SD3985
Computer Game Development
Final Report

Group1

Group members:

Tsang Chi Kin 16044506D

Lin Han 16078325D

XUE Yuxi 16097547D

Table of Contents

Project Title

Tutank Revival

Game Overview

Game Concept
Tutank Revival mainly is an adventure and strategy game.

Feature Set
1. Enemies defeating
2. Items collecting
3. Minigame solving

Genre
A mixture of adventure, strategy, player need to against the enemies and tackle the minigame.

Target Audience
The game target audience are children and teenagers as the game art style is cartoon, cute and pixel.

Game Flow Summary
First of all, there is a start page with game menu. Player can choose to enter the game, the introduction page or the development team page.
After start of the game, player enter to a big map with enemies and doors. When player enter a door, a minigame will be triggered. Player will get items after winning the minigame.
Finally, by collecting different items, player can finally escape from the pyramid.

Look and Feel
As the game background is in the Ancient Egypt, so the game looks like during that period. Some Ancient Egypt Legends is used. The visual style and game graphic is pixel style for easier game development.

Project Scope

Number of locations

There are only one location in the game, which is the pyramid in the Ancient Egypt.

Number of levels

There is a big map with 6 minigames and one final game.

Number of characters

Including the player, there are four characters: The Pharaoh, The Queen, The Anubis and The Archaeologist

Number of weapons

The weapons is varies as it is different in each minigame.

Mission/challenge Structure

The main mission of the player is collecting those 5 items in different minigame.

There are different missions in those minigame, like survival, beating the boss, shooting. Some of the minigame are quite challenging.

In the bag map, as player do not have any defense method, so need to dodge the enemies with strategies.

Puzzle Structure

Dividing in to two part: Main Map and minigame.

In the Main Map, player need to dodge the guards to enter the room or open the door.

In the minigame part, player need to finish the task offered by the room, like surviving in amount of time, scoring an amount and defeating the boss.

Objectives

The main objective is to escape from the pyramid.

Play Flow

Discover the big map => Enter a minigame room => Collect items => Defeat the boss => Escape from the pyramid

Physics

The physic of the game world is the same in real life, because of the camera is top view, so it may be difficult to feel about the physic in the game.

Movement

General Movement

Up, down, left right to move the character

Other Movement   attack enemies, throw objects, pick up items

Objects

Picking Up Objects

Player will collect different objects, like key, diamond, etc., while discovering the main map and after finish the minigames.

Actions

Switches and Buttons

One of the switches will be the key and door. Key will be found after finish one of the minigame. Then this key will be used to open another door for another minigame.

Reading

The instruction of each minigame will be displayed before player start the minigame.

Game Options

The play order of the minigame may affect the game play. As player will get an item after winning the minigame. It may be special items like increasing damage to enemies, getting extra-life or shield to protect from an attack. It may change the level of the whole game while beating the boss. So, player can think of the most effective way to finish the game.

Replaying and Saving

The player only have three lifes. If player lose in the minigame, it will deduct one life. If the player use up the lifes, it will game over and need to replay all minigame. There will not be any save in the game.

Game Design

Story and Narrative - Specific details like scripts and cut scenes may not be in   this document but be in the Story Bible.

Background story

The story background takes place in Egypt in the 21st century. The Pharaoh(Tutankhamun) was resurrected and escaped from the Chamber of Secrets. After the resurrection, the Pharaoh needs to break through and escape the maze (pyramid) and re-ruling Egypt. The Pharaoh will encounter enemies in the maze. They are the god of death(Anubis), Cleopatra and modern archaeologists (Zahi Hawass). Pharaoh needs to enter different secret rooms to successfully crack the game. He wants to defeat the big boss and re-ruling Egypt.

Plot Elements

In the beginning of the game, player can see the introduction of the game. Introduce the protagonist (player) and the person you need to avoid. After press the start, player will enter to the map. Players must begin to avoid the enemy and complete the mission. Characters

Character #1   The Pharaoh(Tutankhamun)

Back story

> Tutankhamun was an Egyptian pharaoh of the 18th dynasty, during the period of Egyptian history known as the New Kingdom or sometimes the New Empire Period. In the 21st century, the mummy was resurrected, and Tutankhamun was given "Eternal life." Therefore, after the resurrection, he had to escape the pyramid and re-rule the people of modern Egypt.

Personality

Young, smart, innovative

Physical characteristics

Tutankhamun was still wear his mummy mask because he just came out of the tomb. The cobra on the mask is representative declares power to the world. He does not wear clothes above his waist, and he wear a linen skirt on his lower body.

Animations

In the Map: Stand, turn left, turn right, run, jump, catch

In the mini game 1: Stand, turn left, turn right, run, catch
In the mini game 2: Shotting
In the mini game 3: Shotting, turn left, turn right
In the final game 4: Stand, turn left, turn right, run, jump, catch

Special Abilities

Collect gems for more health.

Relevance to game story

Tutankhamun is the main character on this game. He is also the character that the player needs to manipulate.

Relationship to other characters

Tutankhamun is the main attacker of other characters. Therefore, player needs to rely on movement to avoid enemy attacks.

Character #2 Cleopatra——the queen of Tutankhamun

Back story

> The queen in Egyptian can replace Pharaoh as a ruler. After the death of Tutankhamun, Cleopatra has been replacing him in ancient Egypt. After the resurrection of Tutankhamun, Cleopatra was also revived together. So she wanted to attack Pharaoh, prevent him from escaping from the pyramid, and robbed the throne again.

Personality

> Intellectual, beautiful and sexy

Physical characteristics

> Cleopatra wearing a cobra headgear, it is representative declares power to the world.The red lipstick shows her personality of sexy. She is also wearing the skirt of the Egyptian traditional empress.

Animations

> In the Map: Turn left, turn right, Release poison gas

Special Abilitie

> Release poison gas to kill the Tutankhamun

Character #3   Anubis—— the god of death

Back story

Anubis is the Greek name of a god associated with mummification and the afterlife in ancient Egyptian religion. One of his prominent roles was as a god who ushered souls into the afterlife. That's why he won't let Tutankhamun easily resurrected because he need his heart to calculated weight. During the game, he will attack Tutankhamun.

Personality

Impartial, serious, doom

Physical characteristics

He is a man with a wolf's head. The unique black color is the color of carrion and the black soil of the Nile Valley. The symbol of him is focuses on life and death.

Animations

In the Map: Turn left, turn right, Shooting poisonous arrows

Special Abilities

Shooting poisonous arrows to kill the Tutankhamun

Character #4　Zahi Hawass——Archaeologists

Back story

In the 21st century, people discovered the existence of the golden plaque. Za Hawass is one of the archaeologists who have entered the pyramid to do research.He needed the body of the Pharaoh to do research, so he pursued Pharaoh in order to bring it back to the modern laboratory.

Personality

Crazy, focused, cruel

Physical characteristics

He is dressed the general archaeologist clothing, and the hat to blocks the sun. Sometime, he will holding excavated equipment.

Animations

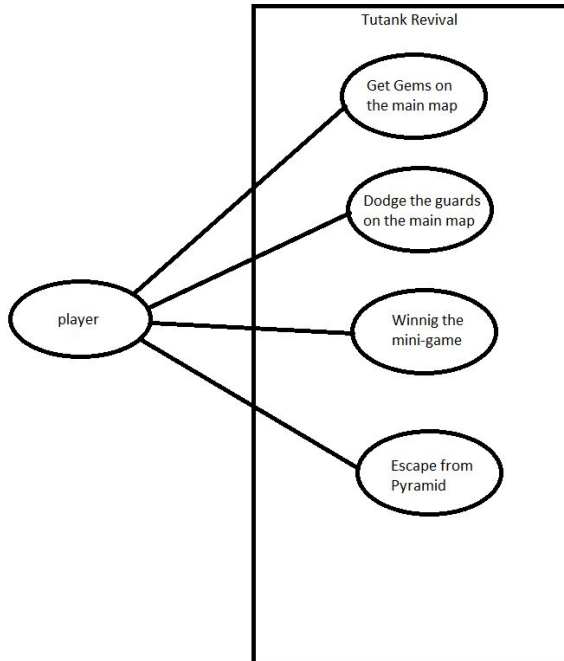In the Map: Turn left, turn right, Waving the excavating knife
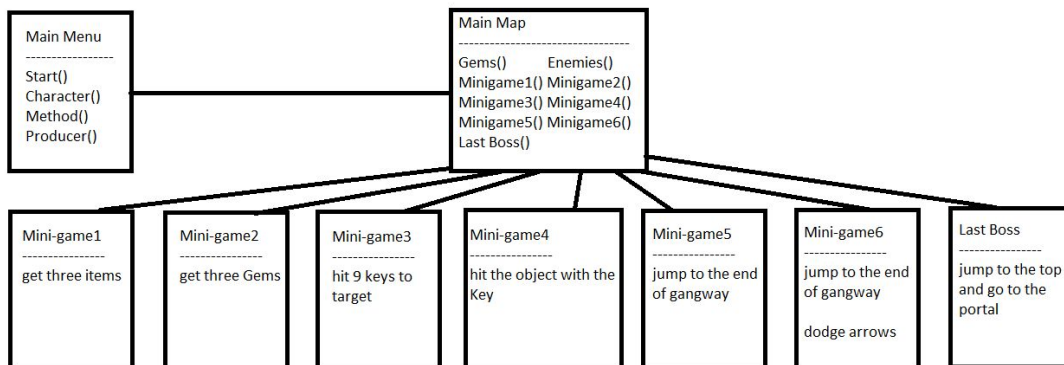

Special Abilities

Waving the excavating knife to kill the Tutankhamun

Game Technical Design

Use case diagram

Class diagram

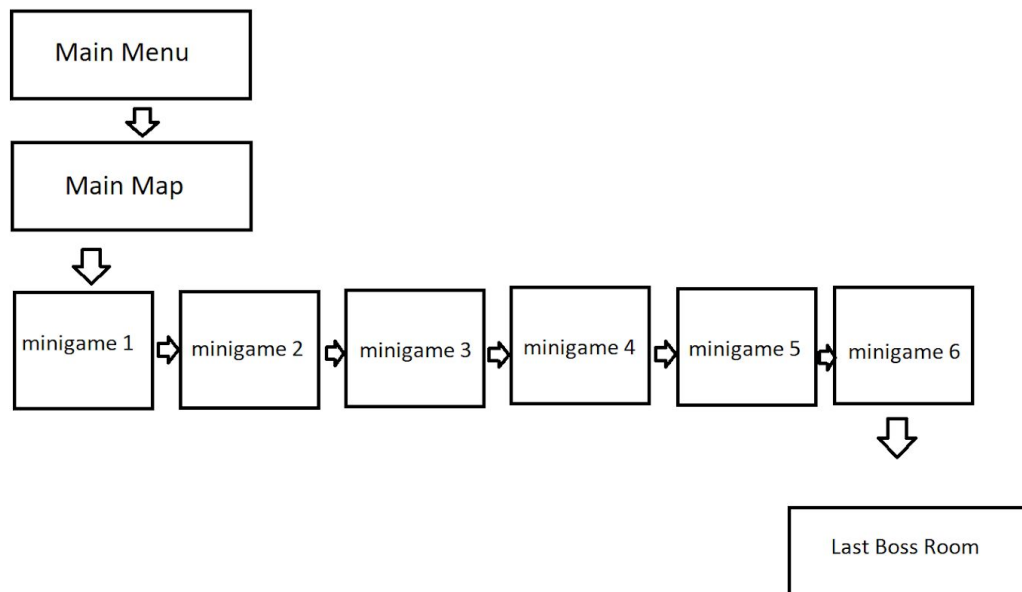## Sequence diagram/communication diagram

Main Menu

Main Map

Mini-game and Last Boss

Click start button

Enter the door and play mini-game

Finish that mini-game

Player dead and need to refresh

Player finish the game and show the ending scene
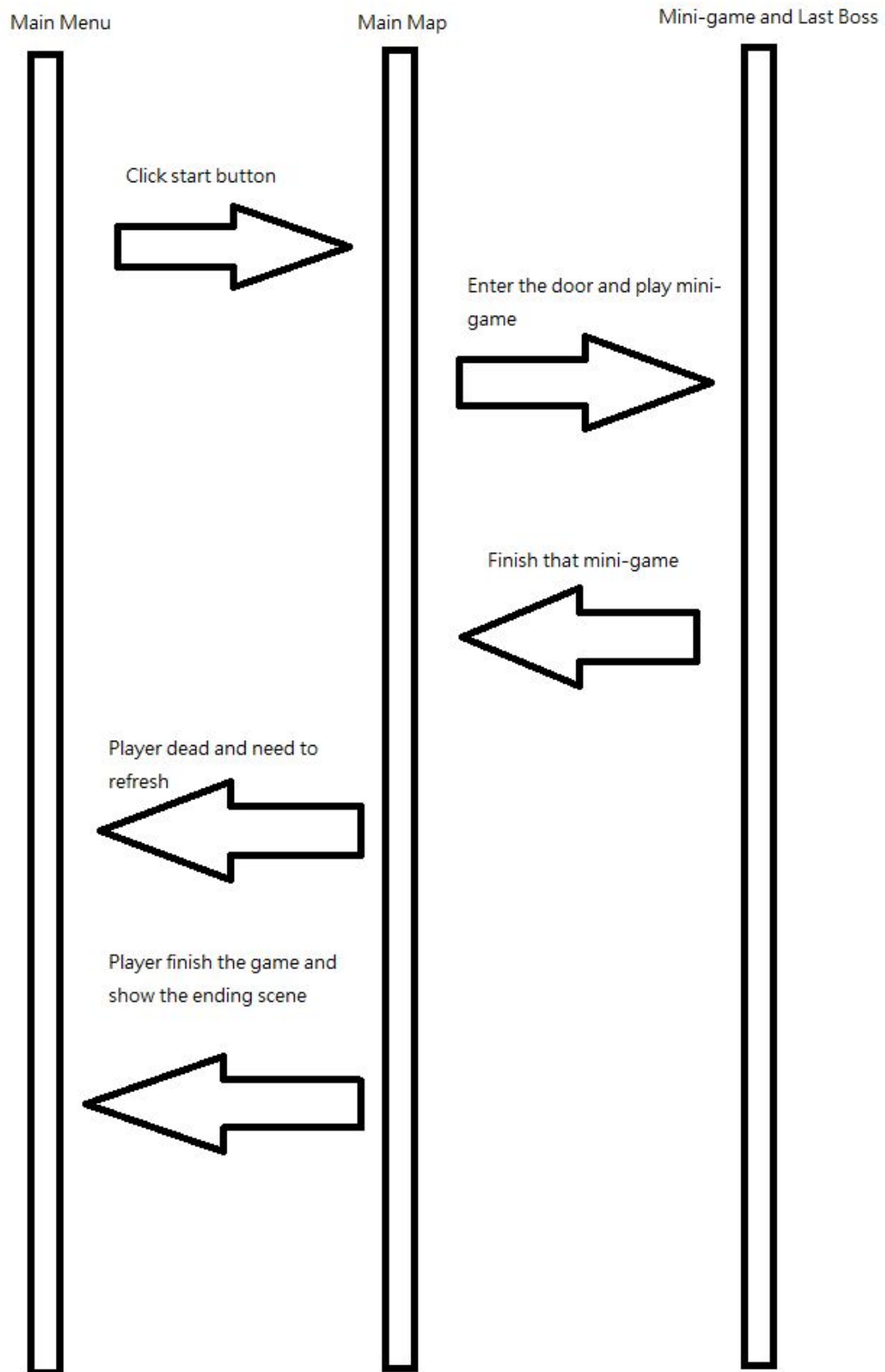
State machine diagram

```
┌─────────────────┐
│   Main Menu     │
└─────────────────┘
         ⇩
┌─────────────────┐
│   Main Map      │
└─────────────────┘
         ⇩
┌──────────┐  ┌──────────┐  ┌──────────┐  ┌──────────┐  ┌──────────┐  ┌──────────┐
│minigame 1│⇨│minigame 2│⇨│minigame 3│⇨│minigame 4│⇨│minigame 5│⇨│minigame 6│
└──────────┘  └──────────┘  └──────────┘  └──────────┘  └──────────┘  └──────────┘
                                                                          ⇩
                                                              ┌─────────────────┐
                                                              │ Last Boss Room  │
                                                              └─────────────────┘
```

Main Menu

Main Menu contain 4 buttons cooresponding to 4 different scene: Main Map, Character, Method and Producer.

```javascript
//start button function
start.on("pointerover",()=>{
    stick.setVisible(true);
    stick.x = start.x+start.width-50;
    stick.y = start.y;
    startOption.play();
})
start.on("pointerout",()=>{
    stick.setVisible(false);
})
start.on('pointerdown', function (pointer) {
    cameras.main.fade(500, 0, 0, 0);
    cameras.main.on('camerafadeoutcomplete', function () {

        scene.start('mainMap');
    }, this);
})
```

When player move the cursor to the button, the torch will appear next to the button and a button sound will be played. When player click on the button, the camera fade and the cooresponding scene start.
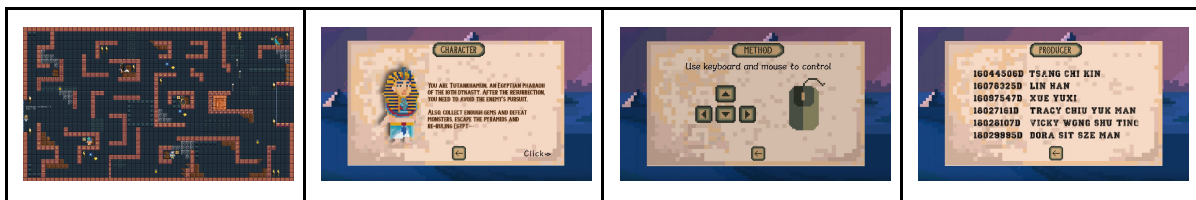

Main Map

Player need to explore the map and find the portal doors to trigger like mini-games. The map is like a big maze, there is one gatekeeper guarding each portal door. During the exploring process, there will be 2 main enemies (the Archaeologist and beetles) against player. The gems can be compensated for life points.

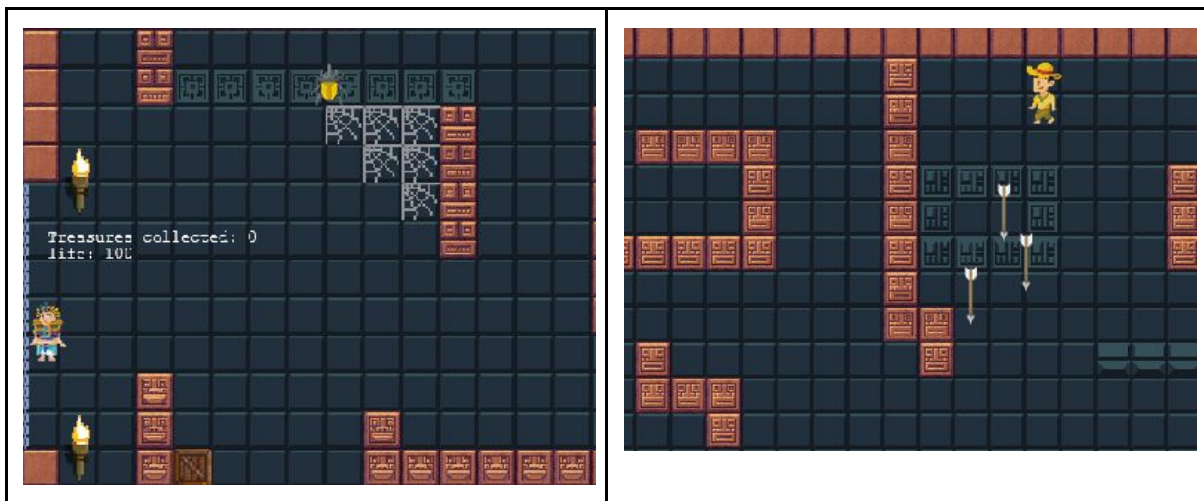Maps design using tilemap editor:
Use Tilemap engine to build this map. Divide it into different layer: background layer, collision layer and object layer. Set the property of collision. Save as the JSON version and combine it to programming code.
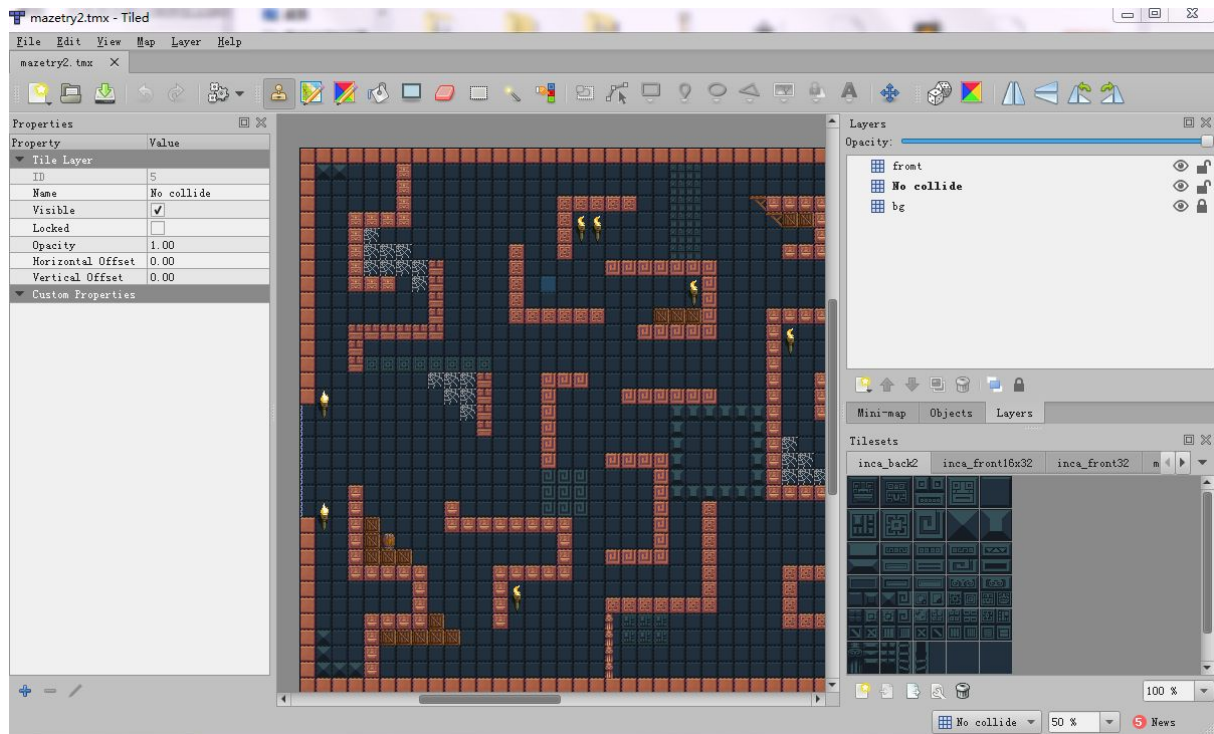
Enemy:
1. Patrolling beetles
2. Archaeologist and Arrows

Gems Collection:

Achievement Dialog:

Since when the player explores the map, he may inevitably loses his health points when colliding with the beetle or the archaeologist. There is one way to earn some health points: after collecting three gems (each gem stands for 10 scores), the health points will be compensated by 30 marks and the score for collecting gems will be cleared to zero.

```
if (score >= 30) {
    achFlag = true;
    score -= 30;
} else {
    achFlag = false;
}

if (achFlag == true) {
    var achieve = this.Poptxt.call(this, 'Achievement Unlocked!\n The jewellery will \n compensate your lif
    var timer = this.time.delayedCall(3500, function() {
        achieve.destroy();
    });
    lifePoint+=30;
    achFlag = false;
}
```

Portal doors and Gatekeepers:

In the front of each door, there is a gatekeeper, only when the player has succeeded in the previous minigame, he can return to main map and trigger the next minigame. You can only enter the minigame when the gatekeeper disappears. There are seven doors representing seven checkpoints in order. The global value of the player's position in main map will be remembered.

16
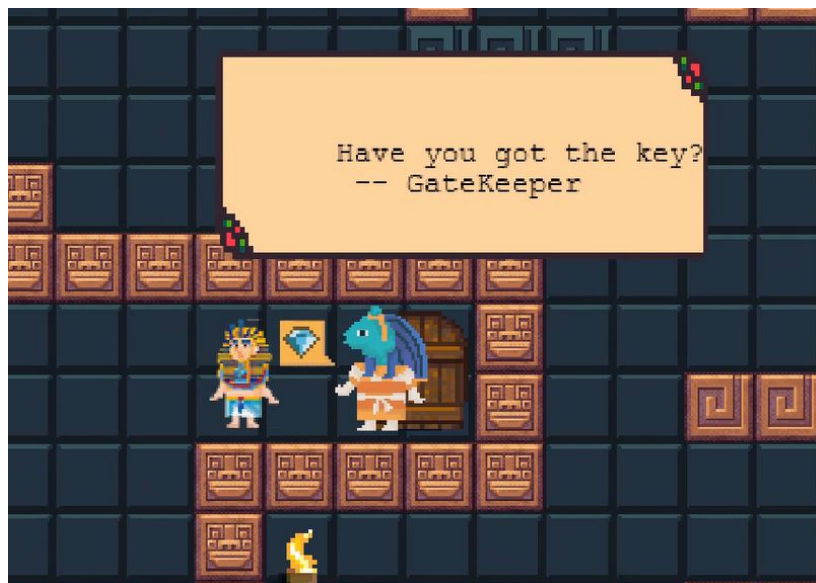
The script of the logic of the gatekeeper is like below. The success boolean parameter is to represent player in each mini-game's states.

```
//----------------------------
if (success1 == true) {
    gateKep2.destroy();
    door1.destroy();
    //sdv4
}

if (success2 == true) {
    gateKep4.destroy();
    door2.destroy();
    //sdv5

}
if (success3 == true) {
    gateKep3.destroy();
    door4.destroy();
    //sdv6

}
if (success4 == true) {
    gateKep5.destroy();
    door3.destroy();
    //sdv7

}
if (success5 == true) {
    gateKep6.destroy();
    door5.destroy();
    //minigame5

}
if (success6 == true) {
    door6.destroy();
    //minigame6

}
```

the portal door script:

```
doorMini1() {
    this.scene.start('sdv4'); //this is the constructor key!!
    if (playerX != null && playerY != null) {

        playerX = player.x;
        playerY = player.y;

    }

}
```

In the minigame, the player will return with the success equal to true.

```
collect3() {
    j3.disableBody(true, true);
    success2 = true;
    this.cameras.main.fade(500, 0, 0, 0);
    this.cameras.main.on('camerafadeoutcomplete', function() {
        this.scene.start('mainMap');
    }, this);
}
```

When the player collide with the gatekeeper, a dialog will pop up.

```
Poptxt(name, x, y) {
    var btn = this.add.image(x, y, 'popup').setInteractive();
    btn.name = name;
    btn.setScale(2, 3);

    popTxt = this.add.text(x - 30, y - 8, name, {
        fill: '#000000',
        fontSize: '14px',
    });
    popTxt.x += (btn.width - popTxt.width) / 2;
    return btn;

}
```

Gatekeeper dialog: When colliding with the gatekeeper, he will ask you "Have you got the key?". The gatekeeper will disappear if the player has succeeded in the previous checkpoints.

```
Keeper() {
    openDoor.play();
    var keyMessage = this.Poptxt.call(this, 'Have you got the key?\n -- GateKeeper', player.x+100
    var timer = this.time.delayedCall(3500, function() {
        keyMessage.destroy();

    });

}
```

Mini-Game 1

This mini game is to avoid being touched by toxic bugs, and collect the three target objects

After collecting the first scepter, the second scepter will appear, after collecting the second scepter, the third one will appear, player need to collect all of them to win the game.

There is also a timer, if player cannot collect all objects in time, the game will restart.

```javascript
if(start1){
    count1++;
    if (count1==1){
        console.log("called");
        timedEvent = this.time.addEvent({
            delay: 50,
            callback: this.reducetime,
            callbackScope: this,
            loop: true
        });
    }
}
```

This is the script for timer, control the timeline of the game.

```
if (find1 == true) {
    key = this.physics.add.image(90, 480, 'key');
    this.physics.add.overlap(player4, key, this.find, null, this);
    find1 = false;
}

if (find2 == true) {
    key2 = this.physics.add.image(450, 200, 'key2').setScale(0.2);
    this.physics.add.overlap(player4, key2, this.findd, null, this);
    find2 = false;

}
```

This code is for finding target objects one by one. It is placed in update area.

Mini-Game 2

This mini game is to avoid being touched by mummies, and collect the three target objects

After collecting the first jewelry, the second jewelry will appear, after collecting the second jewelry, the third one will appear, player need to collect all of them to win the game.

Different from the first one, the jewelry will move, which is hard to get.

```
collect3() {
    j3.disableBody(true, true);
    success2 = true;
    this.cameras.main.fade(500, 0, 0, 0);
    this.cameras.main.on('camerafadeoutcomplete', function() {
        this.scene.start('mainMap');
    }, this);
}
```

This code is for after finding the last jewelry, player will back to mainmap automatically.

Mini-Game 3

This game is to throw knife to kill the snake

As player throws more knives on the pan , the pan will spin faster

```
if (!this.apple.hit) {

    this.apple.angle += this.currentRotationSpeed;


    var radians = Phaser.Math.DegToRad(this.apple.angle - 90);


    this.apple.x = this.target.x + (this.target.width / 2) * Math.cos(radians);
    this.apple.y = this.target.y + (this.target.width / 2) * Math.sin(radians);
}
```

This code is for updating the speed of pan when knife is thrown onto it, more knives, the pan spins faster.

```
// looping through rotating knives
for (var i = 0; i < children.length; i++) {

    // rotating the knife
    children[i].angle += this.currentRotationSpeed;

    // turning knife angle in radians
    var radians = Phaser.Math.DegToRad(children[i].angle + 90);

    // trigonometry to make the knife rotate around target center
    children[i].x = this.target.x + (this.target.width / 2) * Math.cos(radians);
    children[i].y = this.target.y + (this.target.width / 2) * Math.sin(radians);
}
```

This code is for the depth of insertion.

Mini-Game 4

This game is to throw 9 keys onto the locker to open the lock

```
throwKnife() {
    if (!this.canThrow) {
        return
    }
    this.canThrow = false
    this.tweens.add({
        targets: [this.knife6],
        y: this.target.y + this.knife6.height / 8 * 3,
        duration: throwSpeed,
        callbackScope: this,
        onComplete: function(tween) {
            let isLegal = true
            let children = this.knifeGroup.getChildren()
            for (var i = 0; i < children.length; i++) {
                let child = children[i]
                if (Math.abs(Phaser.Math.Angle.ShortestBetween(this.target.angle, child.impa
                    isLegal = false
                    break
                }
            }
            if (isLegal) {
                this.canThrow = true
                let newKnife = this.add.image(this.target.x, this.target.y + this.knife6.hei
                newKnife.impactAngle = this.target.angle
                this.knifeGroup.add(newKnife)
                this.knife6.y = 500
                score6 += 1
                scoreText.setText("key :" + score6)
                if (score6 >= 9) {
                    console.log('%c GameOver ', 'background: green; color: white; display: b
                    scoreText.setText("You win!")
                    gameOver = true;
                    success3=true;
                    this.cameras.main.fade(500, 0, 0, 0);
            this.cameras.main.on('camerafadeoutcomplete', function() {
```

This code is for inserting keys and checking if it is a valid attempt.

Mini-Game 5
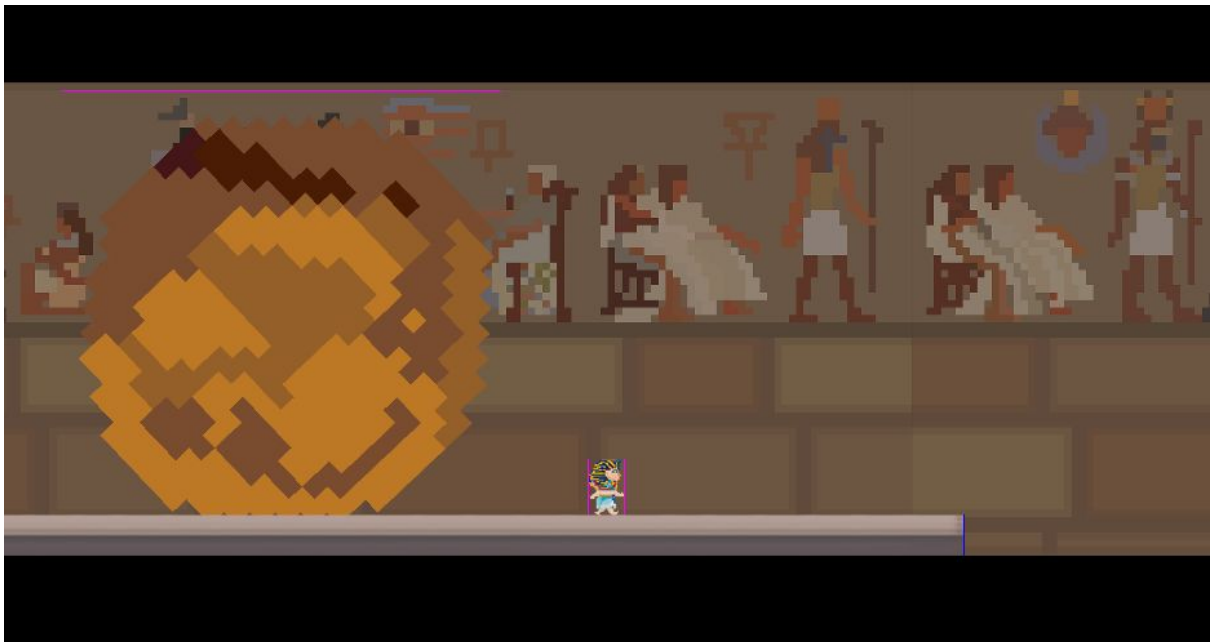
This mini-game is to jump to the end of the gangway and escape. The player is followed by a rock.

```
//environment and background settings
var bg = this.add.image(960, 540, 'bg5');
for( let i = 0; i < 12000; i += 1920 ){
    this.add.image(2880 + i, 540, 'bg5').setScale(1).depth = 0;
}
platforms5 = this.physics.add.staticGroup();
for( let i = 800; i < 12000; i += (Math.random()*500+400) ){
    platforms5.create(1800 + i, 875, 'ground').setScale(1,2).refreshBody().depth=3;
}
platforms5.create(12000, 875, 'ground').setScale(1,2).refreshBody().depth=3;
door5 = this.add.sprite(11960, 750, 'door').setScale(3).depth=0;
```

The background is rendered by the above code. The platform is randomly spown on the map with the y axis = 875 and the door is fixed in the position of coordinate(11960,750).

```
this.input.on('pointerdown', function (pointer) {
    console.log(doubleJump5);
    if (player5.body.touching.down){
        player5.setVelocityY(-300);
        doubleJump5 = 1;
        console.log(doubleJump5);
    }else if(doubleJump5 == 1){
        player5.setVelocityY(-300);
        doubleJump5 =0;
    }
}, this);
```

For double jump, there is a counter while player left click the mouse. When player click the first time, the counter will change to 1, another condition will check if the counter ==1 in order to let the player jump twice.

Mini-Game 6

25
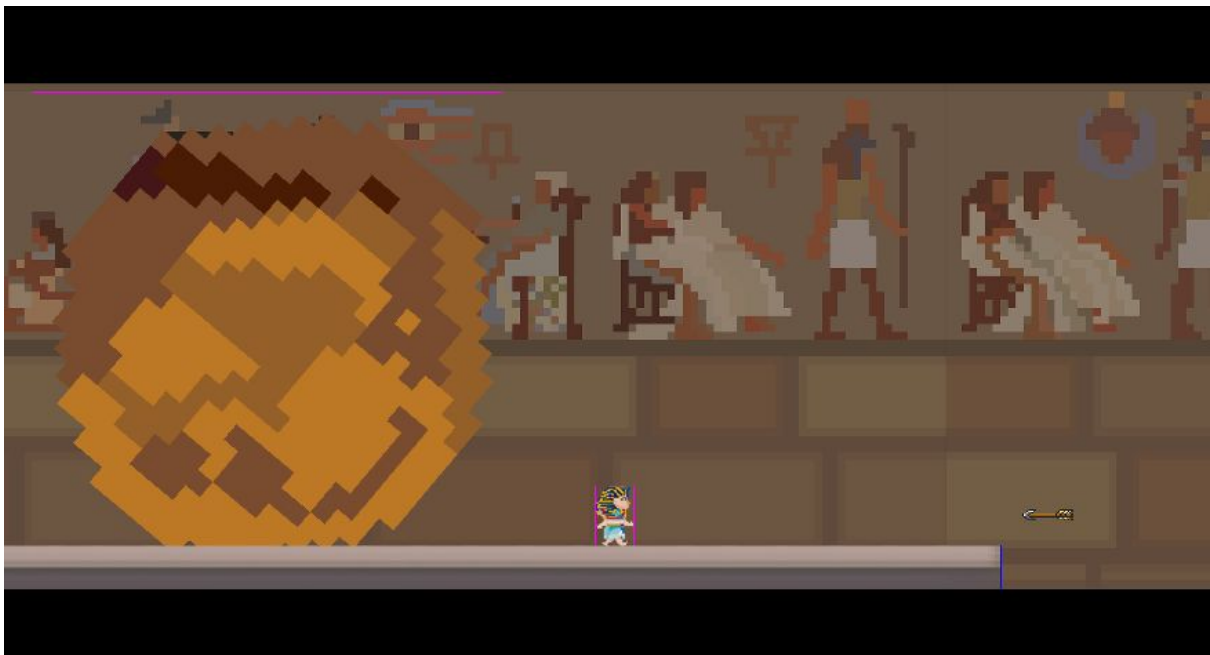
This mini-game is the advance level of mini-game 5. The arrows is added in this game, player need to jump over it in order not to hit by the arrow.

```javascript
var Arrow = new Phaser.Class({
    Extends: Phaser.GameObjects.Image,
    initialize:
    function Arrow(scene){
        Phaser.GameObjects.Image.call(this, scene, 0, 0, 'arrow6');
        this.speed = Phaser.Math.GetSpeed(600,1);
        //this.physics.add.overlap(player6, this.arrows6, this.hit, null, this);
    },

    fire: function(x,y){
        this.setPosition(x,y);
        this.setActive(true);
        this.setVisible(true);
    },

    update: function(time, delta){
        this.x -= this.speed*delta;
        if (this.x<-100){
            this.destroy();
        }
        if ((player6.x-this.x>-10&&player6.x-this.x<20)&&(player6.y>780)){
            player6.setVisible(false);
            rocks6.setVisible(false);
            scene.restart();
        }
    }
})

var arrow = arrows6.get();

if (count6%300==0&&arrow){
    console.log("called");
    arrow.fire(player6.x+2000, 800);
}
```

All arrows will spawn every 300 counts. When the distance between player and that arrow greater than 100, that arrow will be destroyed. When player's y-axis is greater than 780 which means player is near the platform and the distance between player and arrow less than 10 which means player is hitted by the arrow and the game restart.

Last Boss Room

In final game, player need to avoid attack from two enemies and escape through
the portal successfully.

```
var bluef = bluefs.create(1780, 50, 'bluef');
bluef.setBounce(0.6);
bluef.setCollideWorldBounds(true);
bluef.setVelocity(Phaser.Math.Between(-200, 200), 20);
bluef.setGravity(0, 600);

this.destroyTimeEvent = this.time.addEvent({
    delay: 9000,
    repeat: 0,
    callbackScope: this,
    callback: function() {
        bluef.destroy();
    }
});
```

This code is for releasing the fire to attack player.
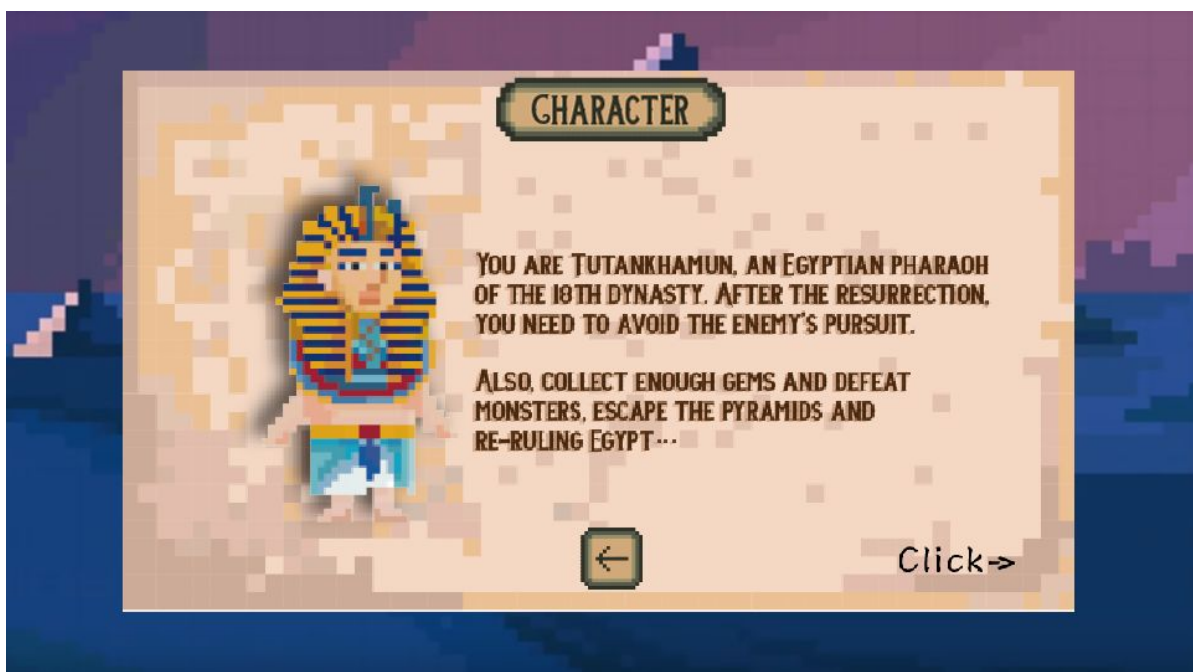
```
hitfire(player3, bluef) {
    this.physics.pause();

    player3.setTint(0xff0000);

    player3.anims.play('turn');
    this.cameras.main.fade(500, 0, 0, 0);
    this.cameras.main.on('camerafadeoutcomplete', function() {
        this.scene.restart();
        currenttime = 300;
    }, this);
}
```

When player is hitten by fire, the game will restart.

Demonstration, Screen and Video captures

METHOD

Use keyboard and mouse to control

PRODUCER

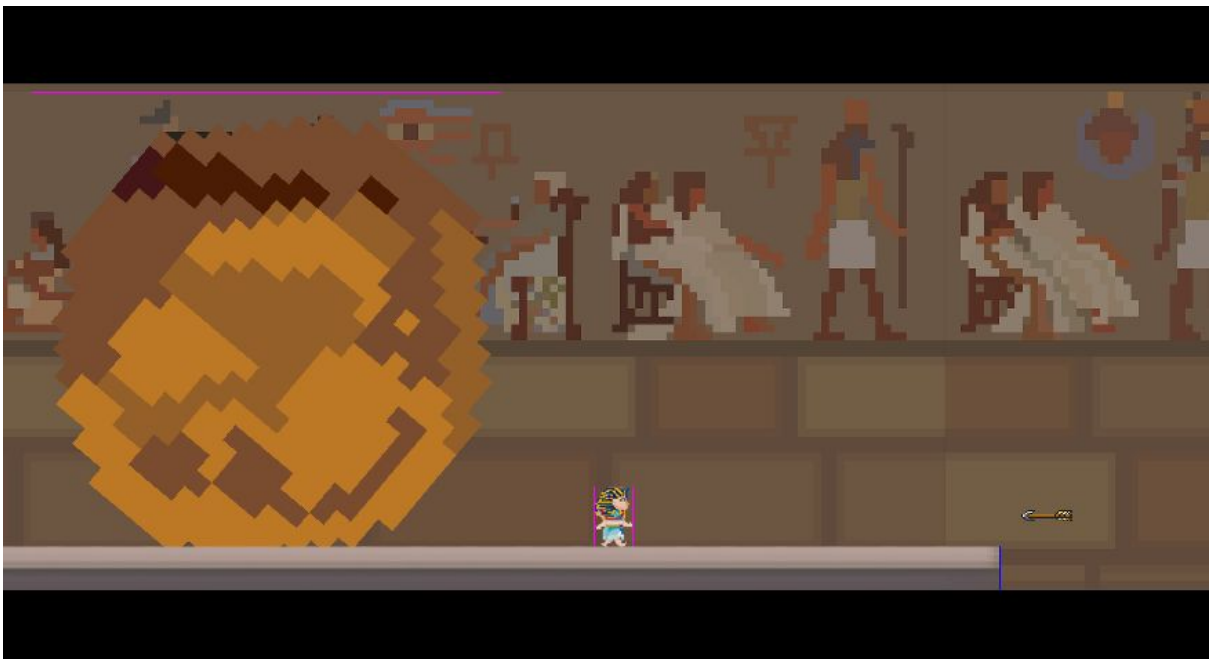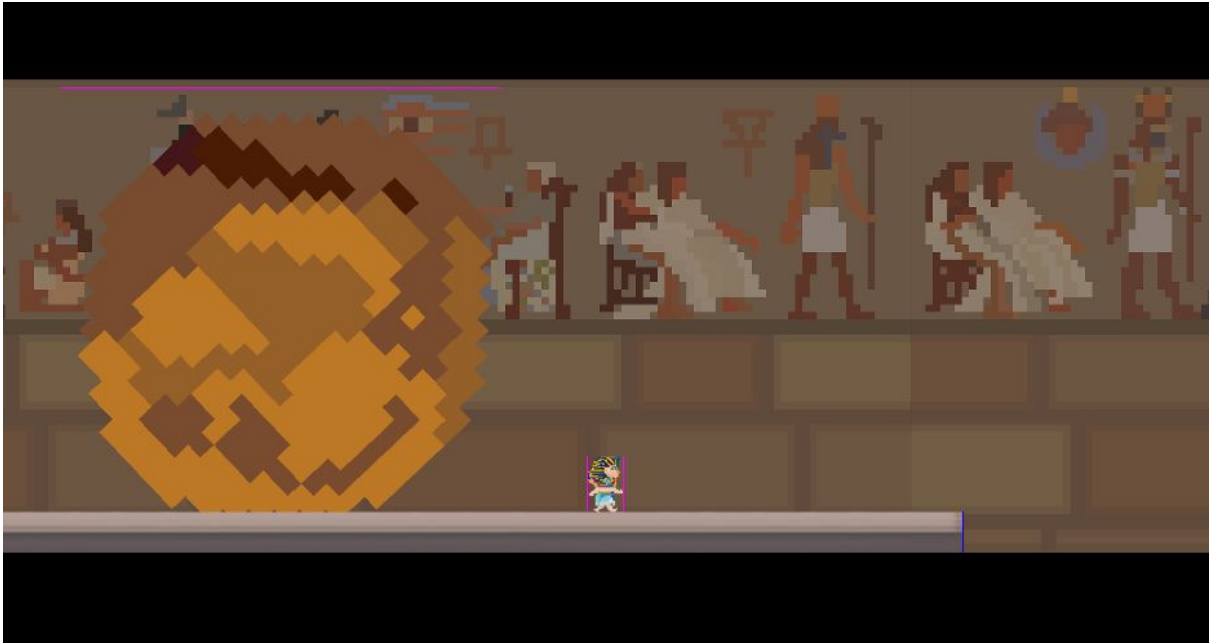| 16044506D	TSANG CHI KIN
16078325D	LIN HAN
16097547D	XUE YUXI
18027161D	TRACY CHIU YUK MAN
18028107D	VICKY WONG SHU TING
18029995D	DORA SIT SZE MAN

Roles, responsibilities, schedule and process

Main responsibilities of IMT students:

Tsang Chi Kin: Main Menu, Transition information, One minigame with two levels
Lin Han: Main Map
Xue Yuxi: 4 Minigames

IMT students			
Schedule	Tsang Chi Kin	Lin Han	Xue Yuxi
week 8	Start to convert the starting menu and 1 minigame from Construct2 to Phaser 3	Start to convert the Main Map from Construct 2 to Phaser 3	Implement 4 minigames
week 9	Finish Main Menu development individually	Difficulties encountered: tilemap editor's collision problem	Modify minigames according to others' advice
week 10	Finish mini-game 5 and 6 development individually	1. Fixed the collision problem by rebuilding the main map's wall 2. Add some characters to the main map like the pharaoh and the patrolling beetles	1.Combine scenes 2. Continue to modify minigames and lastgame.
week 11	Combine the Main Menu and main map to one folder	help to combine the main map and the mini games	Combine scenes, update minigames again
week 12	Adding mini-game 5 and 6 to main map	Add the gatekeeper to each portal doors	update lastgame again
week 13	Debugging for whole game	enhance the user interface and sound effects	Modify some details of minigames

IM students's responsibilities:
Tracy CHIU Yuk Man: Game's background
Vicky WONG Shu Ting: Collectable items
Dora SIT Sze Man: Characters, Game's background, User interface

Evaluations

Target audience

Student 1

'I think the graphics are nice and beautiful. There is basically no big problem.
But the guidelines are not clear. I don't know what the role of diamonds is.
I think this game is like some online games. I will introduce to the children of the fourth grade to the fifth grade of the primary school'

Student 2

'I think the game is quite good. I can see that your theme is about Egypt.
It is hard to do that little game. If you just watch the game, you also can understand the game play. I don't think there is anything improper.'

Student 3

'I seldom to play game but I think this game quite user-friendly and easy to play. Just play a few of time and get it how to play.
I think the theme and graphic style quite attractive. '

Student 4
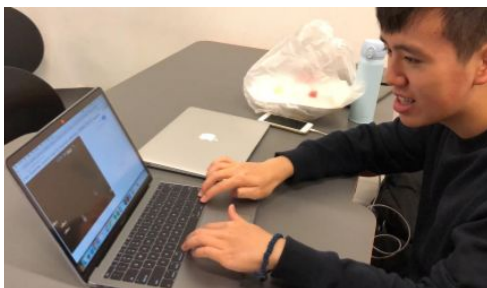
'Basically, it's good in general, but you have to play a few times, you will be familiar with it. In fact, this game is easy to control.
I don't pay attention so much in detail for me. I just want to know the gameplay quickly. But after the introduction of the story, I think it is quite interesting.
I think overall is good.'

Team
After many modifications, we finally built our game to a satisfactory level. The interface is integrated and suitable for our storyline. However, if we have further development, we would increase more interactive gameplay.

Fellow classmates and tutors

student	1.Does the game provide clear and sufficient information to teach you how to play the game? If no, please state what should be provided.	2..Do you think the user interface is intuitive to use? If no, please state any possible improvements.	3.Name at least one good aspect/feature of the game.	4.Name at least one aspect/feature of the game which needs improvement.

Yung Tsz Hong	Yes, it provide enough information for the basic control and the mini game	Yes, it provide enough information for the basic control and the mini game	A big map with multiple mini game. That makes the game much more playable	Player need to refresh the page when the player get killed in the main level
Chan Pak Hang	the instruction was clear.	Yes, but I think the player can move faster.	The relationship between the game concept and mini-games are quite match.	the last scene has some bug.
LUI Wing Ki	The game is well-developed, a lot of mini games, there must be a lot of hard-work.	The user interface is intuitive overall. Well-done!	There is sufficient instruction on how to control the game.	I got struck on finding the keys, I walked through the whole map but I cannot find the key. You may want to add hints on finding the key.
TSANG Chi Lun	Yes, I can understand the control well.	Yes	The items inside the mini games are related to the whole game which make the story line more funny.	Some text effect will not be destroyed and always in the screen.
CHEUNG Ka Lee	It provide a clear information to teach the player how to play.	I think the user interface is not really intuitive to use, as the HP bar is following the character and it may hard to notice while talking with other characters or too care on the enemies.	Good characters' background.	Provide a map that notice the position of character and the active door which can be enter, that can more user friendly.
CHAN Hei Man	Although the game do not start with introduction, it is almost the same as the treasure hunt game in the past so that it is easy to	The user interface is good.	Good aspect - The game concept is easy to understand	Improved aspect- Perhaps a minimap is needed for user to play

	understand.			
LING Nok Tak Peter	Yes, the game provides enough information for the control method.	The user interface is intuitive to use.	All of the mini games are very interesting and the graphics are very good.	There are some bugs in the game, for example, some of the text do not disappear.
CHEUNG Cheuk Yiu	Very clear	- Larger button in menu scene and the effect of pressing button - Display Character information on any corners of screen instead of following the player	- Many mini games available - Impressive game design in both visual display and game mechanism aspect	- I prefer to have a mini map

Conclusions and Future works

Our groups have achieved a combined version of an adventure game: Tutank Revival. It has a complete user interface to provide storyline explanation and game interaction information to the players. We also have some sound effects including the background music, interaction music.
We will be devoted and enthusiastic to further improve it if more time is provided. We can add more sound effects in each minigame to make the game more lively and interesting and we may enlarge the main map and add more branch plots so that players can experience more mini games.