title: 树形结构与扁平结构相互转换

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tags: Javascript

## description: 树形结构与扁平结构相互转换

## 扁平数据转树结构

```javascript
/**
 * const arr = [
 *   { id: 2, name: 'B', pid: 0 },
 *   { id: 3, name: 'C', pid: 1 },
 *   { id: 1, name: 'A', pid: 2 },
 *   { id: 4, name: 'D', pid: 1 },
 *   { id: 5, name: 'E', pid: 2 },
 *   { id: 6, name: 'F', pid: 3 },
 *   { id: 7, name: 'G', pid: 2 },
 *   { id: 8, name: 'H', pid: 4 },
 *   { id: 9, name: 'I', pid: 0 }
 * ];
 *
 * */
function toTree(list) {
  let result = [];
  // 将数组转成对象形式
  const obj = list.reduce((res, v) => {
    res[v.id] = v;
    return res;
  }, {});
  list.forEach(l => {
    let parent = obj[l.pid];
    if (parent) {
      if (!parent.children) { parent.children = [] }
      parent.children.push(l);
    } else {
      result.push(l);
    }
  })
  return result;
}

toTree(arr);
// 结果:
//
//      9     7    3 -- 6
//     /     /    /
//   0 -- 2 -- 1 -- 4 -- 8
//          \
//           5
```

## 树结构扁平化

```javascript
function flatten(data) {
  return data.reduce((arr, { children = [], ...rest }) =>
    arr.concat([rest], flatten(children)), []
  )
}
```

## 源码位置

[tree.js](tree.js)