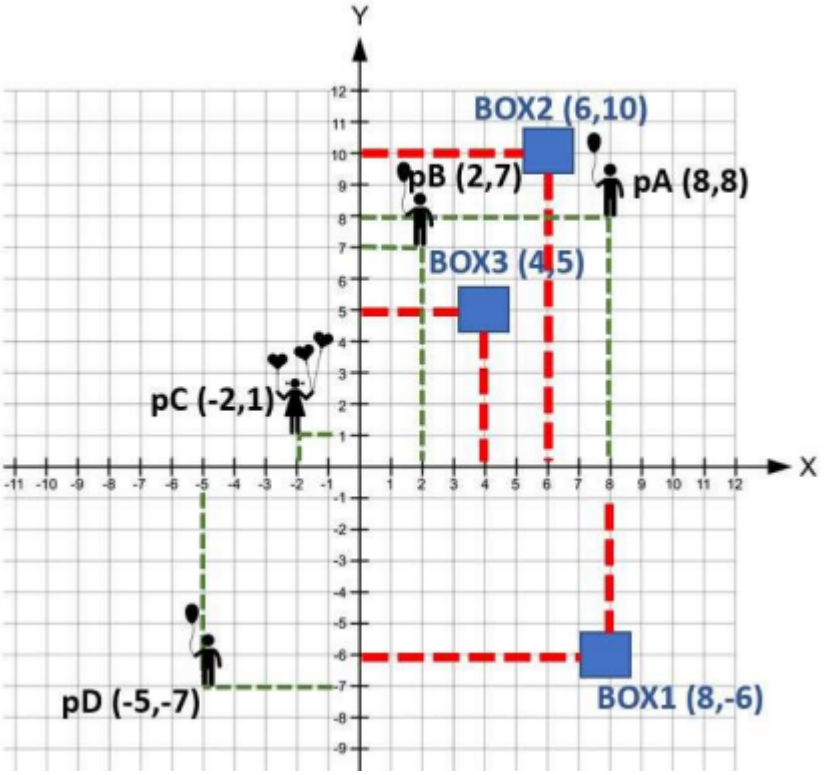



- In this exercise , we have to find for each kid that plays in that garden the closest place to hide from the rain . The hiding places are randomly distributed.
- The hiding places are represented as boxes and the Kids are represented by points .
- The output that will be generated will be simply a line containing the kid and the corresponding box .

**Code :**

```
// Safae Boufker


console.log("Kids Box exercice !");
const { Console } = require("console");
const { cpuUsage } = require("process");
// box counters
let bxCounter=3;
let pointCounter=4;
```

```
// list of boxes
let boxList = [{
    Bname:"box1",
    x:8,
    y:-6,
    },
    {
        Bname:"box2",
        x: 6,
    y: 10,

    },{
        Bname:"box3",
    x: 4,
    y: 5,


  }]
  // list of points (kid's positions)
  let PointList = [{
      Pname:"pA",
    x: 8,
    y: 8
  }, {
    Pname:"pB",
    x: 2,
    y: 7
  }
,
{
    Pname:"pC",
    x: -2,
    y: 1
  },
  {
    Pname:"pD",
    x: -5,
    y: -7
  }]
  //  distance formula
  function getDiaDist(PointList){
    return Math.sqrt(Math.pow(PointList.x,2) + Math.pow(PointList.y,2))
  }
  // get distance between two- points
  function getDistance(p1,p2){
    return getDiaDist({x:p1.x - p2.x, y:p1.y - p2.y});
  }
  // get the closest point
  function getNearestPoint(boxList,PointList){

        result = boxList[0];
        var listOfObjects = [];
        console.log(boxList);
        //console.log(pointCounter);
    for (let i = 0; i < pointCounter; i++) {
        let min = Infinity;
```

```
        let min = Infinity;
        let plist = PointList[i];
        console.log(plist);

    boxList.forEach(a => {
      let dist = getDistance(a,plist);
     console.log(a.Bname +" "+dist)
      if(dist < min){
        min = dist
        result = plist.Pname +" "+a.Bname;


      }
    })
    listOfObjects.push(result);


}
 //  line containing the box corresponding to each kid
return listOfObjects ;
  }

console.log(getNearestPoint(boxList,PointList));
```

**Output :**

```
node /tmp/86jfL85F8k.js
Kids Box exercice !
[ { Bname: 'box1', x: 8, y: -6 },
  { Bname: 'box2', x: 6, y: 10 },
  { Bname: 'box3', x: 4, y: 5 } ]
{ Pname: 'pA', x: 8, y: 8 }
box1 14
box2 2.8284271247461903
box3 5
{ Pname: 'pB', x: 2, y: 7 }
box1 14.317821063276353
box2 5
box3 2.8284271247461903
{ Pname: 'pC', x: -2, y: 1 }
box1 12.206555615733702
box2 12.041594578792296
box3 7.211102550927978
{ Pname: 'pD', x: -5, y: -7 }
box1 13.038404810405298
box2 20.248456731316587
box3 15
[ 'pA box2', 'pB box3', 'pC box3', 'pD box1' ]
```

**SQL :**

- **Create table Kid and Box :**

```
CREATE TABLE Kid(
    ID   int primary key,
    name varchar,
    x integer,
    y integer
);
```

**PopulateTable Kid :**

```
INSERT INTO Kid VALUES ('1', 'John', '1','2');
INSERT INTO Kid VALUES ('2', 'Mike', '3','4');
INSERT INTO Kid VALUES ('3', 'Bill','5','6');
```

**Display records of table Kid :**

SQL Statement:

```
select * from Kid
```

Edit the SQL Statement, and click "Run SQL" to see the result.

Run SQL »

Result:

Number of Records: 3

| ID | name | x | y |
|---|---|---|---|
| 1 | John | 1 | 2 |
| 2 | Mike | 3 | 4 |
| 3 | Bill | 5 | 6 |

**Create table box :**

```
CREATE TABLE Box (
ID integer,
x integer,
y integer,
PRIMARY KEY (ID));
```

**Populate table box :**

```
INSERT INTO Box VALUES ('1', '1','2');

INSERT INTO Box VALUES ('2', '3','4');

INSERT INTO Box VALUES ('3', '4','5');
```

**Records of Table box :**

SQL Statement:

```
select * from Box
```

Edit the SQL Statement, and click "Run SQL" to see the result.

Run SQL »

Result:

Number of Records: 3

| ID | x | y |
|---|---|---|
| 1 | 1 | 2 |
| 2 | 3 | 4 |
| 3 | 4 | 5 |

**Join tables and display of the id and Name :**

SQL Statement:

```
SELECT  Kid.ID,name
   FROM Kid
     JOIN Box
   ON Kid.ID = Box.ID;
```

Edit the SQL Statement, and click "Run SQL" to see the result.

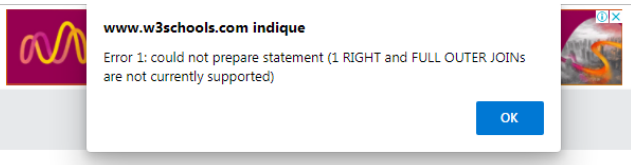
Run SQL »

Result:

Number of Records: 3

| ID | name |
|---|---|
| 1 | John |
| 2 | Mike |
| 3 | Bill |

**Ps : in order to display all the rows from both tables  I should have used the full join but it was not supported :**




SQL Statement:

```
SELECT  Kid.ID,name
   FROM Kid
    FULL JOIN Box
   ON Kid.ID = Box.ID;
```

Edit the SQL Statement, and click "Run SQL" to see the result.

Run SQL »

Result:

The Try-SQL Editor