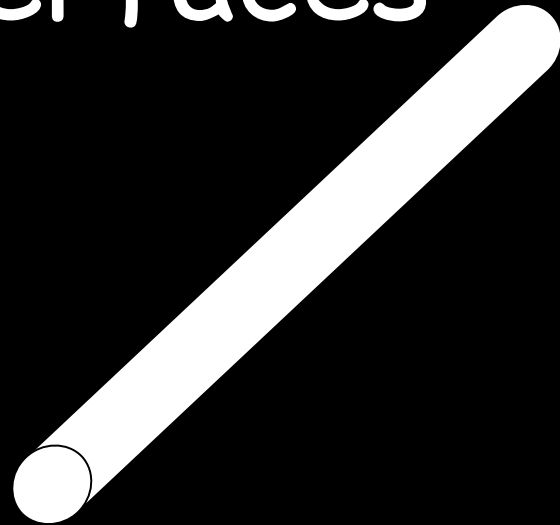


An Algorithm for Navigational Supervision of Asynchronous Interfaces



An Algorithm for Navigational Supervision of Asynchronous Interfaces



Navigational Interfaces?

Starting point:

File [A]

Expanded dialogue structure:

Open file [C]

Filename:

Directory structure:

Save file [D]

Filename:

Directory structure:

File [B]

Ctrl-O

Ctrl-S

Are you sure you wish to exit?

[E]



Navigational Interfaces?

Starting point:

[A]

File

[C]

Open file

Filename:

Directory structure:

OK Cancel

[D]

Save file

Filename:

Directory structure:

OK Cancel

[B]

Expanded dialogue structure:

File

- Open Ctrl-O

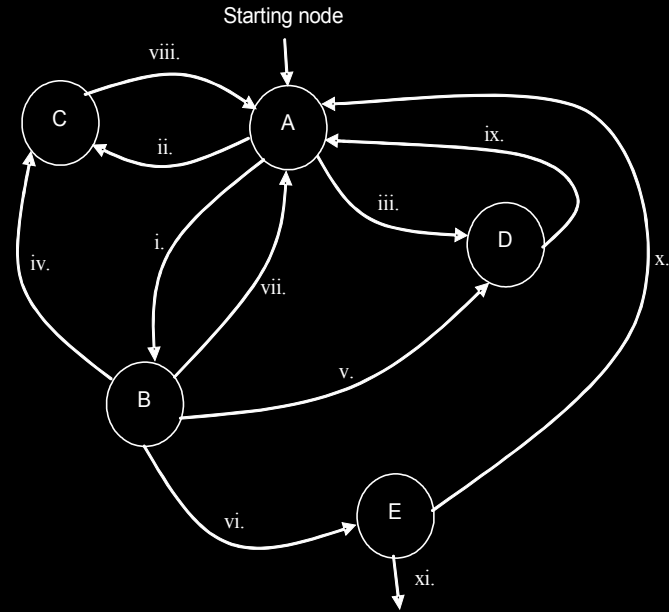
Save Ctrl-S

Exit

[E]

Are you sure you wish to exit?

Yes No



Legend

- | | |
|----------------------|------------------------|
| i. File menu option | vi. Exit menu option |
| ii. Ctrl-O shortcut | vii. Escape key |
| iii. Ctrl-S shortcut | viii. OK/Cancel button |
| iv. Open menu option | ix. OK/Cancel button |
| v. Save menu option | x. No button |
| | xi. Yes button |

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Asynchronous Interface?

The **user** is in control of the path followed through the interface

vs.

The **System** dictating the path the user follows through the interface

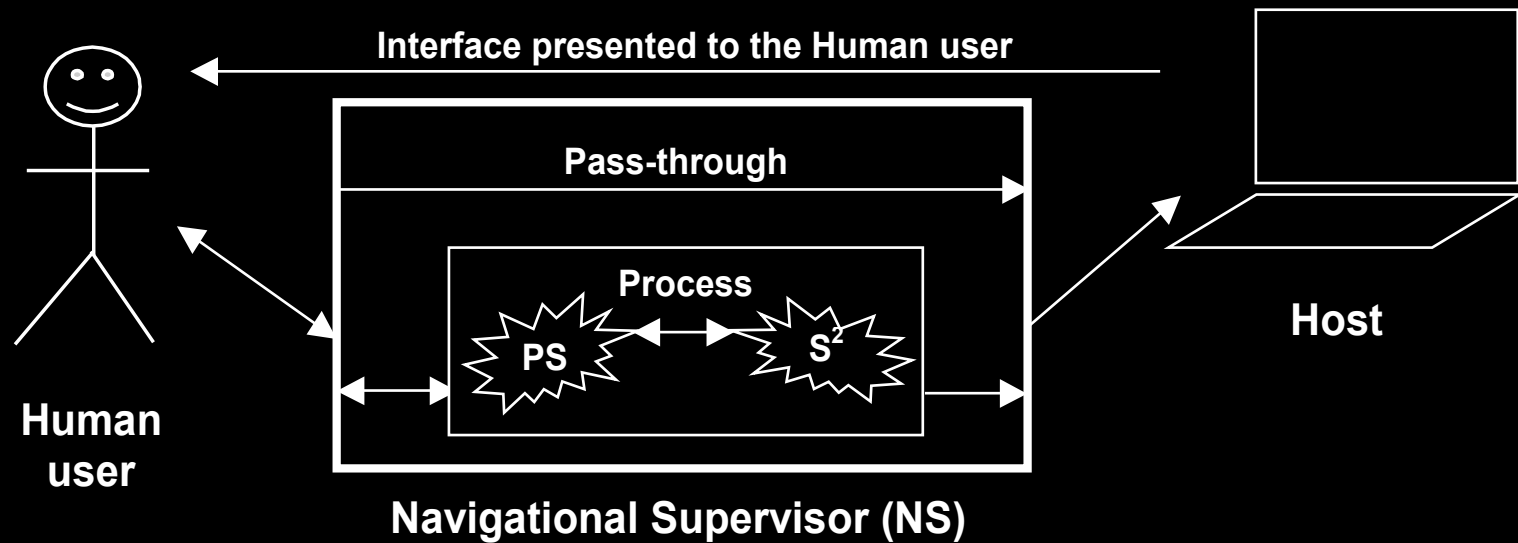
Asynchronous Interfaces comprise of a "network" of sequences.



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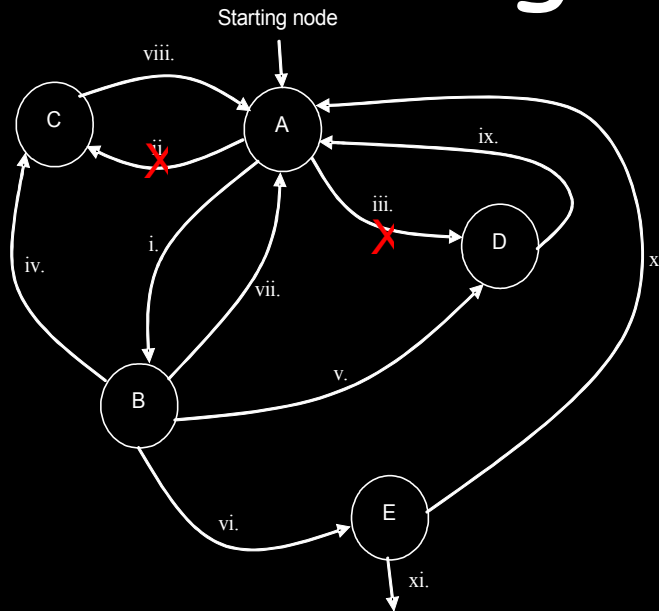
Navigational Supervision?



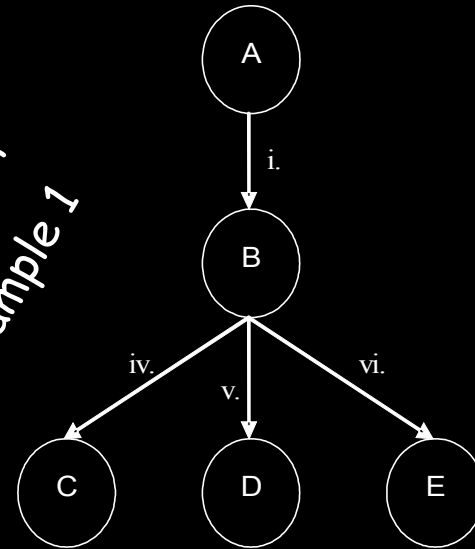
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Interfaces



Algorithm?



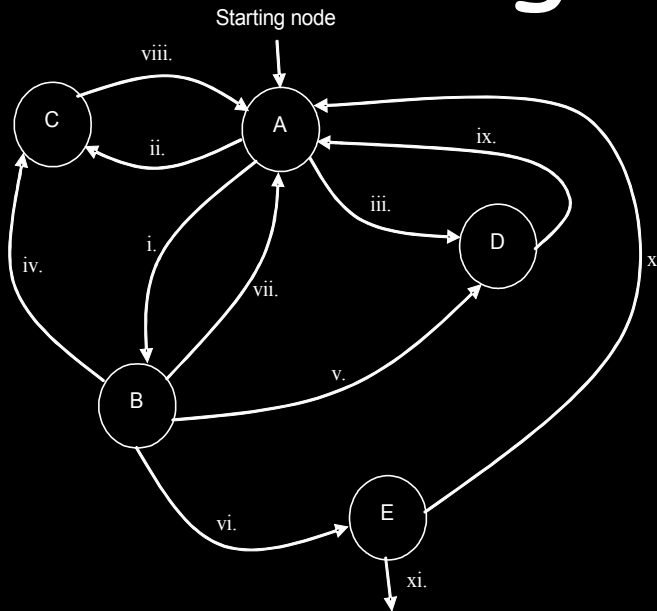
Shake-out
Example 1



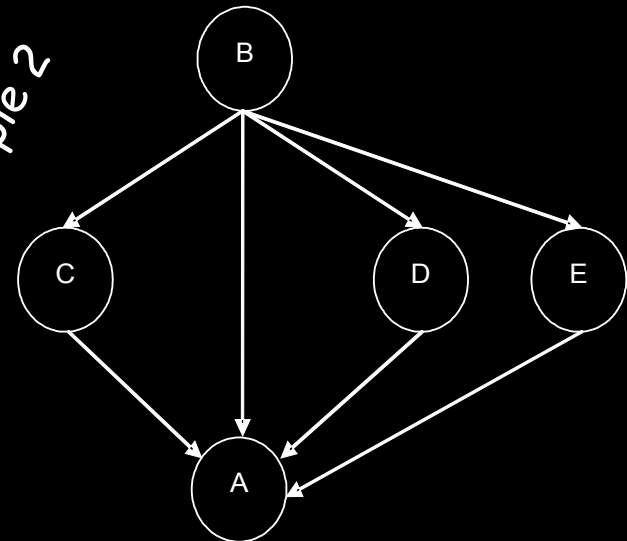
Legend

- | | |
|----------------------|------------------------|
| i. File menu option | vi. Exit menu option |
| ii. Ctrl-O shortcut | vii. Escape key |
| iii. Ctrl-S shortcut | viii. OK/Cancel button |
| iv. Open menu option | ix. OK/Cancel button |
| v. Save menu option | x. No button |
| | xi. Yes button |

Algorithm?



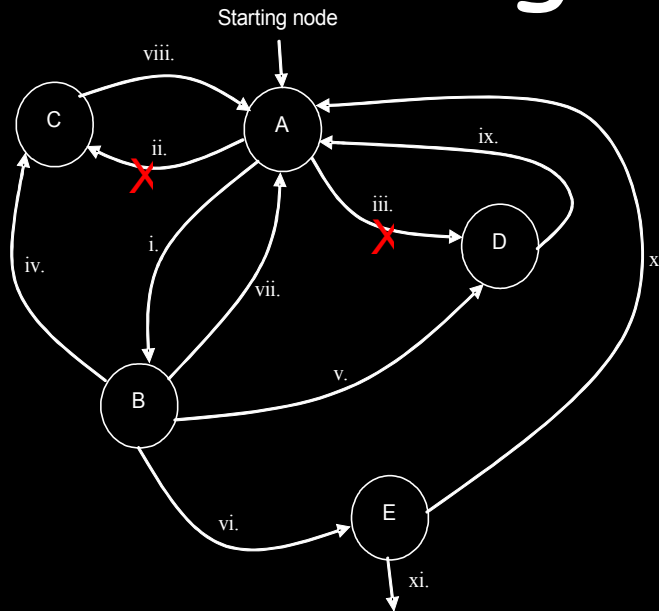
Shake-out
Example 2



Legend

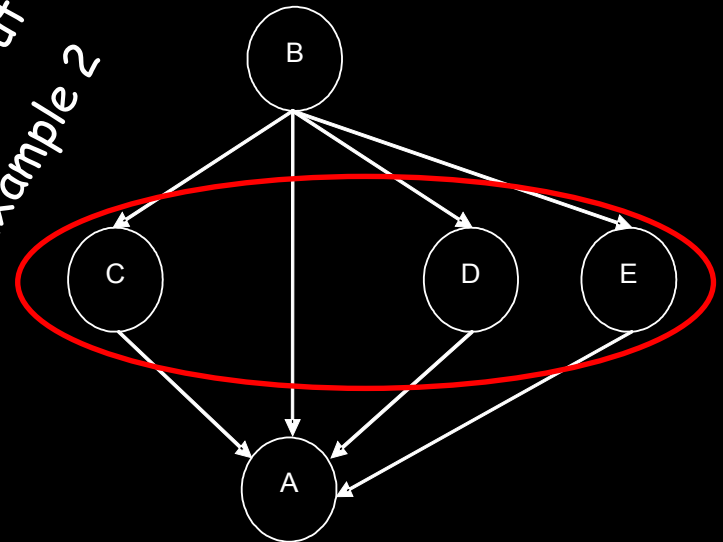
- | | |
|----------------------|------------------------|
| i. File menu option | vi. Exit menu option |
| ii. Ctrl-O shortcut | vii. Escape key |
| iii. Ctrl-S shortcut | viii. OK/Cancel button |
| iv. Open menu option | ix. OK/Cancel button |
| v. Save menu option | x. No button |
| | xi. Yes button |

Algorithm?



Nodes require input

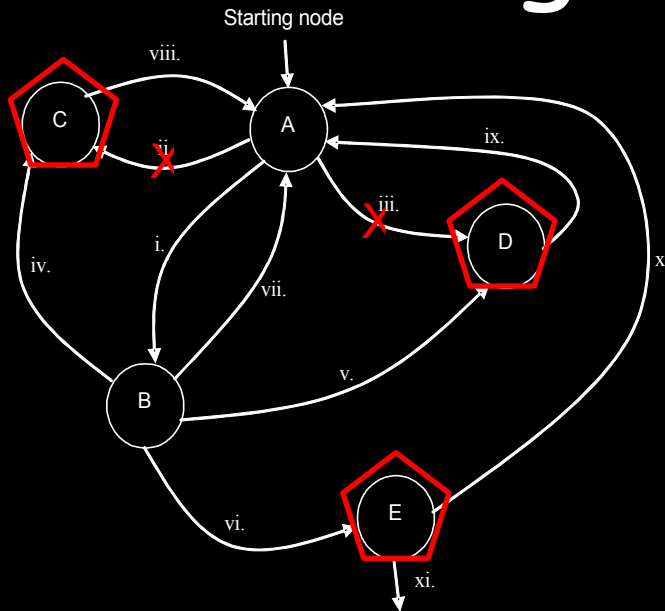
Shake-out
Example 2



Legend

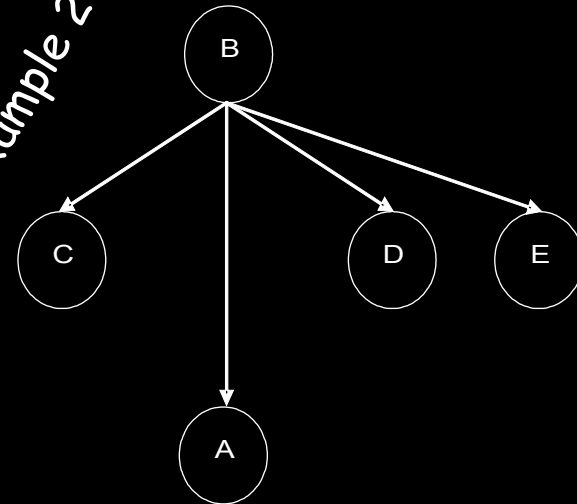
- | | |
|----------------------|------------------------|
| i. File menu option | vi. Exit menu option |
| ii. Ctrl-O shortcut | vii. Escape key |
| iii. Ctrl-S shortcut | viii. OK/Cancel button |
| iv. Open menu option | ix. OK/Cancel button |
| v. Save menu option | x. No button |
| | xi. Yes button |

Algorithm?



Introduction of Stop Nodes

Shake-out Example 2

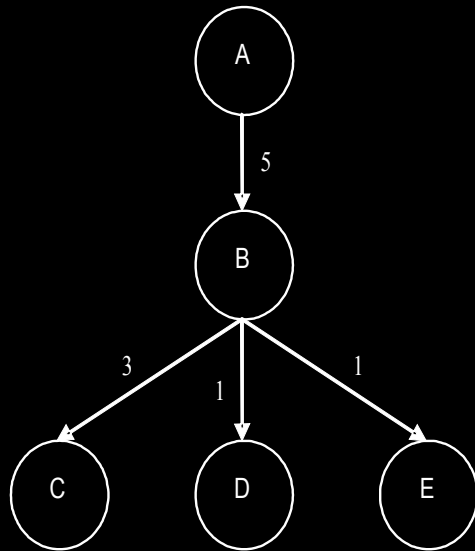


Legend

- | | |
|----------------------|------------------------|
| i. File menu option | vi. Exit menu option |
| ii. Ctrl-O shortcut | vii. Escape key |
| iii. Ctrl-S shortcut | viii. OK/Cancel button |
| iv. Open menu option | ix. OK/Cancel button |
| v. Save menu option | x. No button |
| | xi. Yes button |

Algorithm?

Ranking to determine the most probable path



$$v(p_i) = \left(\sum_{j=1}^n \text{weight}(p_{e_j}) \right) / n$$

$$s_i = V(p_i) / \text{max \%}$$

i	p_i	$v(p_i)$	s_i
1	A → B → C	8/2 = 4	100%
2	A → B → D	6/2 = 3	75%
3	A → B → E	6/2 = 3	75%

Algorithm?

3 step process:

- i. Initialisation
- ii. Shake-out - removing cycles
- iii. Ranking

An Algorithm for
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An Algorithm for Navigational Supervision of Asynchronous Interfaces

Linda Marshall
and
Derrick Kourie



Agenda

- Rationale
- Navigational Interface
- 'Asynchronicity'
- Supervision
- Algorithm
- Future work

Rationale

- Inspired by SAP R/3
- Applicable to any drill-down type interface

Agenda

- Rationale
- Navigational Interface
- 'Asynchronicity'
- Supervision
- Algorithm
- Future work

Future Work

- Develop a simulation
- Test
- Write up results

