

Best path

Template for best part solution in directed graph

Create random graph with desired nodes amount

```
na = 9;  
  
s = randi(na, na * 3, 1);  
t = randi(na, na * 3, 1);  
  
g = digraph(s, t, s, 'omitselfloops');
```

Set graph's edges width

```
g.Edges.LWidths = 4 * g.Edges.Weight / max(g.Edges.Weight);  
g.Nodes.NodeColors = indegree(g);
```

Plot graph and make some decor

```
p = plot(g, 'EdgeLabel', g.Edges.Weight);  
p.NodeCData = g.Nodes.NodeColors;  
p.MarkerSize = 7;  
p.ArrowSize = 12;  
p.EdgeColor = [0.5 0.5 0.5];  
p.LineWidth = g.Edges.LWidths;
```

Select two nodes randomly and find best path from begin to end

```
rng();  
b = randi(na, 1);  
e = randsample(setdiff(1:na, b), 1);  
sp = shortestpath(g, b, e);
```

Highlight path on the graph

```
p.EdgeColor = [0.5 0.5 0.5];  
highlight(p, sp, 'EdgeColor', [1 0 0]);
```

