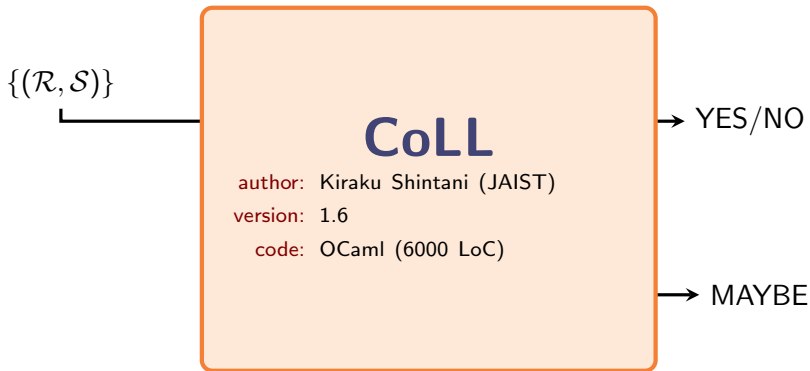
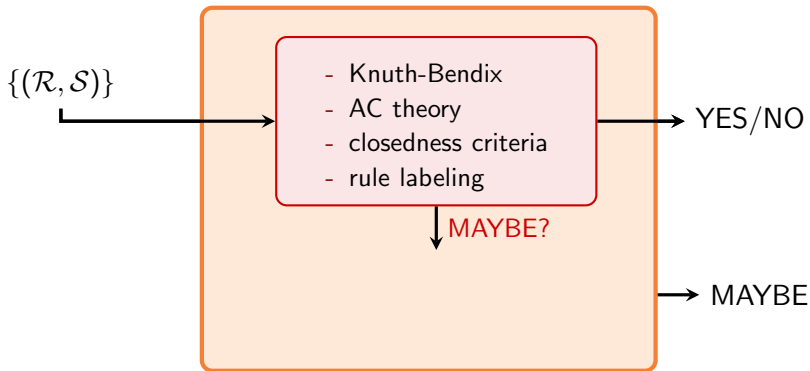


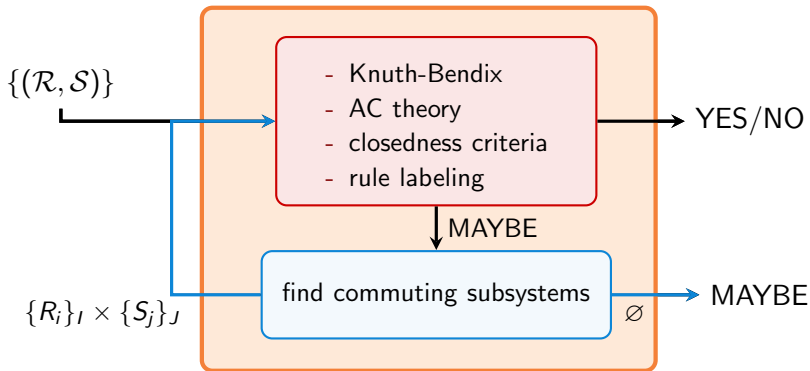
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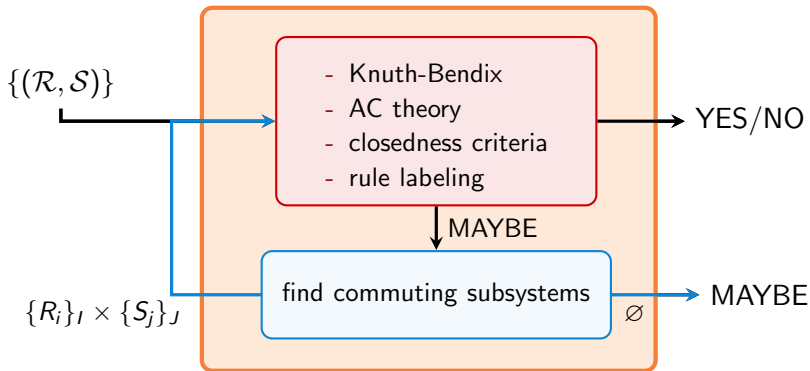
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- left-linearity is often essential for commutation

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supported several closedness criteria

## 1 commutation

- almost parallel closedness (Toyama 1988)

## 2 self commutation (confluence)

- extension of parallel closedness (Toyama 1981)
- simultaneous closedness (Okui 1998)
- upside parallel closedness (Ohta and Oyamaguchi 1997)
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