

Rescue the Prisoner

Software Development Project-II

Course No. CSE 3200



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“Authors”

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Chapter – 1

Introduction

1.1 Introduction:

The world is now on the base of computer .Computer is related to two basic parts, software and hardware. From the beginning of computer different kinds of software are developed to enhance the capability of computer.

Nowadays people from children to older prefer to play computer game to pass their leisure time. Being a source of indoor games, computer game is preferred most.

On the basis of refreshment of people, we developed a game namely Rescue the Prisoner in C sharp language.

1.2 Objectives:

- Become familiarization with C sharp language and it's features.
- To develop a software project.
- To make a source of entertainment of the people.
- To design a software.
- To make a source of passing leisure time.

1.3 Platforms:

The Platform of our project is Unity.

1.4 Reason for choosing Unity:

For game and app development, Studio Pepwuper loves to use Unity 3D as our main software. If you've been thinking about getting into game or app development, or are a client looking for app development and are wondering what software to have your app/ game built with, here are our top 10 reasons why we choose Unity!

1.It's FREE to Get Started with Unity

Unity3D comes with a free version and a Pro version, but unlike most software with both payment options, Unity3D's Free version is feature-complete. There are definite advantages to paying for the Pro version once you've progressed with the program (e.g.: audio filter, video playback and streaming, 3D texture support, custom splash screen and more) but in the meantime Unity allows gaming wannabes to create full games without the obstacle of price.

2. It's Multi Platform

iOS, Android, Windows Phones, Macs, PCs, Steam, Playstation, Xbox, Wii U...etc. There are many platforms your game be published on, and Unity makes it easy to take your game from one platform to the rest. Porting a game to a different platform that utilizes a different set of technology used to involve massive effort — it was often times outsourced to another company and took up months of development time. With Unity, porting to a new platform is a lot simpler. You still want to take each platform's unique features into consideration when building a game for it, but Unity makes it a lot easier to port.

3. The Thriving – and Supportive – Community

Indie game development can get lonely sometimes, but with 2 million+ developers using the Unity software (a number that is growing every day), it's great to have multiple online resources to share the love and frustrations of the program with. If you ever get stuck on a developing issue, want to chat with like-minded people, or are even looking for an artist or developer to collaborate with on your next big idea, there are tons of forums out there where eager Unity fans unite. And speaking of Unite, there's the annual conference that Unity puts on (Unite), where you can meet your online Unity buddies in person in either Europe or North America each summer.

In addition, there are several Unity meet ups all over the world that are not affiliated with Unity, but are acknowledged and supported by them.

4. The Asset Store

The Unity Asset Store is a great place to a) find what you need for your game without making it from scratch (a character, a building etc.) or b) a nice place to make a little extra revenue if you're an artist, musician, or modeller.

There is a submission process you must go through in order to sell your assets in the Unity store, but once you're approved, you'll get 70% royalties on each purchase which can be a fantastic way to fund your next game!

5. Scripting Languages

You can script in Unity using Javascript or C#, two of the most popular languages and both of which are very easy to get started with.

6. The Ability to Create 2D Games

Although Unity is great for 3D animation, there is of course still a place for 2D development. With the latest version Unity 4.3, there is a built-in 2D engine that allows you to create 2D games. It handles sprite animation, 2D physics, animation dope sheet...etc. and lots more goodies.

7. The Ability to Create Multiplayer Games

Some of the biggest multiplayer games on the web and mobile are built with Unity (Marvel Superhero Squad, Solstice Arena). Building a multiplayer game is a massive under-taking, and with the set of tools Unity provide and the support of the community, we are able to create our multiplayer game, My Giants, the way we wanted – a task that would have been impossible without it!

8. Online Tutorials/ Classes Make it Easy to Learn

The really beautiful thing about Unity is how easy it is to learn. Sure, there's a bit of a learning curve in the beginning, but considering what you can do with the software, it's incredibly easy. With several online courses and tutorials teaching the basics of Unity available, you can learn how to get started with it for a very low cost – and from the comfort of your own home.

9. Unite — the Unity Conference

Unite used to be a yearly event where early adopters of Unity got together and talked to the guys at Unity about all things new and exciting in the world of Unity. Now with the rise of the Unity community, Unite happens multiple times a year all around the globe. It's an amazing place to meet fellow Unity developers and learn the cool technology that's about to come — one of my favorite gaming conferences for sure!

10. The Ease of Use

It's very easy to get started with Unity, and you can instantly see the result of what you are working on in the editor without having to wait for the game to compile and build. This is huge! From the interface all the way down to the workflow and how art is imported, you can see the brilliant execution the Unity's idea of “democratizing game development” in what we think is the best game software around today.

Chapter -2

Description of project

2.1 Requirements:

We developed the game on C sharp language .We used the following parts:

- I. Unity 5.1.1f1
- II. Monodevelop. CSharpBinding. Debugger.Soft.Unity

2.2 Why “Rescue the Prisoner”:

Our project is a Game. This is based on protecting the prisoner from the enemies. I am the only soldier. My work is to save the prisoner. At present time, shooting game is popular and it's popularity is increasing day by day. To make a fighting game like this we had to consider both the design part of the scene and also the scripting which will be very much necessary for our future life.

2.3 Features of “Rescue the Prisoner”:

- The game can be played by one player at a time.
- Firstly, there contains a mainframe with two options:
 - i. PLAY
 - ii. EXIT

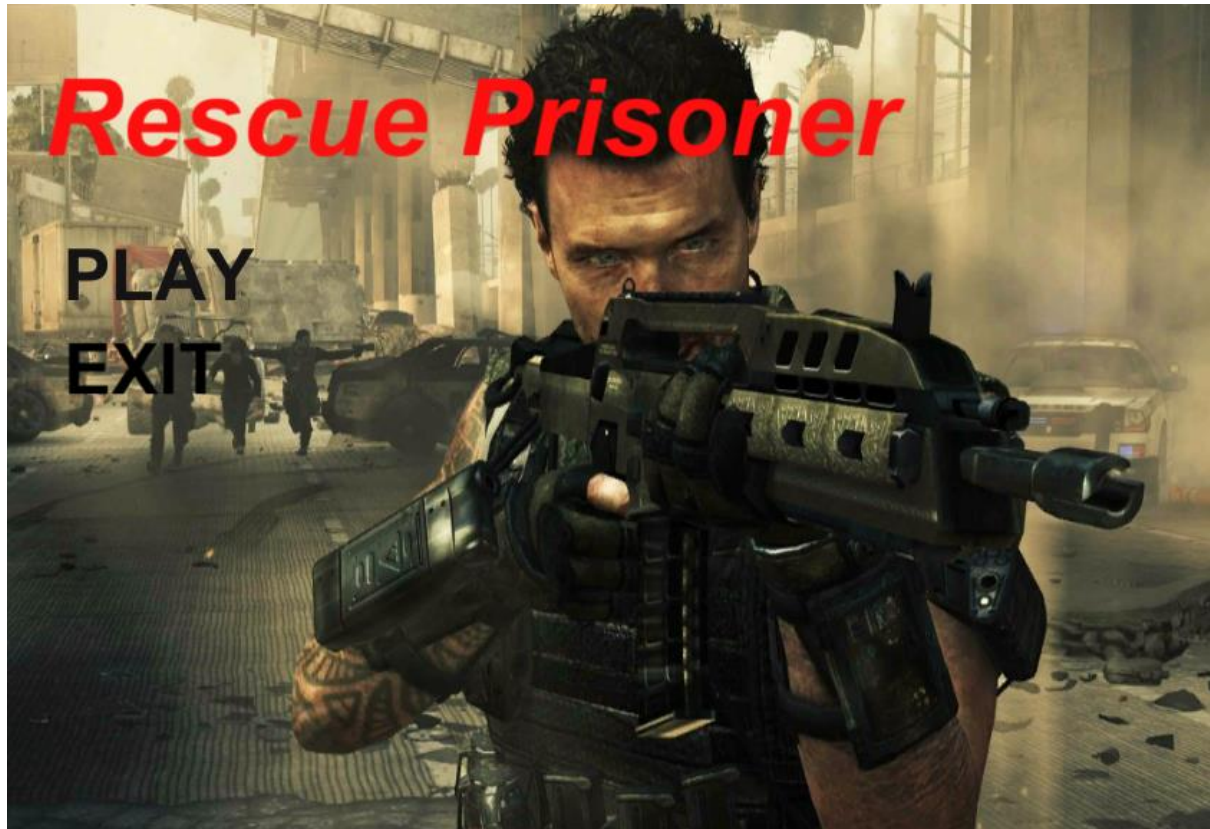


Fig-01: Starting Scene

After searching a lot of place the player at last find the area by which he can enter the main area where Robert is prisoned, this is a forest area lots of trees ,grass, bushes and it is surrounded by hills the area is very calm and quite.



Fig-02: Player Entrance Scene

The below picture is at entrance door where two starting enemies try to kill the player. At this stage score is initially zero. If the player is able to kill the two starting enemies, score will be 20 as score per enemy is 10. Then the entrance door where the two starting enemies are appointed will open automatically.



Fig-03: Enemy at Door

The player has killed the two starting enemies and score has updated into 20. So, the entrance has opened automatically. Then the player will enter the main playground (battlefield).



Fig-04: Opening Door after Enemy Death

This is our play background where shooting take place between the player and the enemies. There are road, homes, hills, trees. One side of the main frame the prisoner is prisoned.

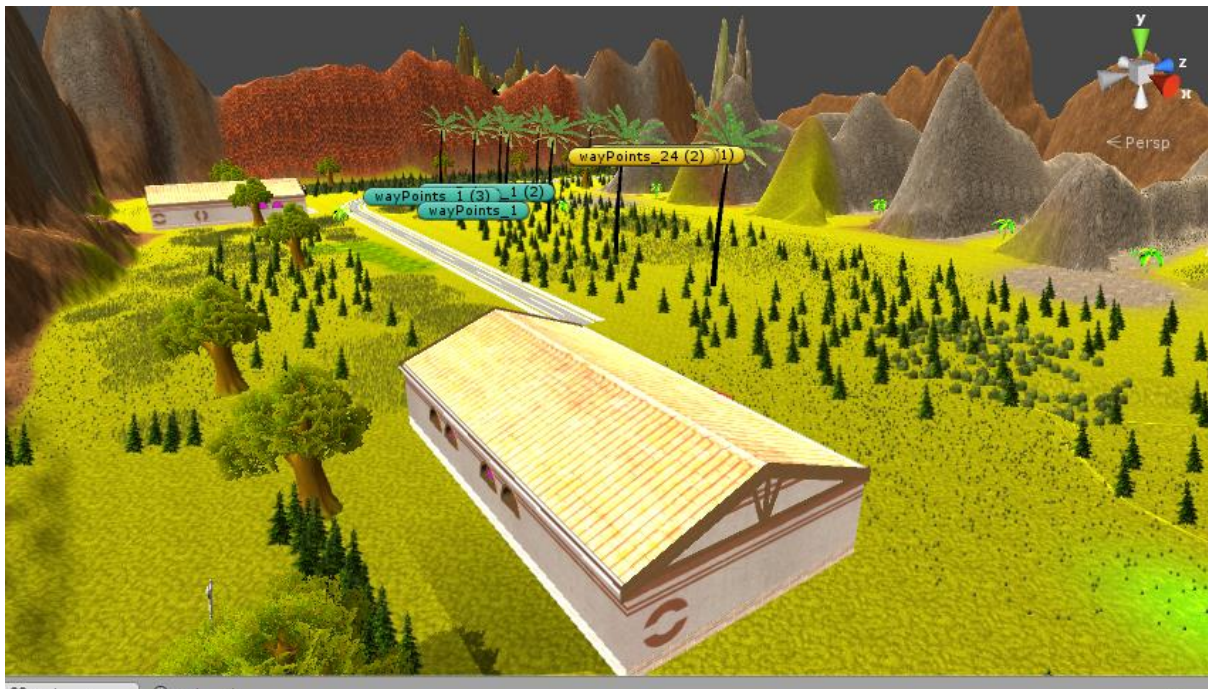


Fig-05: Main Area View

The following figure is the health pick-up of the player. If the player pick the health pick-up his health will increase. So the lifetime of the player also increase.



Fig-06: Health Pick Up

The following figure is the key pick-up of the player. If he touches the key he will get point. There are such eight key for the player in the main playground.



Fig-07: Player's Key

This is destination place of our game. Here the prisoner is prisoned. If the player gets all the key points then the prison door will open automatically. As a result the prisoner will come out from the prison to the player and will be saved by the player. Thus our goal will be achieved.



Fig-08: The Prisoner

2.4 How to play this game:

Control	Primary	Secondary	
Horizontal (+)	right	d	^
Horizontal (-)	left	a	
Vertical (+)	up	w	
Vertical (-)	down	s	
Fire1	left shift	Left Mouse	▼
Fire2	x	Right Mouse	
Fire3	z	Middle Mouse	
Jump	space		
Vertical	Joystick 0 axis 1		
moveCamera	Joystick 0 axis 0		▼
Switch	Joystick 0 axis 0		
Run	q		
Roll	r	joystick button 1	
Submit	a		
Crouch	l	joystick button 1	▼
Cancel	escape	joystick button 1	
Cancel	escape	joystick button 1	
Cancel	escape	joystick button 1	▼

Chapter -3

Implementation of project

3.1 Example of State Diagram Used in the Project:

The following figure is the state diagram of our game. From the below figure we can see the state the player and enemy. Various animation clips are mapped along with various conditions. In this window there are opportunity to declare variable like float, bool, int, trigger and use them in giving condition to change one state to other.

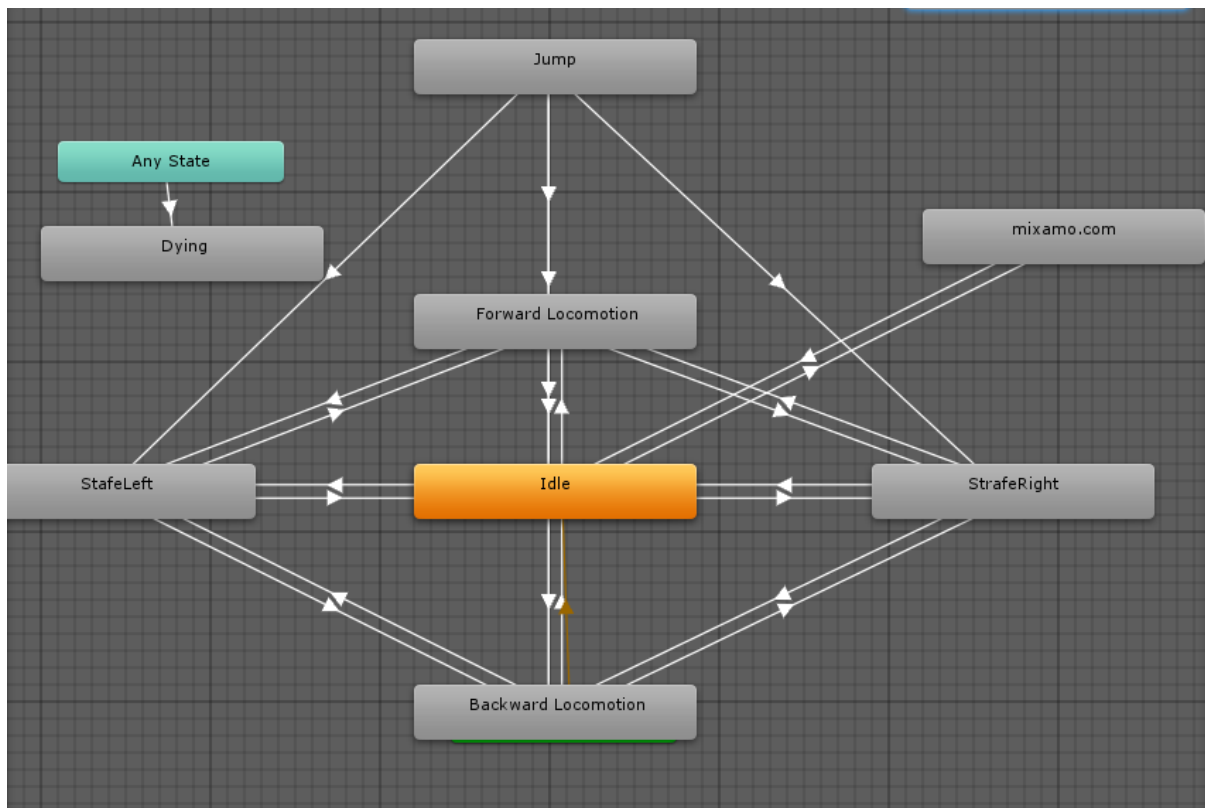


Fig-09: State Diagram of Player and Enemy

3.2 Example Animation Window of the Project:

The animation of the door is given below. This is shown with how it is set in the below dialog box named Animation. Animation clips are made in this window and some animation clips are imported from outside.

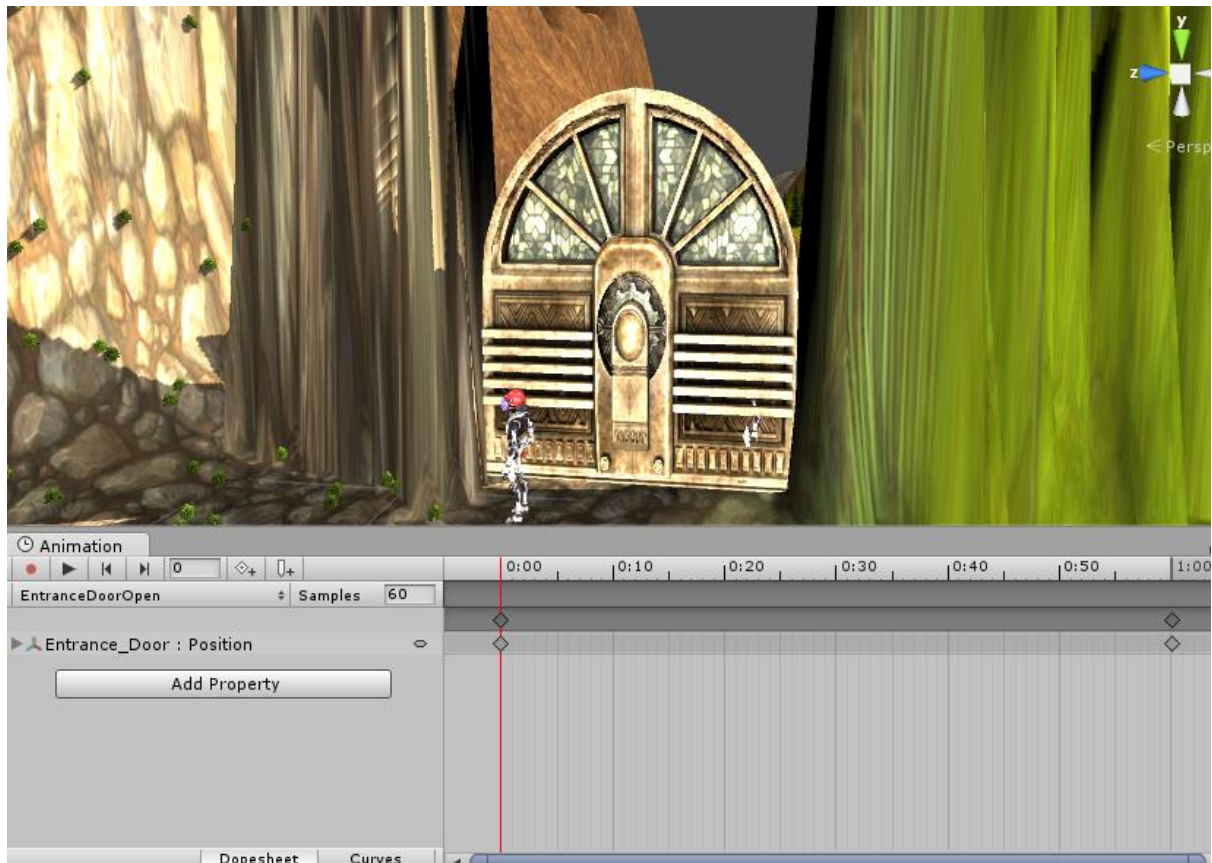


Fig-10: Animation of Door

3.2 Example of Sprite Editor Window of the Project:

2D Image cutter we can cut multiple images in this editor.



Fig-11: Use of the Sprite Editor

Chapter -4

Conclusion

4.1 Limitations:

Our project is not free from limitations. There are some limitations as like

- Touch input
- Advanced artificial intelligence
- Advanced character controller which will include various types animation like crawling, rolling etc.
- Designing the scene with more realistic effect
- Multiple stage scene.

4.2 Future Plan of “Rescue the Prisoner”:

- Adding touch input
- Adding advanced artificial intelligence
- Advanced character controller which will include various types animation like crawling, rolling etc.
- Designing the scene with more realistic effect
- Multiple stage scene

4.3 Conclusion:

We have acquired a satisfactory knowledge on unity. We have successfully brought a conclusion to our game project “Rescue the Prisoner”. While doing so many times faced a lot of difficulties .We overcame these obstacles by taking help from our supervisor as well as our seniors. The project may be small but it inspires us to do something bigger in future.

4.4 References:

While accomplishing the project we take help from internet. Some of its examples are given below:

- Unity 3d Manual
- Unity Forum, Youtube