

2024年夏季《移动软件开发》实验报告

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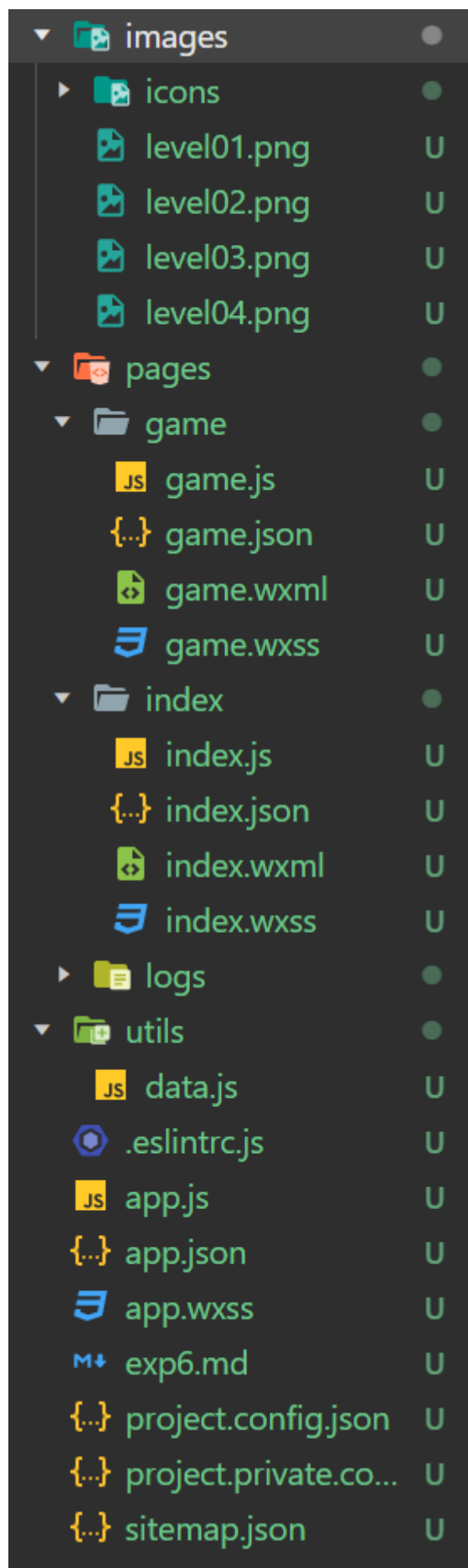
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本实验属于哪门课程？	中国海洋大学24夏《移动软件开发》
实验名称？	实验6：推箱子游戏
博客地址？	https://blog.csdn.net/reyselCampNou/article/details/141855530?spm=1001.2014.3001.5501
Github仓库地址？	https://github.com/ReyDelCampNou/wechatdev/tree/master/exp6

一、实验目标

1、学习使用快速启动模板创建小程序的方法；2、学习不使用模板手动创建小程序的方法。

二、实验步骤

1. 创建所需目录



2. 完成 index.wxml

```
<!--index.wxml-->
<view class='container'>
  <view class='title'>游戏选关</view>
  <view class='levelBox'>
    <view class='box' wx:for="{{levels}}" wx:key='levels[{{index}}]'
bindtap='chooseLevel' data-level='{{index}}'>
      <image src='/images/{{item}}'></image>
      <text>第{{index + 1}}关</text>
    </view>
  </view>
</view>
```

3. 完成 index.wxss

```
/**index.wxss**/
.levelBox{
  width: 100%;
}

.box{
  width: 50%;
  float: left;
  margin: 20rpx 0;
  display: flex;
  flex-direction: column;
  align-items: center;
}

image{
  width: 300rpx;
  height: 300rpx;
}
```

4. 完成 index.js (略去了部分自动生成函数)

```
// index.js
Page({

  /**
   * 页面的初始数据
   */
  data: {
    levels: [
      'level01.png',
      'level02.png',
      'level03.png',
      'level04.png'
    ]
  },

  chooseLevel: function(e){
    let level = e.currentTarget.dataset.level
    wx.navigateTo({
      url: '../game/game?level=' + level
    })
  },
})
```

5. 完成 game.wxml

```
<!--pages/game/game.wxml-->
<view class='container'>
  <view class='title'>第{{level}}关</view>
  <canvas canvas-id="myCanvas"></canvas>
  <view class='btnBox'>
    <button type='warn' bindtap='up'>↑</button>
    <view>
      <button type="warn" bindtap='left'>←</button>
      <button type="warn" bindtap='down'>↓</button>
      <button type="warn" bindtap='right'>→</button>
    </view>
  </view>
  <button type='warn' bindtap='restartGame'>重新开始</button>
</view>
```

6. 完成 game.wxss

```
canvas{
  border: 1rpx solid;
  width: 320px;
  height: 320px;
}

.btnBox{
  display: flex;
  flex-direction: column;
  align-items: center;
}

.btnBox view{
  display: flex;
  flex-direction: row;
}

.btnBox button{
  width: 90rpx;
  height: 90rpx;
}

button{
  margin: 10rpx;
}
```

7. 完成 `game.js` (略去部分自动生成的函数)

```
// pages/game/game.js
var data = require('../../utils/data.js')
var map = [
  [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]
]
var box = [
  [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]
]
var w = 40
var row = 0
var col = 0
```

```
Page({

  /**
   * 页面的初始数据
   */
  data: {
    level: 1
  },

  initMap: function(level){
    let mapData = data.maps[level]
    for (var i = 0; i < 8; i++){
      for (var j = 0; j < 8; j++){
        box[i][j] = 0
        map[i][j] = mapData[i][j]
        if(mapData[i][j] == 4){
          box[i][j] = 4
          map[i][j] = 2
        } else if (mapData[i][j] == 5){
          map[i][j] = 2
          row = i
          col = j
        }
      }
    }
  }
})
```

```

    }
  },

  drawCanvas: function(){
    let ctx = this.ctx
    ctx.clearRect(0, 0, 320, 320)
    for (var i = 0; i < 8; i++) {
      for (var j = 0; j < 8; j++) {
        let img = 'ice'
        if (map[i][j] == 1) {
          img = 'stone'
        } else if (map[i][j] == 3) {
          img = 'pig'
        }
        ctx.drawImage('/images/icons/' + img + '.png', j * w, i * w, w, w)
        if (box[i][j] == 4) {
          ctx.drawImage('/images/icons/box.png', j * w, i * w, w, w)
        }
      }
    }
    ctx.drawImage('/images/icons/bird.png', col * w, row * w, w, w)
    ctx.draw()
  },

  up: function(){
    if(row > 0) {
      if (map[row - 1][col] != 1 && box[row - 1][col] != 4) {
        row = row - 1
      } else if (box[row - 1][col] == 4) {
        if (row - 1 > 0) {
          if (map[row - 2][col] != 1 && box[row - 2][col] != 4) {
            box[row - 2][col] = 4
            box[row - 1][col] = 0
            row = row - 1
          }
        }
      }
    }
    this.drawCanvas()
    this.checkWin()
  },

  down: function(){
    if(row < 7) {
      if (map[row + 1][col] != 1 && box[row + 1][col] != 4) {
        row = row + 1
      } else if (box[row + 1][col] == 4) {
        if (row + 1 < 7) {
          if (map[row + 2][col] != 1 && box[row + 2][col] != 4) {
            box[row + 2][col] = 4
            box[row + 1][col] = 0
          }
        }
      }
    }
  },

```

```

        row = row + 1
    }
}
}
this.drawCanvas()
this.checkWin()
}
},

left: function(){
    if(col > 0) {
        if (map[row][col - 1] != 1 && box[row][col - 1] != 4) {
            col = col - 1
        } else if (box[row][col - 1] == 4) {
            if (col - 1 > 0) {
                if (map[row][col - 2] != 1 && box[row][col - 2] != 4) {
                    box[row][col - 2] = 4
                    box[row][col - 1] = 0
                    col = col - 1
                }
            }
        }
        this.drawCanvas()
        this.checkWin()
    }
},

right: function(){
    if(col < 7) {
        if (map[row][col + 1] != 1 && box[row][col + 1] != 4) {
            col = col + 1
        } else if (box[row][col + 1] == 4) {
            if (col + 1 < 7) {
                if (map[row][col + 2] != 1 && box[row][col + 2] != 4) {
                    box[row][col + 2] = 4
                    box[row][col + 1] = 0
                    col = col + 1
                }
            }
        }
        this.drawCanvas()
        this.checkWin()
    }
},

isWin: function(){
    for (var i = 0; i < 8; i++){
        for (var j = 0; j < 8; j++){
            if (box[i][j] == 4 && map[i][j] != 3){
                return false
            }
        }
    }
}
}

```



```

    }
  }
  return true
},

checkWin: function(){
  if (this.isWin()){
    wx.showModal({
      title: '恭喜',
      content: '游戏成功! ',
      showCancel: false,
      success(res){
        if (res.confirm){
          wx.navigateTo({
            url: '../index/index'
          })
        }
      }
    })
  }
},

restartGame: function(){
  this.initMap(this.data.level - 1)
  this.drawCanvas()
},

/**
 * 生命周期函数--监听页面加载
 */
onLoad(options) {
  let level = options.level
  this.setData({
    level: parseInt(level) + 1
  })
  this.ctx = wx.createCanvasContext('myCanvas')
  this.initMap(level)
  this.drawCanvas()
},
})

```

8. 完成 app.wxss

```
/**app.wxss**/  
.container{  
  height: 100vh;  
  color: #E64340;  
  font-weight: bold;  
  display: flex;  
  flex-direction: column;  
  align-items: center;  
  justify-content: space-evenly;  
}  
  
.title{  
  font-size: 18pt;  
}
```

9. 完成 data.js

```

var map1 = [
  [0, 1, 1, 1, 1, 1, 0, 0],
  [0, 1, 2, 2, 1, 1, 1, 0],
  [0, 1, 5, 4, 2, 2, 1, 0],
  [1, 1, 1, 2, 1, 2, 1, 1],
  [1, 3, 1, 2, 1, 2, 2, 1],
  [1, 3, 4, 2, 2, 1, 2, 1],
  [1, 3, 2, 2, 2, 4, 2, 1],
  [1, 1, 1, 1, 1, 1, 1, 1]
]

var map2 = [
  [0, 0, 1, 1, 1, 0, 0, 0],
  [0, 0, 1, 3, 1, 0, 0, 0],
  [0, 0, 1, 2, 1, 1, 1, 1],
  [1, 1, 1, 4, 2, 4, 3, 1],
  [1, 3, 2, 4, 5, 1, 1, 1],
  [1, 1, 1, 1, 4, 1, 0, 0],
  [0, 0, 0, 1, 3, 1, 0, 0],
  [0, 0, 0, 1, 1, 1, 0, 0]
]

var map3 = [
  [0, 0, 1, 1, 1, 1, 0, 0],
  [0, 0, 1, 3, 3, 1, 0, 0],
  [0, 1, 1, 2, 3, 1, 1, 0],
  [0, 1, 2, 2, 4, 3, 1, 0],
  [1, 1, 2, 2, 5, 4, 1, 1],
  [1, 2, 2, 1, 4, 4, 2, 1],
  [1, 2, 2, 2, 2, 2, 2, 1],
  [1, 1, 1, 1, 1, 1, 1, 1]
]

var map4 = [
  [0, 1, 1, 1, 1, 1, 1, 0],
  [0, 1, 3, 2, 3, 3, 1, 0],
  [0, 1, 3, 2, 4, 3, 1, 0],
  [1, 1, 1, 2, 2, 4, 1, 1],
  [1, 2, 4, 2, 2, 4, 2, 1],
  [1, 2, 1, 4, 1, 1, 2, 1],
  [1, 2, 2, 2, 5, 2, 2, 1],
  [1, 1, 1, 1, 1, 1, 1, 1]
]

module.exports = {
  maps:[map1, map2, map3, map4]
}

```

10. 完成 app.json

```
{
  "pages": [
    "pages/index/index",
    "pages/game/game"
  ],
  "window": {
    "navigationBarTextStyle": "white",
    "navigationBarTitleText": "推箱子游戏",
    "navigationBarBackgroundColor": "#E64340"
  },
  "style": "v2",
  "componentFramework": "glass-easel",
  "sitemapLocation": "sitemap.json",
  "lazyCodeLoading": "requiredComponents"
}
```

三、程序运行结果

主页





第1关



第2关



第3关



第4关

关卡详情页





重新开始

通关界面





四、问题总结与体会

通关后点击确定原本只是关闭弹窗，有点不符合常理，于是修改 `game.js` 中的 `checkWin` 函数，使点击完确定后直接返回首页。修改如下：

```
checkWin: function(){
  if (this.isWin()){
    wx.showModal({
      title: '恭喜',
      content: '游戏成功!',
      showCancel: false,
      success(res){
        if (res.confirm){
          wx.navigateTo({
            url: '../index/index'
          })
        }
      }
    })
  }
},
```