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theory Example
  imports Hnr_Diff_Arr Hnr_Array "HOL-Library.Code_Target_Nat" Definition_Utils
begin

definition example_1 where
  "example_1 xs = do {
    let c1 = List.length xs;
    let c2 = 2;
    let c3 = c1 < c2;
    if c3 then do {
      let c4 = 1;
      let c5 = xs[c4 := c4];
      Some c5
    } else do {
      let c6 = 2;
      let c7 = xs[c6 := c6];
      Some c7
    }
  }"

synth_definition example_1_arr is [hnr_rule_arr]:
  "hnr (array_assn xs xsi) (¤ :: ?'a Heap) ?Γ' (example_1 xs)"
  unfolding example_1_def
  by hnr_arr

end
```