

## 添付

### コード

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<html>
<head>
<script language="JavaScript">
//<!--
Array.prototype.indexOf = function (value) {
  for (var i = 0; i < this.length; i += 1) {
    if (this[i] == value) return i;
  }
  return -1;
};
Array.prototype.remove = function (value) {
  var index = this.indexOf(value);
  if (index < 0) return false;
  this.splice(index, 1);
  return true;
};
Array.prototype.deeppcopy = function () {
  var other = [];
  for (var i = 0; i < this.length; i += 1) {
    var v = this[i];
    if (v.constructor == Array) {
      other[i] = v.deeppcopy();
    } else {
      other[i] = v;
    }
  }
  return other;
};

var div = function (a, b) {
  return (a - (a % b)) / b;
};

var init = function () {
  initInput();
  initSample();
};

var initInput = function () {
  var sourceDiv = document.getElementById("source");
  var questionId = "question";
  var questionTable = createSudokuTable(questionId);
  sourceDiv.appendChild(questionTable);
  for (var i = 0; i < 9; i += 1) {
    for (var j = 0; j < 9; j += 1) {
      var cid = questionId + i + "" + j;
      var cell = document.getElementById(cid);
      var iid = "source" + i + "" + j;
      var input = document.createElement("input");
      input.id = iid;
      input.size = 1;
      cell.appendChild(input);
    }
  }
};

var initSample = function () {
  var sample = [
    [8,0,7,
     0,6,0,
     5,0,1],
    [0,0,1,
     0,0,0,
     2,7,0],
    [0,0,3,
     0,9,0,
     6,0,0],
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        [0,0,3,
        6,0,2,
        1,5,0],
        [5,0,0,
        0,0,8,
        3,0,0],
        [0,0,0,
        0,1,0,
        2,0,0],

        [9,0,0,
        0,0,0,
        4,7,0],
        [1,3,0,
        0,0,4,
        0,8,5],
        [8,0,6,
        9,5,7,
        0,0,2]
    ];
    setSample(sample);
};

var clearSample = function () {
    var sample = [
        [0,0,0,
        0,0,0,
        0,0,0],
        [0,0,0,
        0,0,0,
        0,0,0],
        [0,0,0,
        0,0,0,
        0,0,0],
        [0,0,0,
        0,0,0,
        0,0,0],

        [0,0,0,
        0,0,0,
        0,0,0],
        [0,0,0,
        0,0,0,
        0,0,0],

        [0,0,0,
        0,0,0,
        0,0,0],
        [0,0,0,
        0,0,0,
        0,0,0],

        [0,0,0,
        0,0,0,
        0,0,0]
    ];
    setSample(sample);
};

var setSample = function (sample) {
    var id = "source";
    for (var i = 0; i < 9; i += 1) {
        for (var j = 0; j < 9; j += 1) {
            var value = sample[i][j];
            var iid = id + i + "" + j;
            var input = document.getElementById(iid);
            if (value == 0) {
                input.value = "";
            } else {
                input.value = "" + value;
            }
        }
    }
};

var createSudokuTable = function (id) {
    var outTable = document.createElement("table");
    outTable.id = id;
    outTable.border = "1";
    var index0 = 0;
    for (var oRow = 0; oRow < 3; oRow += 1) {
        var outRow = outTable.insertRow(oRow);
    }
};

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    for (var oCol = 0; oCol < 3; oCol += 1) {
        var outCol = outRow.insertCell(oCol);
        var inTable = document.createElement("table");
        inTable.id = id + index0;
        inTable.border = "1";
        var index1 = 0;
        for (var iRow = 0; iRow < 3; iRow += 1) {
            var inRow = inTable.insertRow(iRow);
            for (var iCol = 0; iCol < 3; iCol += 1) {
                var inCol = inRow.insertCell(iCol);
                var inDiv = document.createElement("div");
                inCol.appendChild(inDiv);
                inDiv.id = id + index0 + "" + index1;
                //inDiv.innerHTML = "0";
                index1 += 1;
            }
        }
        outCol.appendChild(inTable);
        index0 += 1;
    }
}
return outTable;
};

var solve = function () {
    clearResult();
    var data = [];

    var id = "source";
    for (var i = 0; i < 9; i += 1) {
        for (var j = 0; j < 9; j += 1) {
            var iid = id + i + "" + j;
            var input = document.getElementById(iid);
            var value = 0;
            if (input.value.length > 0) {
                value = parseInt(input.value);
            }
            var x = (i % 3) * 3 + j % 3;
            var y = (div(i, 3)) * 3 + div(j, 3);
            var index = y * 9 + x;
            data[index] = value;
        }
    }
    solver(data);
};

var solver = function (data) {
    for (var i = 0; i < 81; i += 1) {
        if (data[i] != 0) continue;
        var t = [false, false, false, false, false, false, false, false, false];
        var iDiv0s = div(i, 9);
        var iMod0s = i % 9;
        var iDiv0s1s = div(i, 27);
        var iMod0sDiv1s = div(i % 9, 3);
        for (var j = 0; j < 81; j += 1) {
            if (div(j, 9) == iDiv0s ||
                j % 9 == iMod0s ||
                (div(j, 27) == iDiv0s1s && div(j % 9, 3) == iMod0sDiv1s)) {
                t[data[j]] = true;
            }
        }
    };
    for (var j = 1; j <= 9; j += 1) {
        if (t[j]) continue;
        data[i] = j;
        solver(data);
    }
    data[i] = 0;
    return;
}
showResult(data);
};

var resultCount = 0;

var showResult = function (data) {
    var resultDiv = document.getElementById("result");
    resultCount += 1;
    var resultId = "solution" + resultCount + "th";
    var resultTable = createSudokuTable(resultId);
    resultDiv.appendChild(resultTable);

    for (var i = 0; i < 81; i += 1) {

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var x = i % 9;
var y = div(i, 9);
var n = div(y, 3) * 3 + div(x, 3);
var m = (y % 3) * 3 + x % 3;

var cid = resultId + n + "" + m;
var cell = document.getElementById(cid);
var cellDiv = document.createElement("div");
cellDiv.innerHTML = "" + data[i];
cell.appendChild(cellDiv);
}
resultTable.style.margin = 10;
};

var clearResult = function () {
    resultCount = 0;
    var resultDiv = document.getElementById("result");
    resultDiv.innerHTML = "";
};
//-->
</script>
</head>
<body onload="init()">
    <form id="input">
        <div id="source">

            </div>
            <input type="button" id="" value="solve" onclick="solve()" />
            <input type="button" id="" value="clear" onclick="clearSample()" />
        </form>
        <div id="result">
        </div>
    </body>
</html>

```