

1/12 会议记录

2017年1月12日 16:29

目前任务：

- 1.确定游戏主题和策划
- 2.学习Unity 3D的基础知识

初期工作：

美工：

初期的场景及人物模型demo

【华工平面图】

http://wenku.baidu.com/link?url=pvDTe75thFC3wvvFMAZW7XTbkaaZvF0s1gt2VkWwkAUldimilhnk5CaG1teagC63vVo aCbXvo1zhgP1L2dt2IZE2Oc_SydLFRCL51m59zjK

编程：

熟悉C#编程

C# 快速入门

<http://m.blog.csdn.net/article/details?id=7603346&from=message&isappinstalled=1>

音效：

熟悉相关制作软件

参考：

参考用书：Unity 5 权威

<https://pan.baidu.com>

开发引擎：Unity 3D 5.0

Github仓库会由我稍后创建

集中开发期暂定于:1.28

DDL：

- ☐ By 10-Feb-2017: Submit M
- ☐ 3 weeks after Project Sub Year (TBA)

Staff	Alias	Github username	Unavailable Period	Re
Art Designer	@Aleon	FutakiLin	NaN	制
	@ZCcee		-1.21 1.27-1.30	同

讲解 (随书资源下载链接为 :
<https://pan.baidu.com/s/1c1IxEbu>)

创建然后邀请你们

-2.7

Mid-Term Report (by email)
Submission and Group Presentation: Lunar New

responsibility

制作游戏模型及UI等

上

Unity 5 权威讲解全书目录

第1章 Unity 5简介

1.1 Unity 3D 游戏引擎

1.2 Unity 5 的优势

1.2.1 支持多平台

1.2.2 集成开发环境

1.2.3 所有功能免费

1.2.4 中间件内置

1.2.5 开放社区

1.2.6 资源商店

1.3 使用Unity 制作的

1.4 下载Unity

1.4.1 安装Unity

1.4.2 选择Unity 版本

1.4.3 注册并登录

1.5 Unity 界面

1.5.1 视图

1.5.2 工具栏

1.5.3 设置快捷键

1.6 小结

阅读

第2章 准备游戏开发

2.1 开发的游戏引擎及

录：

引擎的诞生

境
费

的游戏

许可
Unity

开发顺序

Programming	@Ciaran	Ciaranshu	1.14-1.24 & 2.8-2.13	制
	@Angel	linanqi	1.14-1.28	制
	@华工教务		18-20	游 中
	@谢欣言			制
Sound Effect	@Arthur		1.24-2.1	音



Project

Data Structure

制作子弹发射效果（第5章）
制作敌对角色（第6章）
游戏管理器，动态障碍物，道具逻辑等（第8章）和中期报告
制作主人公角色（第4章）
特效设计

- 2.1 开发的游戏环境
- 2.2 新建项目
- 2.3 设置Unity IDE
- 2.4 系统管理项目视图
- 2.5 导入角色模型
- 2.6 创建资源商店账户
- 2.7 从项目视图访问资源商店
- 2.8 从资源商店下载资源
- 2.9 小结

第3章 制作游戏场景

- 3.1 3D模型
- 3.2 纹理
- 3.3 材质
- 3.4 应用纹理
- 3.5 着色器以及基于物理的渲染
- 3.6 表现地面阴影——烘焙光照贴图
- 3.7 预设
- 3.8 用预设制作墙体
- 3.9 光照
- 3.10 天空的表现方法
- 3.11 小结

第4章 制作主人公角色

- 4.1 空游戏对象
- 4.2 导入3D模型并设置
- 4.3 组件
- 4.4 生成脚本

开及关闭

图

号

资源商店

资源

物理的着色

—使用法线贴图

去

设置选项

(Semester one, 2016-2017)

Group Project

Prepared by
Date

The purpose is to enable the student to solve complex problems using the technique learnt in data structure course.

Group

A group should contain FOUR students. One member should be the Group Leader.

Grading

Report	20%
Program	50%
Design	20%
Correctness	10%
Apply data structure appropriately	20%
Presentation	15%
Creativity	15%

Report

Two reports should be submitted: Mid-Term Report and Final Report.

i) Mid-Term Report

The mid-term report should describe the preliminary design of the project in the following aspects:

- **Introduction and Objectives**
Introduce the project you select and describe its objectives
- **Requirements and Functionality**
State the requirements and the functions clearly. You should state any assumptions
- **Logic Flow (Preliminary version)**
Use the flow chart (more preferable) or pseudo-code to express the main parts of your problem.
- **Relation between Data Structure**

y Dr. Patrick Chan
: December, 2016

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be selected as Team

report.

f your system in the

d also mention any

ss the logic flow of

4.1 上/下移动事件

4.5 下载键盘输入值

4.6 角色移动

4.7 单位向量

4.8 角色旋转：Rota

4.9 摄像机追踪：Fo

4.10 Legacy动画系

4.11 动画片段

4.12 动画控件

4.13 动画合成

4.14 实时阴影

4.15 运用投影器制作

4.16 运用平面网格制

4.17 小结

第5章 制作子弹发射效

5.1 准备子弹模型

5.2 Rigidbody组件

5.3 设置物理引擎属

5.4 Collider组件

5.5 碰撞感知条件

5.6 碰撞事件

5.7 Tag应用

5.8 子弹发射逻辑

5.9 制作子弹发射轨

5.10 应用粒子系统

5.11 制作爆炸效果并

5.12 随机使用纹理

5.13 声音：AudioS

ate

ollow Cam

统

作阴影

制作阴影

果

性：Physics Manager

迹：Trail Renderer

并设置爆炸威力

ource与AudioListener

State how you apply the technique of data structure

Data Structure – Group Project

- **Plan and Schedule**

The detail plan and schedule on how to complete the your project

- ii) **Final Report**

Refer to “ReportRequirement.pdf”.

Program

Remember to follow good programming techniques:

- Reduce the program complexity
- Meaningful variable names
- Use comments in your program as documentation
- Document each program (e.g. write down the objective and function)

Presentation

Each group will be allocated 10 minutes for oral presentation. Every group member should involve in the presentation.

5.14 枪口火焰效果

5.15 小结

第6章 制作敌对角色

6.1 Mecanim动画系

6.2 导入怪兽3D模型

6.3 转换为Mecanim

6.4 动画控制器

6.5 导航：怪兽追击

6.6 实现人工智能

6.7 怪兽攻击例程

6.8 怪兽被袭时的反

6.9 血迹效果

6.10 贴图：地面上的

6.11 赋予怪兽攻击打

6.12 特定层之间的碰

6.13 优化Mecanim

6.14 怪兽停止攻击

6.15 怪兽停止攻击

6.16 怪兽的死亡处理

6.17 小结

第7章 Unity UI

7.1 Canvas对象

7.2 Rect Transform

7.3 anchoredPositi

7.4 Image组件

-
: Muzzle Flash

系统

型
n动画

例程

应

的血迹效果

技能

碰撞感知

动画角色的骨骼结构

: Tag

: Delegate、Event

里

n组件

ion属性

Submission

The following material should be submitted:

i) Mid-Term Report

1. A report in WORD / PDF format should be sent to Dr. Chan (patrickchan@scut.edu.cn). The subject title of the email should be **DS Group Course (Group XX) : Mid-Term Report**. XX is your group number and will be informed you later.

ii) Final Submission

1. A ZIP file which contains a softcopy of the report in WORD format, program codes and presentation slides in POWERPOINT format should be sent to Dr. Chan (patrickchan@scut.edu.cn). The subject title of the email should be **DS Group Course (Group XX) : Final Submission**. XX is your group number and will be informed you later.
2. A hardcopy of the report before the presentation.

If you submit the work after the deadline you will incur a deduction of 10% full mark for each day of delay.

Data Structure – Group Project

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ail should be “**DS**
s the group number

WORD format, all
T format should be
t title of the email
mission”. XX is the

ction of 10% of the

- 7.5 RawImage 组件
- 7.6 Button组件
- 7.7 Text组件
- 7.8 Scroll Rect组件
- 7.9 制作游戏分数UI
- 7.10 制作生命条
- 7.11 小结

第8章 游戏管理器

- 8.1 怪兽出现逻辑
- 8.2 访问游戏管理器
- 8.3 单例模式
- 8.4 对象池
- 8.5 共享函数：声音
- 8.6 小结

第9章 灵活运用射线投

- 9.1 射线投射
- 9.2 油桶爆炸
- 9.3 实现激光束

第10章 导航仪高级技

- 10.1 动态障碍物
- 10.2 分离网格链接
- 10.3 用户自定义生成

处理

射

巧

或分离网格链接

Important Dates

By 25-Dec-2016

Submit the selected topic and a group
following information

- Name
- Student ID
- Mobile Number
- Email

By 10-Feb-2017

Submit Mid-Term Report (by email)

3 weeks after
Lunar New Year (TBA)

Project Submission and Group Present

list with the

ation

第11章 光照贴图、灯光

11.1 光照

11.2 灯光探测器

11.3 小结

第12章 场景分离与合并

12.1 场景分离

12.2 场景合并

第13章 Unity内置网络

13.1 网络游戏的定义

13.2 网络游戏的物理

13.3 网络通信协议

13.4 Unity内置网络

13.5 Unity网络游戏

13.6 开发网络游戏

13.7 小结

第14章 使用Photon C

14.1 第二代Unity网

14.2 第三方网络游

14.3 PhotonNetwo

14.4 制作坦克大战游

14.5 安装Photon U

14.6 将坦克大战游

光探测器

并

游戏

义

理结构

功能

步骤

cloud制作网络游戏

络游戏引擎UNET

戏引擎

ork游戏引擎

游戏

nity Networking插件

为Platform Cloud服务

Data Structure – Group Project

Project Topics: Select one of them as your project topic. A
allowed after discussing with me.

1. Ecosphere (Closed Ecosystem)

Simulate a miniature world. In this miniature world, there are many di
existence of species is affected by two factors: its preys and predators
spend its energy to chase the prey (cost of prey). After predators hurt
life of the preys becomes zero, it can eat the preys and gain their ener
they have enough energy, they will reproduce next generation after
they have no energy, they will die. The animals/plants will also die
The program allows users to set the initial number of species and sho
is required.

Minimum Requirements:

The following species have been included:

- **Grass**
 - o Characteristic: Grow in
- **Cow**
 - o Characterist

- 14.6 将坦克游戏更改
- 14.7 制作游戏大厅
- 14.8 战地细节功能
- 14.9 评分并显示
- 14.10 在Unity中连接
- 14.11 小结

第15章 提升游戏真实感

- 15.1 布娃娃系统
- 15.2 触屏
- 15.3 通过触屏移动
- 15.4 小结

any modification is

fferent species. The
s. Predators need to
preys and make the
gy (gain of prey). If
a period of time. If
if they are too old.
ws the results. GUI

ic: Strong and

又为Photon Cloud版本

接数据库

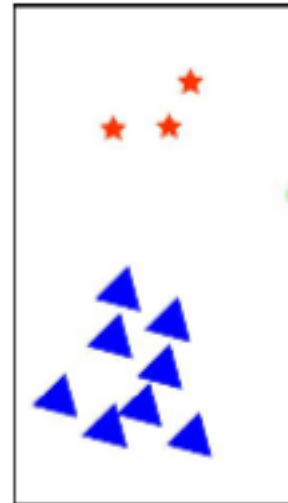
惑

- anywhere
- Predator: Cow
- Prey: No
- Cost of be preyed: Little
- Gain after being preyed: Small
- Life-span: Short
- Parameter: growth time

- running fast
- Predator: Ti
- Prey: Grass
- Prey ability:
- Cost of be p
- Gain after b
- Life-span: L
- Parameter: i

- **Tiger**

- Characteristic: Strong and running very fast
- Predator: /
- Prey: Cow
- Prey ability: High
- Cost of be preyed: Large
- Gain after being preyed: Medium
- Life-span: Long
- Parameter: initial number



GUI is required. Your program should represent the number of each dot in each period of time.

Extension Ideas

- Add more different species, e.g. dog, human, sheep...
- Add the environmental factor, e.g. sun shine, raining...
- Enhance the GUI by adding animation

Data Structure – Group Project

ger

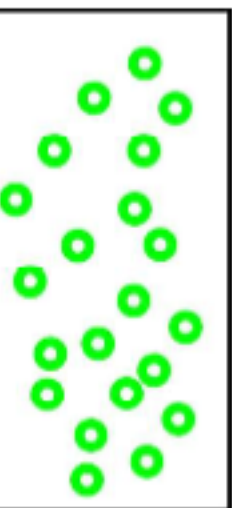
Low

preyed: Large

being preyed: Large

long

initial number



h species by using

2. Tomb Raider

Create a Tomb Raider game. Egypt Tomb has a lot of treasures. On into the tomb and wants to get the treasures. However, the tomb is treasures are containing in a chamber. The raider needs to find out the the tomb safely. Enemies and traps are waiting for him. Fortunately, equipment that can help him.

Minimum Requirements:

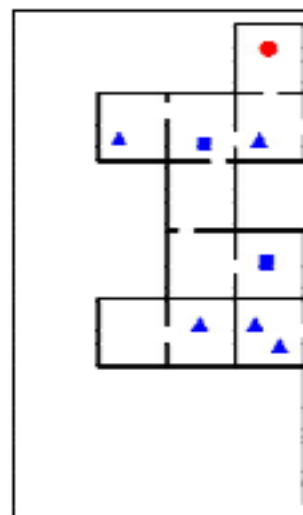
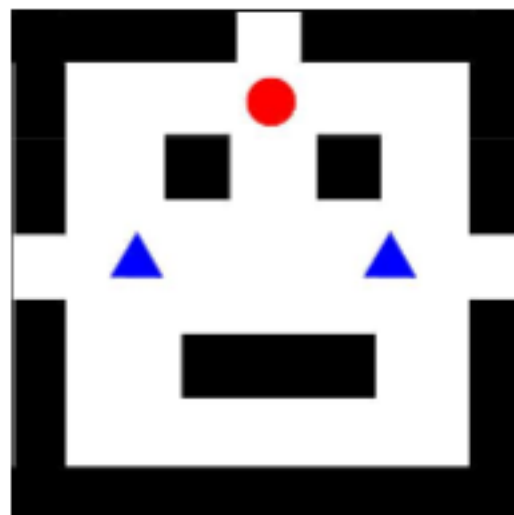
The Raider has a life bar. It is 100% originally and the Raider will The raider has gun with limited bullets and food which can recover

The following enemies should be included: Pharaoh, Guard and M different abilities and powers. One kind of trap should be include the raider move slowly in a particular period of time.

You should keep track the status of all enemies. Such as, if a mu chamber, it should not appear again when the raider gets back to th

The number of each enemy should be adjusted by users. The n should not be smaller than 20.

GUI is required. The GUI of your program should at least have the



One day, a raider gets
like a maze and the
treasures and leave
the raider has some

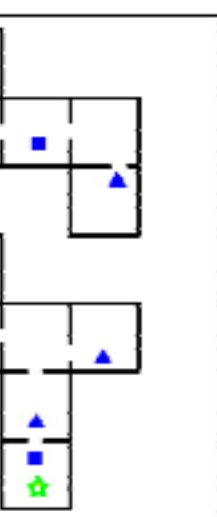
die if it becomes 0.
his life bar.

Mummy. They have
ed and it will make

mummy is killed in a
at chamber later.

number of chambers

the following quality:



Extension Ideas

- Add more different equipments, enemies and traps
- Increase the complexity of the maze, e.g. three or more dimensions
- Enhance the GUI by adding animation

Data Structure – Group Project

3. SCUT Student Daily Life

Simulate the daily life of all SCUT students in South Campus. By using SCUT South Campus provided by Google, you can create a virtual map of SCUT South Campus. You can define and name each building. Paths should be created between buildings (note that there may be more than one path between two buildings. E.g. there are two ways to go from B2 to A2. Each path should have a capacity, length, and cost (e.g. staircase or slope). You can simulate the daily life by using the information of the size of the class and the time-table. For example, students on different lessons at a particular time and will go to canteen during the lunch and

Minimum Requirements:

The following buildings should be created in virtual map:

ions, door and key

5

ng the satellite map
l map. You need to
dings. Be reminded
e are more than one
and difficulty (e.g.
ormation of classes:
ent class will attend
l dinner times.

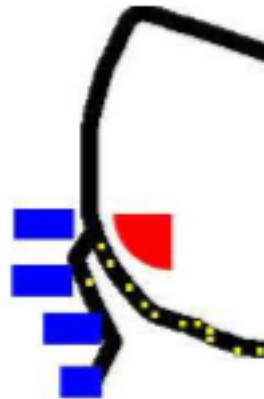
The following buildings should be created in virtual map.

- All A buildings
- All C buildings
- All Student Canteens

The major paths between them should be created

Students in at least 5 different classes should be simulated. Students should have the same schedule. He/she should go to a particular time. You can assume all students are very logical. They will pick the minimum travel time when choices are available. You can also randomly for students to live.

GUI is required. The GUI of your program should at least have the



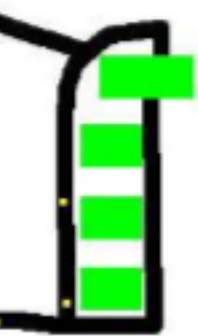
Extension Ideas

- Consider more building or in more detail level, e.g. each floor,
- Consider different types of persons, e.g. research students and
- Simulate the activities in leisure time
- Improve the quality of GUI
- Monitor a particular student daily life

Data Structure – Group Project

ent in the same class
r place at particular
ck up the path with
o assign C buildings

e following quality.



each class room
teachers

4. Flight Ticket Booking System

Write a flight ticket booking system.

Minimum Requirements:

Booking system is a well defined problem. You should check system by yourself to get the user requirements in detail.

The following functions should be contained:

- Reserve the ticket
- Cancel/Confirm Reservation
- Book the ticket
- Change / Cancel Booking
- Waiting List
- List all passengers / Search passenger
- Show / Search flight schedule

The following features should be supported:

- Support different types of seats (First Class, Business and Economy)
- Seating plan should be provided for users to select the seats. Different users should have different seating plan. You should have at least 3 types of seating plans.
- Frequent Flyer Program. Passengers have different priorities.

GUI is preferable.

Extension Ideas

- Additional services should be reasonable and suitable for the user.

and study the real

nomy)
different airplanes
of airplanes

sers

Data Structure – Group Project

5. Student Score System

Write a student score system.

Minimum Requirements:

Student score system a well defined problem. You should check system by yourself to get the user requirements in detail.

There are two types of users: teachers and students. Each user has

and study the real

ould login to the

There are two types of users: teachers and students. Each user should have a specific set of functions in the system.

- Teachers
 - o Insert / Modify / Delete / Search a subject
 - o Input / Modify / Delete / Search a score of a student for a subject
 - o Enquiry the result of a student / subject
- Students
 - o Enquiry his/her the result of a subject
 - o Calculate the GPA
 - o Select subjects for next semester

The saved data should be stored in a text file

GUI is preferable.

Extension Ideas

- Additional services should be reasonable and suitable for the user

and login to the

a subject

sers

6. Library System

Write a system for a Library.

Minimum Requirements:

Library system is a well defined problem. You should check system by yourself to get the user requirements in detail.

The following functions should be contained:

- Insert / Modify / Delete / Search a book
- Insert / Modify Delete / Search a borrower
- Borrow / Reserve / Return a book
- Search a book
- Search a borrowing record

The following features should be supported:

- Support different types of seats (First Class, Business and Economy)
- Seating plan should be provided for users to select the seats. Different airlines have different seating plan. You should have at least 3 types of seating plan.
- Frequent Flyer Program. Passengers have different priorities.

The saved data should be stored in a text file

GUI is preferable.

Extension Ideas

- Additional services should be reasonable and suitable for the user

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different airplanes
of airplanes

sers

Data Structure – Group Project

