne.com/graphs.html - Another tutorial

- **https://hackmd.io** - A WYSIWYG editor for Graphviz and much more

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```
```graphviz
//graphviz code
```
```

Thank you…