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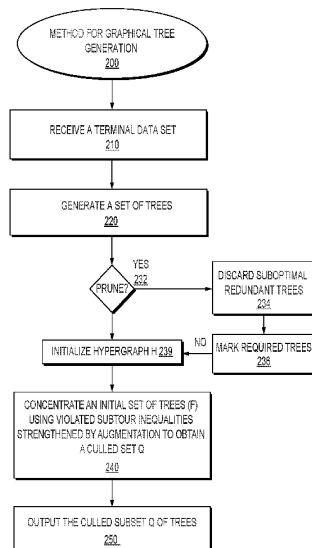


FIG. 2

(57) **Abstract:** Computer-implemented methods, systems and computer-readable storage medium for graphical tree generation between terminal points are provided which include augmenting one or more subtours. A method includes steps of receiving a terminal data set and generating an initial set of trees based on the terminal data set. Other steps include concatenating the initial set of trees to obtain a culled subset of trees that meet or exceed concatenation criteria, and outputting the culled subset of trees as a graph spanning the terminal points in the terminal data set. The concatenating includes augmenting one or more subtours by adding one or more vertices to strengthen violated inequalities. In one system a graph engine is configured to generate a graph spanning terminal points in the terminal data set based on an augmentation that adds one or more vertices to strengthen one or more violated subtour inequalities (S).



WO 2023/004129 A1