

CandidateKnots@n gives the sorted list of all
irreducible planar minimal alternating knot diagrams with n crossings.

CandidateKnots@n_Integer := CandidateKnots@n =

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If[n == 0, {MDT[]}, Block[{k, l, p, y = {}},  
  For[p = 0, p < n!, p++, k = MDT[];  
    Do[Delete[Range@n, {List@@k}^l]  
      [[Mod[p, (n - i + 1)!] / (n - i)! + 1]]  
      // AppendTo[k, #] &;  
    If[2 k[[1]] - 1 > (Abs[2 i - 1 - 2 k[[i]]]  
      // Min[#, 2 n - #] &), p += (n - i)! - 1;  
    Goto@1];  
    If[k[[-1]] ≤ i, Do[List@@k[[j];;]] ∪ {}  
      // If[# == Range[j, i] || # == Range[j, i] - 1, p += (n - i)! - 1;  
      Goto@1] &, {j, If[i == n && n > 1, 2, 1], i}]], {i, n}];  
  If[PlanarGraphQ@KnotGraph@k && k === Minimal@k, AppendTo[y, k]];  
  Label@1];  
y]]];
```