Structure of Programming Languages I: Denotational Semantics

Assignments

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Please return the completed results by February 1. Clip them together using this sheet as the cover, put the report in an envelope, address it to me, and put it into some university mail box. If there are problems, feel free to contact me per email. Do not forget to denote your name, Matrikelnummer and Studienkennzahl (SKZ).

1. Define syntax and denotational semantics of a multi-branch conditional

   ```
   case E of
     I_0: C_0
     I_1: C_1
     ...
     default: C
   end
   ```

   where E denotes an expression yielding an integer value, I_i denotes an integer literal, C_i and C denote commands such that C_i is executed if E equals I_i, and C is executed, otherwise. List the design decisins that must be made.

2. Extend the Hoare calculus by a verification rule for above statement and show the soundness of the rule with respect to the denotational semantics of the command.