

FIT'09 – Novi Sad
Semantics of Programming Languages
Assignments

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Deepen the study of one of the subjects presented in the course, solve one the following exercises.

- Propose an small-step SOS for IMP. Sketch a proof that small-step and big-step SOS agree with each other.
- Propose a denotational semantics for a **repeat** command

repeat c until b .

- Determine whether the following pair of processes are bisimilar:
 - $(rec X = \alpha.X) \parallel (rec Y = \bar{\alpha}.Y)$ and $rec X = ((\alpha.X) + (\bar{\alpha}.X) + (\tau.X))$.
 - $\tau.((\alpha.nil) + (\beta.nil))$ and $(\tau.\alpha.nil) + (\tau.\beta.nil)$

prove your claims.

Reference. The formal semantics of programming languages. G. Winskel, MIT Press.