

## 字节跳动2018校招前端方向（第三批）

1、以下函数用于找到整数矩阵matrix中，元素之和最大的n行m列的子矩阵的元素之和。请指出程序代码中错误的地方（问题不止一处，请尽量找出所有你认为错误的地方），并在不新增代码行的情况下将问题修复。

```
1  int maxSubmatrixSum(std::vector<std::vector<int>> matrix,
2                      int n, int m) {
3  int base_sum;
4  for (int i = 0; i < n; i++){
5      for (int j = 0; j < m; j++){
6          base_sum += matrix[i][j];
7      }
8  }
9  int result = 0;
10 for (int i = 0; i + n < matrix.size(); i++) {
11     if(i > 0){
12         for (int y = 0; y < m; y++){
13             base_sum += matrix[i + n][y] - matrix[i - 1][y];
14         }
15     }
16     int real_sum = base_sum;
17     if (real_sum > result) {
18         result = real_sum;
19     }
20     for (int j = 0; j + m < matrix.size(); j++) {
21         for (int x = 0; x < n; x++) {
22             real_sum += matrix[x][j + m] - matrix[x][j - 1];
23         }
24         if (real_sum > result) {
25             result = real_sum;
26         }
27     }
28 }
29 return result;
30 }
```

参考答案

```
1 int maxSubmatrixSum(std::vector<std::vector<int>> matrix,
```

```

2         int n, int m) {
3     int base_sum;
4     for (int i = 0; i < n; i++){
5         for (int j = 0; j < m; j++){
6             base_sum += matrixi;
7         }
8     }
9     int result = 0;
10    for (int i = 0; i + n < matrix.size(); i++) {
11        if(i > 0){
12            for (int y = 0; y < m; y++){
13                base_sum += matrixi + n - matrixi - 1;
14            }
15        }
16        int real_sum = base_sum;
17        if (real_sum > result) {
18            result = real_sum;
19        }
20        for (int j = 0; j + m < matrix.size(); j++) {
21            for (int x = 0; x < n; x++) {
22                real_sum += matrixx - matrixx;
23            }
24            if (real_sum > result) {
25                result = real_sum;
26            }
27        }
28    }
29    return result;
30 }

```

## 2、有一个推箱子的游戏,一开始的情况如下图:

```

.....
.....E.....
..##.....#####
#####.....#####
.....
.....
.....S.....#####
.....0.....
.....

```

上图中, '.' 表示可到达的位置, '#' 表示不可到达的位置, 其中 S 表示你起始的位置, 0表示初始箱子的位置, E表示预期箱子的位置, 你可以走到箱子的上下左右任意一侧, 将箱子向另一侧推动。如下图将箱子向右推动一格;

```

..S0.. -> ...S0.

```

注意不能将箱子推动到'#'上, 也不能将箱子推出边界;

现在, 给你游戏的初始样子, 你需要输出最少几步能够完成游戏, 如果不能完成, 则输出-1。

#### 参考答案

思路: 利用广度搜索求最短路径, 队列中的每个位置是人的位置和箱子的位置的集合, 用四维数组记录走过的路程状态。首先判断人是否已经走到箱子了, 位置重合时带箱子一起走, 直到箱子的位置和终点的位置重合, 输出路程。

代码:

```
、  
  
let [n,m] = readline().split(' ').map(item=>Number(item));  
let map = [],start={},end={};  
for(let i=0;i<n;i++){  
  let line = readline().split('')  
  map.push(line)  
  let fstart = line.indexOf('S'),fend = line.indexOf('E'),fbox = line.indexOf('O');  
  if(fstart !== -1){  
    start.px = i;  
    start.py = fstart;  
  }  
  if(fend !== -1){  
    end.x = i;  
    end.y = fend;  
  }  
  if(fbox !== -1){  
    start.bx = i;  
    start.by = fbox;  
  }  
}  
  
//初始化搜索队列和记录步数的四维数组  
let queue = start;  
for(let i=0;i<n;i++){  
  locationi;  
  for(let j=0;j<m;j++){  
    locationi=[];  
    for(let k=0;k<n;k++){  
      locationik  
      for(let p=0;p<m;p++){  
        locationik=-1  
      }  
    }  
  }  
}
```

```

locationstart.pxstart.bx=0
//移动数组
const walk = [{x:0,y:1},{x:0,y:-1},{x:1,y:0},{x:-1,y:0}]
let now={}//存储当前人和箱子的位置
while(queue.length){
  now = queue.shift();
  //如果到达终点，则输出
  if(now.bx === end.x && now.by === end.y){
    console.log(locationnow.pxnow.bx);
    break;
  }
  for(let move of walk){
    //移动人，判断人越界
    let player={x:now.px+move.x, y:now.py+move.y}
    if(player.x>=0 && player.x<n && player.y>=0 && player.y<m && mapplayer.x!=='#'){
      let box = {}
      //如果移动后人与箱子重合，也移动箱子
      if(player.x === now.bx && player.y === now.by){
        //判断箱子越界
        box={x:now.bx+move.x, y:now.by+move.y}
        if(box.x<0 || box.x>=n || box.y<0 || box.y>=m || mapbox.x==='#'){
          continue;
        }
      }
      //如果不重合，箱子不动
      else{
        box.x = now.bx;
        box.y = now.by;
      }
      //是否已经遍历过
      if(locationplayer.xbox.x<0){
        queue.push({px:player.x,py:player.y,bx:box.x,by:box.y});
        locationplayer.xbox.x = locationnow.pxnow.bx+1;
      }
    }
  }
}

if(now.bx!==end.x || now.by!==end.y){
  console.log(-1)
}
、

```

**3、有n个房间，现在i号房间里的人需要被重新分配，分配的规则是这样的：先让i号房间里的人全都出来，接下来按照 i+1, i+2, i+3, ... 的顺序依此**

往这些房间里放一个人，n号房间的的下一个房间是1号房间，直到所有的人都被重新分配。

现在告诉你分配完后每个房间的人数以及最后一个人被分配的房间号x，你要求出分配前每个房间的人数。数据保证一定有解，若有多解输出任意一个解。

参考答案

、  
首先分析题目可知，i号房间的人数在分配完成后必然是最少的，先统计出最少的人数min（这说明循环了几轮），  
让每个房间减去min以减少循环次数，从最后一个分配的房间循环往前推，记录次数count，在循环过程中第一个是0  
的房间就是i号房间，其人数为 $\text{min} * n + \text{count}$ ；  
p.s要注意房间人数要用long ☐ int型  
、

参考答案

、  

```
var readline = require('readline')
const rl = readline.createInterface({
  input : process.stdin,
  output : process.stdout
})

var k = -1
var r = 0

rl.on('line',function(line){
  if(k== -1){
    k = line.split(' ')
  }else{
    r = line.split(' ')

    var j = k[1]-1;//最后一位在数组的位置
    var min = r[0]
    for (var i = 1; i < r.length; i++) {
      if(parseInt(r[i])<parseInt(min)){
        min = r[i]
      }
    }
    if(min!=0){
      for (var i = 0; i < r.length; i++) {
        ri - min
      }
    }
  }
})
```

```

        var add = 0;
        var i = j
        while(i != j+1){
            if(i== -1){
                i = r.length-1
            }
            if (r[i]==0) {
                break
            }
            r[i]--;
            add++;
            i--;
        }
        r[i]=add+r.length*min
        str = r.join(' ');
        console.log(str);

        k = -1
        r = 0
    }
})
、

```

#### 4、请按要求书写一个图片上传的弹窗组件，弹窗的样式要求如下：

##### 1、样式要求

- (1) 宽： 668px, 高： 608px, 圆角5px, 边框1px solid #ccc
- (2) 弹窗垂直居中, 左右居中
- (3) 标题栏高： 50px , 右边的x不能使用图片, 请使用css3画出, 标题文字颜色: 红色
- (4) 列表元素的高: 110px , 宽:110px, 边框 1px solid #ccc
- (5) 中间“添加”按钮的图片地址: <https://p1.pstatp.com/large/3ecd0004b6bdeff4c48d>

整体样式效果如下图所示：



## 2、功能要求

- (1) 点击“添加”按钮弹出文件选择框， 选择图片（要求只能选择png、jpeg、jpg三种图片）
- (2) 选择图片后列表增加一张图片缩略图展示（此时图片未上传到服务器）
- (3) 点击上传按钮将当前选择的图片上传到图片服务器（只要求上传当前选择的一张图片，如能实现多个同时上传更佳）， 上传的图片的接口地址: [https://mp.toutiao.com/profile\\_v2/](https://mp.toutiao.com/profile_v2/)

接口说明：接口只接收并且处理二进制文件。

请编码实现。

(注：不支持本地IDE)

### 参考答案

```
<!DOCTYPE html>
<html>

<head>
<title>11</title>
<link rel="stylesheet"
href="http://cdn.static.runoob.com/libs/bootstrap/3.3.7/css/bootstrap.min.css">
<script src="http://cdn.static.runoob.com/libs/jquery/2.1.1/jquery.min.js"></script>
<script src="http://cdn.static.runoob.com/libs/bootstrap/3.3.7/js/bootstrap.min.js">
</script>
<style>
div.dlg {
```

```
width: 668px;
height: 608px;
position: absolute;
margin-left: -334px;
margin-top: -304px;
top: 50%;
left: 50%;
display: block;
z-index: 2000;
border: 1px solid #ccc;
border-radius: 5px;
}

div.header {
box-sizing: border-box;
height: 50px;
border: none;
border-bottom: 1px solid #ccc;
padding: 10px 10px 2px 30px;
}

div.hdTitle {
float: left;
border-bottom: 5px solid crimson;
height: 100%
}

.close {
float: right
}

/ 关闭按钮/

.hdClose {
width: 40px;
height: 40px;
position: relative;
}

.hdClose:before,
.hdClose:after {
content: ”;
position: absolute;
top: 30%;
width: 15px;
height: 1px;
background-color: #888;
-webkit-transform: rotate(45deg);
transform: rotate(45deg);
}

.hdClose:after {
-webkit-transform: rotate(-45deg);
transform: rotate(-45deg);
}

.main {
```



```

width: 100%;
height: 458px;
padding: 20px
}
img {
width: 110px !important;
height: 111px !important;
border: 1px solid #ccc;
margin: 0 15px 20px 0;
;
float: left;
}
img#imgUpload {
cursor: pointer
}
.footer {
width: 100%;
height: 50px;
/ border-top: 1px solid #ccc; /
}
.btn-gp {
width: 150px;
margin: 0 auto;
}
</style>
</head>

<body>

<div class="dlg">
<div class="header">
<div class="hdTitle">
<span style="color:crimson;font:bolder">上传照片</span>
</div>
<div class="close">
<div class="hdClose"></div>
</div>
</div>
<div class="main" id="main">

<input id="btnUpload" type="file" name="pic"
accept="image/png,image/jpeg,image/jpg/" style="display:none">
</div>
<div class="footer">
<div class="btn-gp">
<button class="btn btn-danger btn-lg" id="submit">上传</button>
<button class="btn btn-default btn-lg" id="cancel">取消</button>
</div>
</div>

```

</div>

<script>

var res = [];

\$("#imgUpload").on('click', function() {

\$("#btnUpload").click();

})

\$("#btnUpload").on('change', function(evt) {

if (!window.FileReader) console.log('该浏览器不支持文件预览功能');

console.log(evt);

var file = evt.target.files[0];

if (!file.type.match("image/[png|jpeg|jpg]")) {

alert('上传的图片必修是png,gif,jpg格式的! ');

ev.target.value = ""; //显示文件的值赋值为空

}

var reader = new FileReader(); // 创建FileReader对象

reader.readAsDataURL(file); // 读取file对象，读取完毕后会返回result 图片base64格式的结果

reader.onload = function(e) {

var tmp = '';

console.log(tmp);

\$("#main").prepend(tmp);

res.push(e.target.result);

}

\$("#submit").on('click', function() {

\$.ajax({

url: "https://mp.toutiao.com/profile\_v2/",

type: "post",

dataType: "string",

data: res.toString(),

headers: {

"Content-Type": "application/x-www-form-urlencoded"

},

success: function(data) {

alert("上传成功! ");

var tmp = '' +

'<input id="btnUpload" type="file" name="pic"

accept="image/png,image/jpeg,image/jpg/" style="display:none">'

\$("#main").html(tmp);

},

error: function() {

alert("上传失败，请重试! ");

}

```

});
})

$("#cancel").on('click', function() {
    var tmp = '' +
    '<input id="btnUpload" type="file" name="pic"
accept="image/png,image/jpeg,image/jpg/" style="display:none">'
    $("#main").html(tmp);
});
});
</script>
</body>

</html>
、

```

#### 参考答案

```

、
<!DOCTYPE html>
<html lang="en">

<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <meta http-equiv="X-UA-Compatible" content="ie=edge">
    <title>Document</title>
    <style>
        body {
            margin: 0;
        }

        .wrap {
            width: 100vw;
            height: 100vh;
            display: flex;
            background: rgba(0, 0, 0, 0.5);
            justify-content: center;
            align-items: center;
        }

        .upload {
            width: 668px;
            height: 608px;
            border-radius: 5px;

```

```
background: #fff;
border: 1px solid #ccc;
}
```

```
.title {
  height: 50px;
  border-bottom: 1px solid #ccc;
}
```

```
.title-name {
  margin-left: 25px;
  float: left;
  font-size: 15px;
  line-height: 50px;
  color: red;
}
```

```
.title-close::before {
  content: "\2716";
  color: #ccc;
}
```

```
.title-close {
  height: 50px;
  margin-right: 25px;
  display: flex;
  float: right;
  align-items: center;
}
```

```
.content {
  height: 458px;
  overflow: auto;
}
```

```
.content-item {
  width: 110px;
  height: 110px;
  margin: 10px;
  border: 1px solid #ccc;
  float: left;
}
```

```
.content-item-upload {
  width: 110px;
  height: 110px;
  margin: 10px;
  border: 1px solid #ccc;
  float: left;
```

```
position: relative;
cursor: pointer;
color: #888;
background: url('https://p1.pstatp.com/large/3ecd0004b6bdeff4c48d');
background-repeat: no-repeat;
border: 1px solid #ddd;
border-radius: 4px;
overflow: hidden;
*display: inline;
*zoom: 1
}

.content-item-upload input {
position: absolute;
font-size: 100px;
right: 0;
top: 0;
opacity: 0;
filter: alpha(opacity=0);
cursor: pointer
}

.footer {
height: 100px;
display: flex;
justify-content: center;
align-items: center;
}

.btn {
width: 85px;
margin: 0 10px;
border: 1px solid #ccc;
padding: 10px 10px;
border-radius: 5px;
text-align: center;
text-decoration: none;
display: inline-block;
font-size: 12px;
}

.btn-red {
background-color: red;
border: 1px solid red;
color: white;
}
</style>
</head>
```

```

<body>
  <div class="wrap">
    <div class="upload">
      <div class="title">
        <div class="title-name">上传图片</div>
        <div class="title-close"></div>
      </div>
      <div class="content" id='upload-list'>
        <div class="content-item"><img width="110px" height="110px" src="" />
      </div>
      </div>
      <div class="footer">
        <button class="btn btn-red" onclick="upload()">上传</button>
        <button class="btn">取消</button>
      </div>
    </div>
  </div>
  <script>
    const render = renderList => {
      let documentText = ''
      renderList.forEach(e => {
        documentText = documentText +
          <div class="content-item"></div>
      })
      documentText = documentText +
        `<a href="javascript:;" class="content-item-upload">
          <input id="file-upload" type="file" accept="image/png,image/gif"
name="file"/>
        </a>`
      document.getElementById('upload-list').innerHTML = documentText
      document.getElementById('file-upload').addEventListener('change', function
() {
        var file = this.files[0];
        var reader = new FileReader();
        let res = reader.readAsDataURL(file);
        reader.onloadend = e => {
          console.log(e.target.result)
          inputList.push({
            img: e.target.result
          })
          render(inputList)
        }
      })
    }
    const upload = () => {
      uploadList.forEach(e => {
        let formData = new FormData();
        formData.append("img", e);

```

```

        fetch("https://mp.toutiao.com/profile_v2/", {
            method: 'POST',
            body: formData
        });
    })

}
var inputList = []
var uploadList = []

window.onload = () => {
    render(inputList)
}
</script>
</body>

</html>
、

```

#### 参考答案

```

、
<!DOCTYPE html>
<html>
<head>
<title>弹窗组件</title>
<style>
.popup {
    position: absolute;
    width: 668px;
    height: 608px;
    border: 1px solid #ccc;
    border-radius: 5px;
    left: 0;
    right: 0;
    top: 0;
    bottom: 0;
    margin: auto;
}
.popup > .title {
    position: relative;
    height: 50px;
    box-sizing: border-box;
    color: red;
    margin: 0;
    font-size: 16px;
}

```

```
border-bottom: 1px solid #ccc;
padding-left: 20px;
line-height: 50px;
}
.popup > .title > .text {
  display: inline-block;
  height: 49px;
  border-bottom: 2px solid red;
  padding: 0 5px;
}
.popup > .title > .close {
  position: absolute;
  display: block;
  right: 20px;
  width: 20px;
  height: 20px;
  top: 15px;
  cursor: pointer;
}
.popup > .title > .close::after {
  content: ' ';
  position: absolute;
  display: block;
  width: 100%;
  height: 1px;
  background-color: #aaa;
  top: 10px;
  transform: rotate(45deg);
}
.popup > .title > .close::before {
  content: ' ';
  position: absolute;
  display: block;
  width: 100%;
  height: 1px;
  background-color: #aaa;
  top: 10px;
  transform: rotate(-45deg);
}
.popup > .content {
  display: flex;
  flex-wrap: wrap;
}
.popup > .content > img, .popup > .content > .label {
  width: 110px;
  height: 110px;
  border: 1px solid #ccc;
  margin: 20px 10px 0 20px;
```



```

}
.popup > .content > .label {
  cursor: pointer;
}
.popup > .content > .label > img {
  width: 100%;
  height: 100%;
}
.popup > .footer {
  display: flex;
  width: 100%;
  height: 70px;
  position: absolute;
  bottom: 0;
  left: 0;
  right: 0;
  border-top: 1px solid #ccc;
  justify-content: space-around;
  align-items: center;
}
.popup > .footer > .start-upload,
.popup > .footer > .cancel-upload {
  width: 70px;
  height: 30px;
  border: none;
  border-radius: 5px;
  outline: none;
  cursor: pointer;
}
.popup > .footer > .start-upload {
  background-color: red;
  color:aliceblue;
}
</style>
</head>
<body>
<div class="popup">
  <h1 class="title">
    <span class="text">上传图片</span>
    <span class="close"></span>
  </h1>
  <div class="content">
    <img src="" alt="" class="thump">
    <label for="upload-file" class="label">
      
      <input style="display: none;" id="upload-file" type="file"
accept=".png,.jpeg,.jpg" class="upload-file">
    </label>
  </div>

```

```
<div class="footer">
  <button class="start-upload">上传</button>
  <button class="cancel-upload">取消</button>
</div>
</div>
<script>
;(function () {

  const inputFile = document.getElementById('upload-file')
  const thump = document.getElementsByClassName('thump')[0]
  let file = null
  inputFile.addEventListener('change', function(event) {
    file = this.files[0]
    const reader = new FileReader()
    let base64 = ''
    reader.readAsDataURL(file)
    reader.onload = function (event) {
      base64 = reader.result
      thump.src = base64
    }
  })
  // https://mp.toutiao.com/profile_v2/
  const uploadBtn = document.getElementsByClassName('start-upload')[0]
  uploadBtn.addEventListener('click', function () {
    if (!file) return
    const xhr = new XMLHttpRequest()
    // xhr.setRequestHeader()
    xhr.open('post', 'https://mp.toutiao.com/profile_v2/')
    xhr.onload = function () {
      console.log(xhr.response)
    }
    const form = new FormData()
    form.append('file', file)
    xhr.send(form)
  })

})();
</script>
</body>
</html>
```