

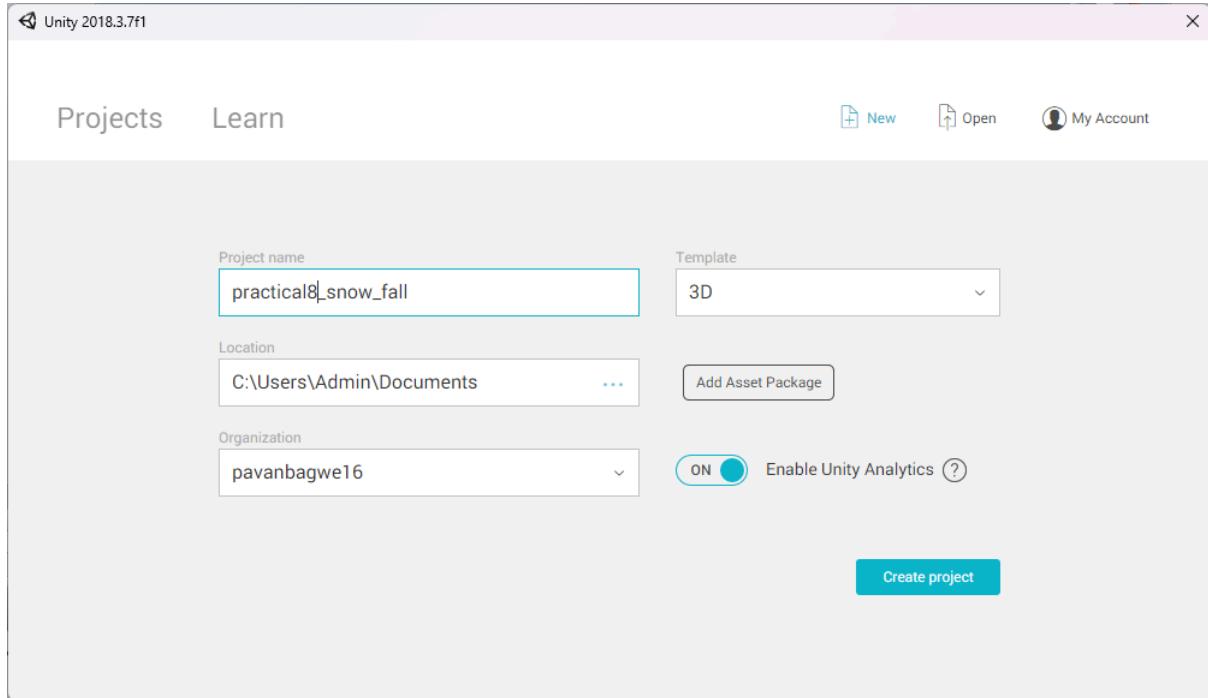
## TYCS SEM 5

## GAME PROGRAMMING

### Practical no 8

**Aim:** Create Snowfall Particle effect in Unity

**Step 1 : create a new project using 2D or 3D Templates.**



**Step 2:** Create a Particle System

**Hierarchy:** Right-click in the Hierarchy panel and select "Create Empty" to create an empty GameObject. Rename it to something like "**Snowfall.**" OR you can use any image as a background.

**Inspector:** Select the "Snowfall" GameObject, and in the Inspector panel, click the "Add Component" button. Search for "**Particle System**" and add it to the GameObject.

**Go to gizmos** -> disabled the selection outline

**Step 3:** Configure Particle System

#### 1 Particle System Settings:

- Set the Simulation Space to "World" so that the snow particles fall throughout the scene.
- Set the Max Particles to control the number of snowflakes.
- Adjust the Duration to determine how long the snowfall will last.

- **Gravity modifier = "1"**

## **2 Renderer:**

- Change the Render Mode to "Billboard" to make the particles face the camera.
- You can set the Material to a simple white snowflake texture.

## **3 Shape:**

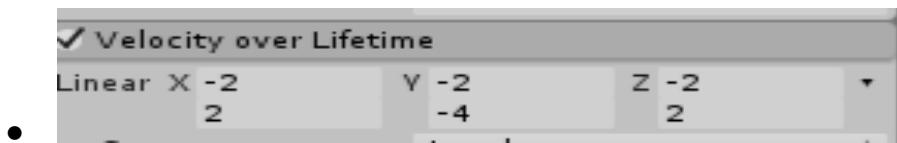
- Change the Shape to "Cone" or "Cone Volume" to simulate particles falling from above.
- Adjust the Radius and Angle to define the area where particles will be emitted.

## **4 Emission:**

- Adjust the Rate Over Time to control the number of particles emitted per second.
- **Rate Over Time ="100"**

## **5. Velocity over Lifetime:**

- Set the Y component of Velocity to a negative value to make the particles fall downward.
- click on setting →choose **"Random Between two constant"**



## **6 Size over Lifetime:**

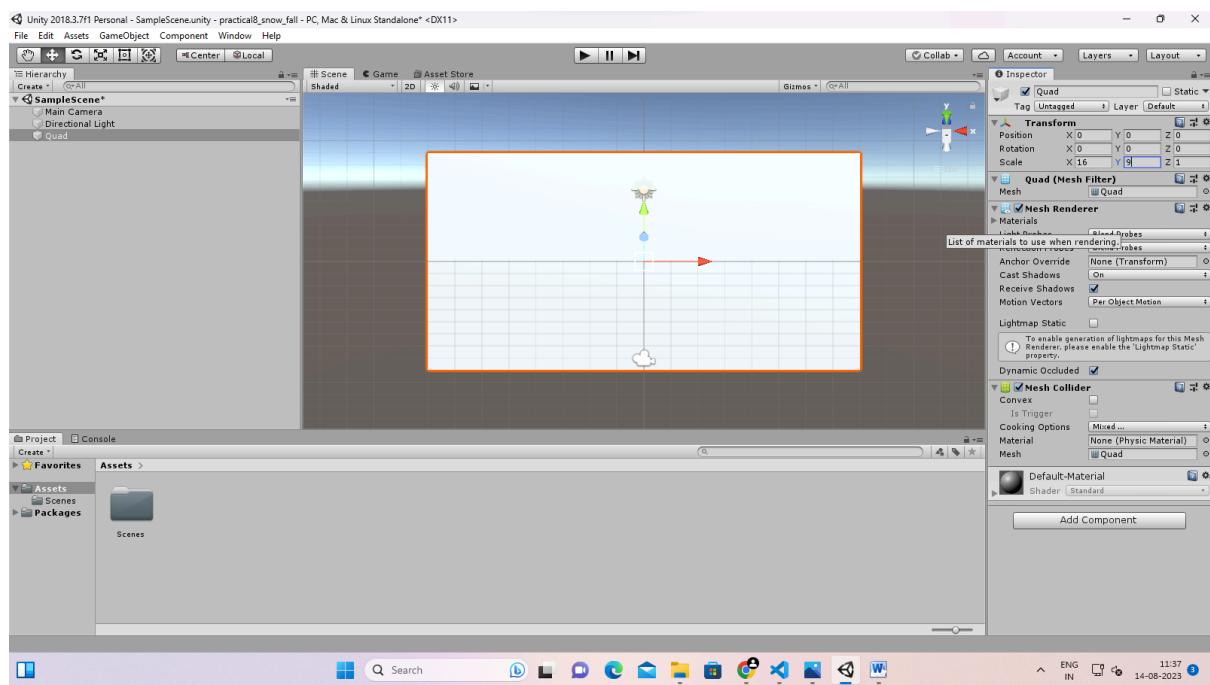
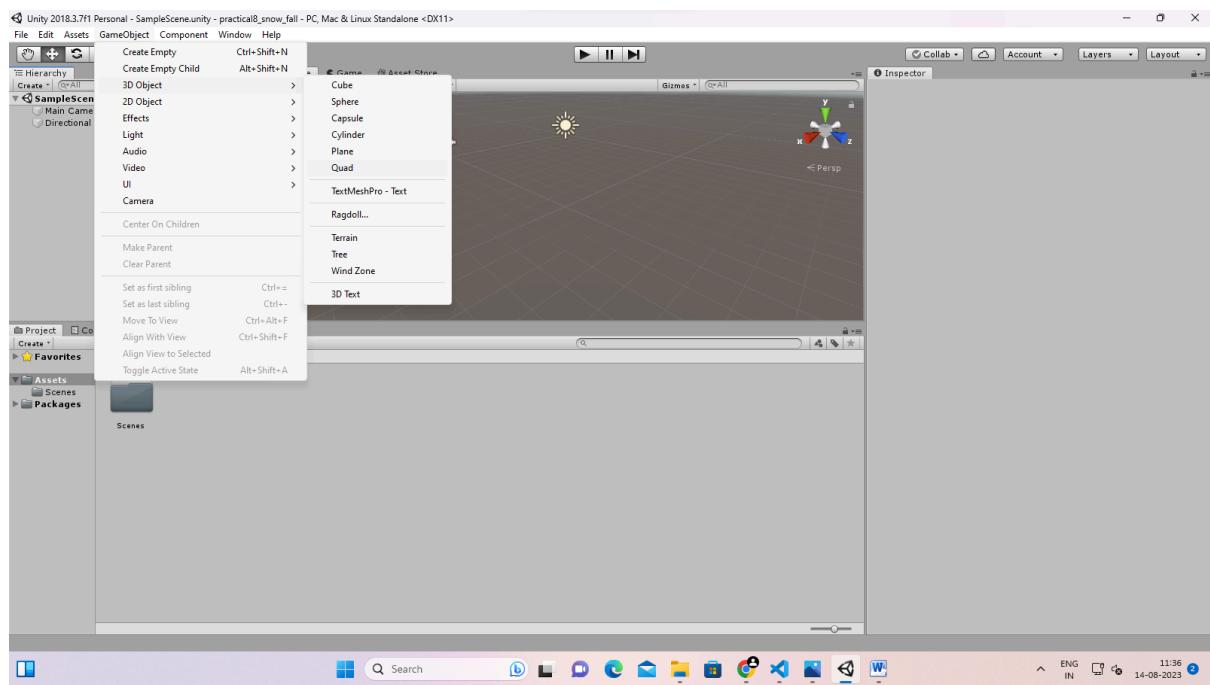
- Adjust the Size Curve to make particles start small and potentially fade out as they fall.

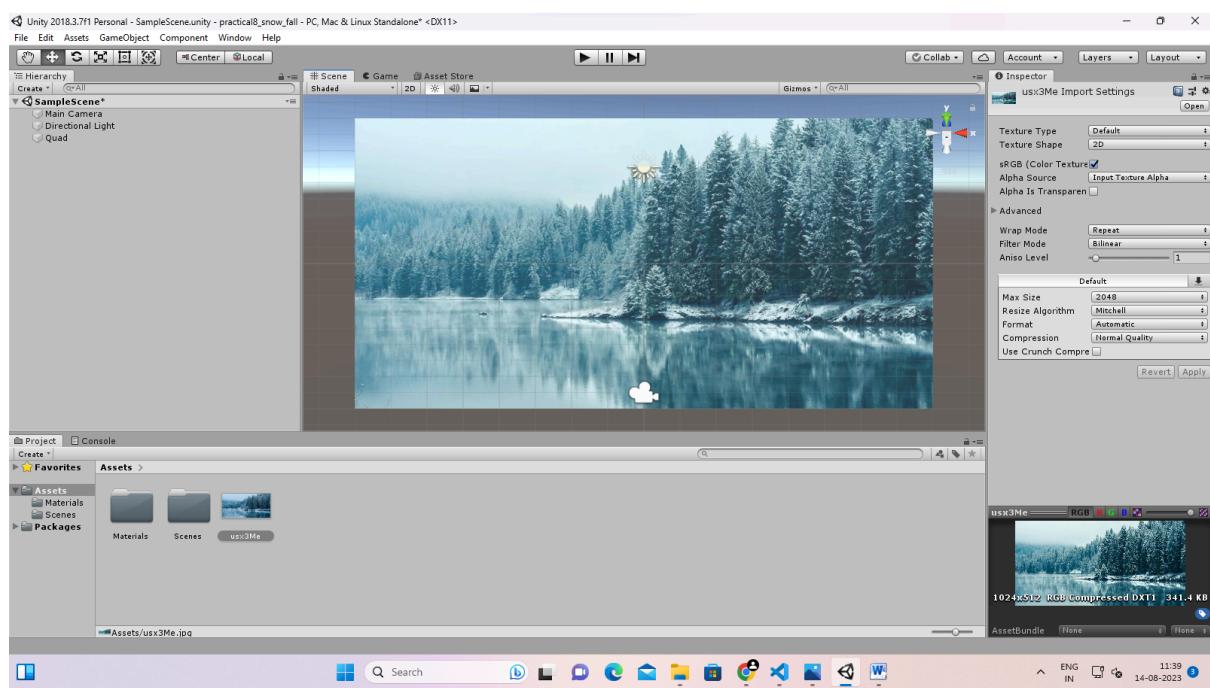
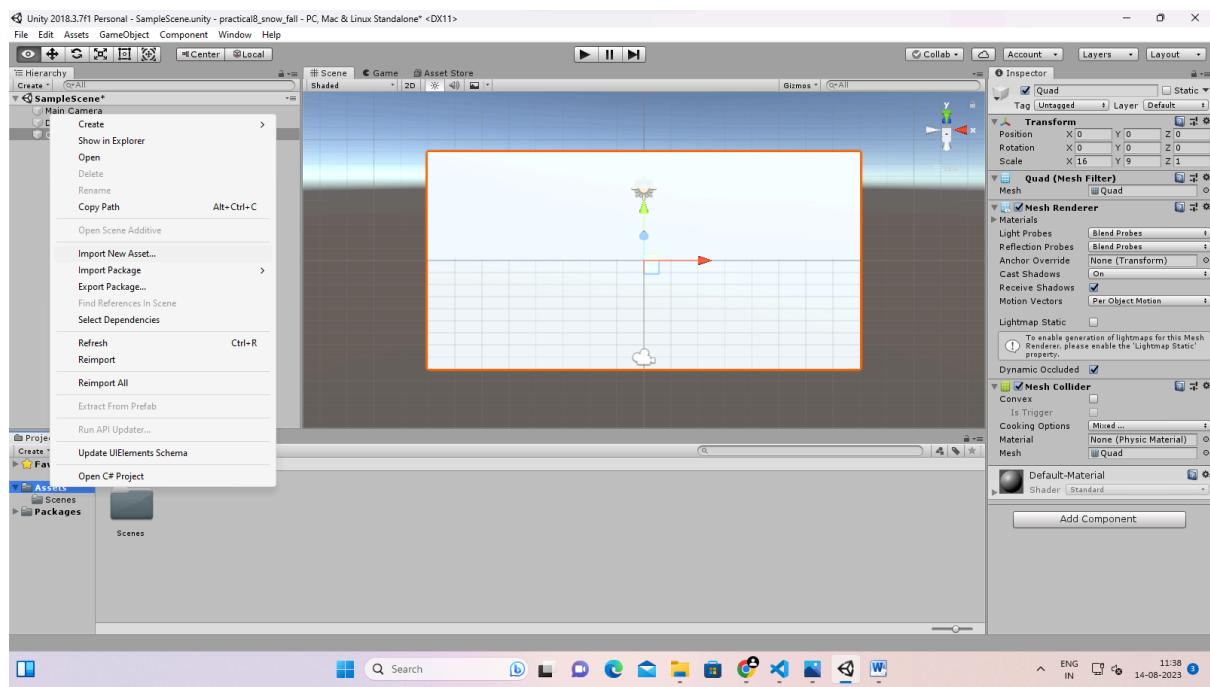
## **7 Color over Lifetime:**

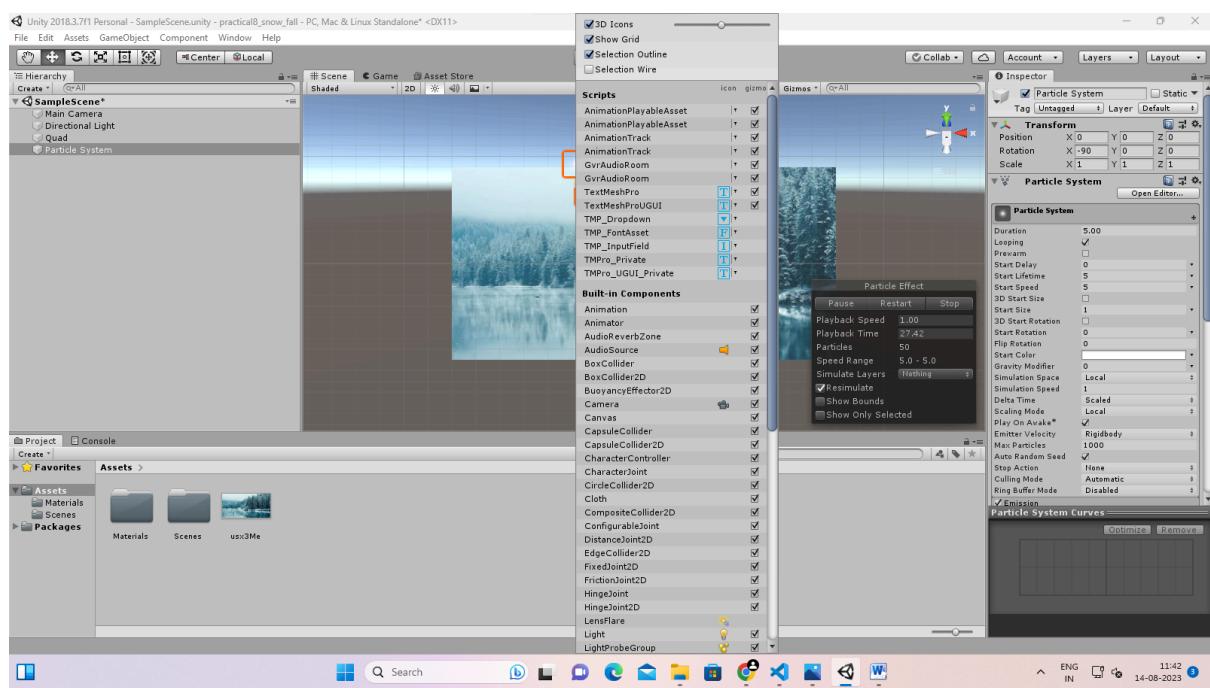
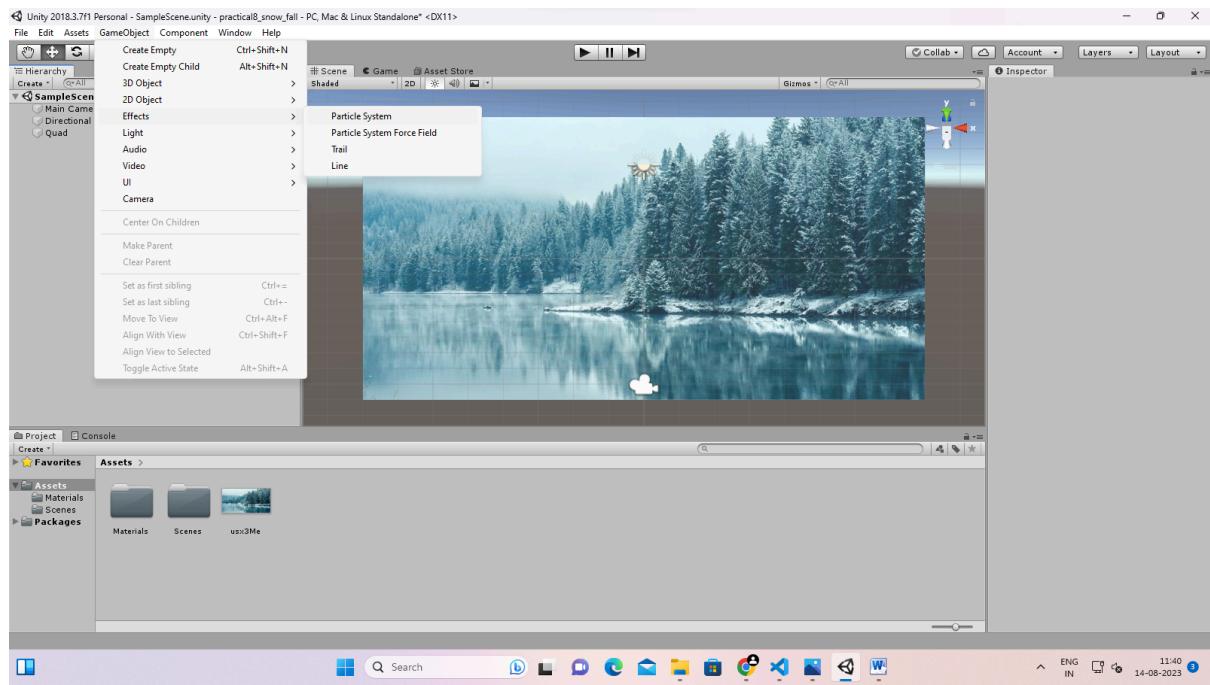
- Modify the Color Gradient to create fading or changing colors as particles fall.

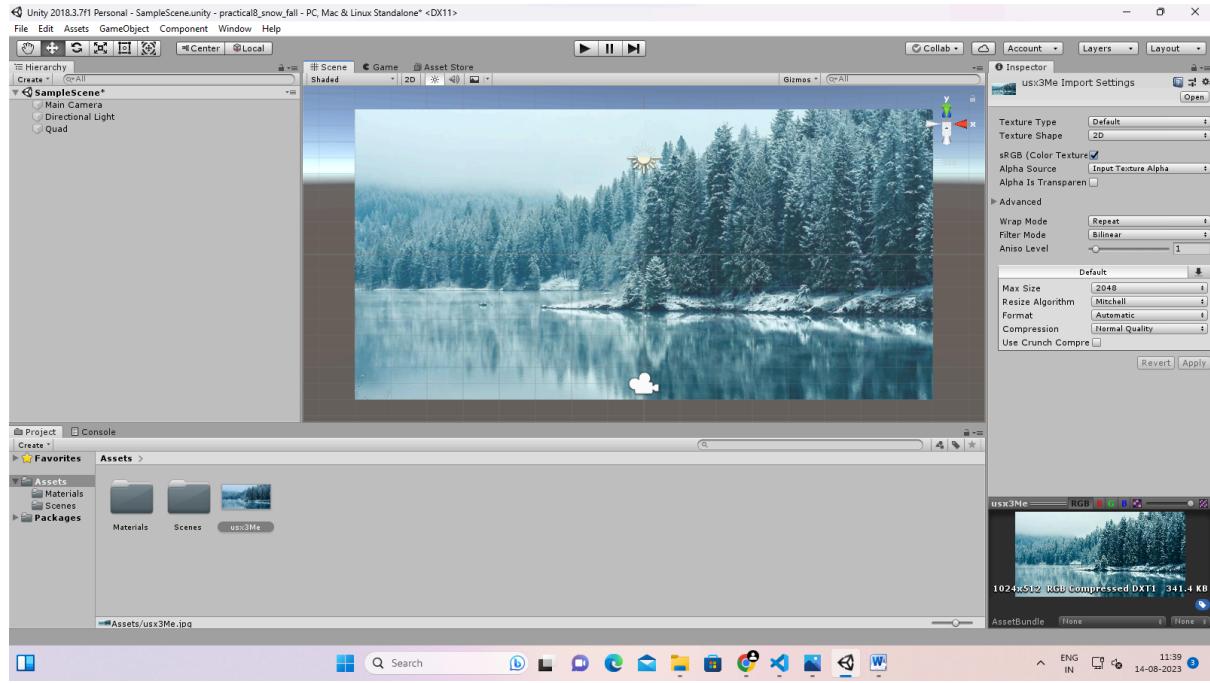
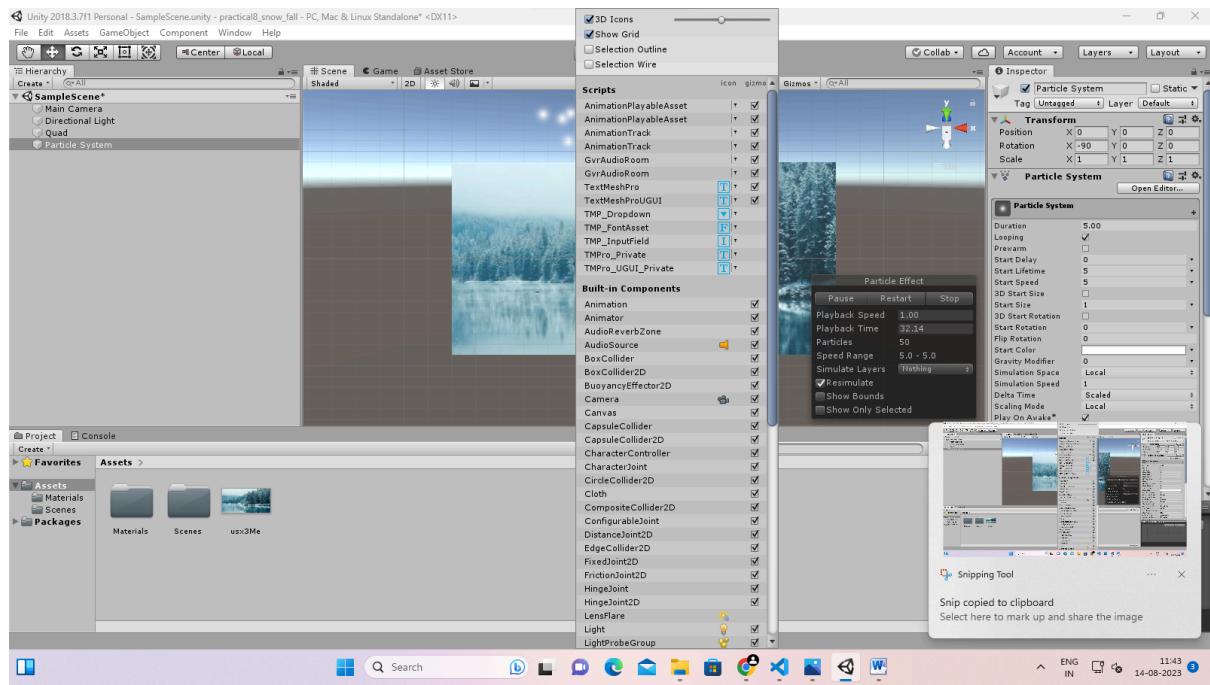
## **Step 4: Refine the Effect**

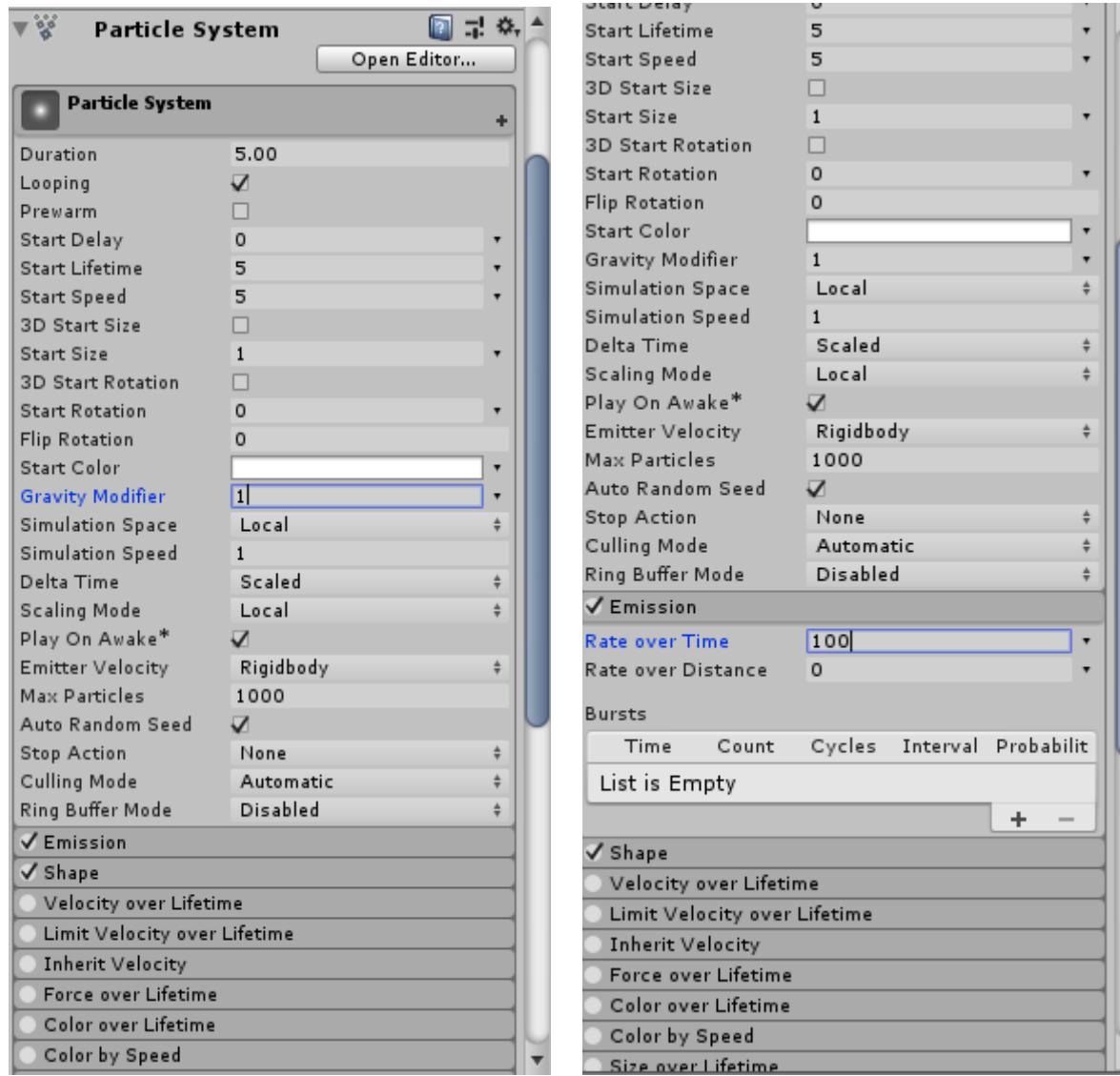
Experiment with the various settings to achieve the desired look for your snowfall effect. You can adjust particle size, speed, color, and shape to make it more realistic and visually appealing. You can also add additional effects like fog or camera effects to enhance the atmosphere.











**Max Particles** 1000  
**Auto Random Seed**   
**Stop Action** None  
**Culling Mode** Automatic  
**Ring Buffer Mode** Disabled  
**Emission**  
**Rate over Time** 100  
**Rate over Distance** 0  
**Bursts**

Time	Count	Cycles	Interval	Probability
List is Empty				

**Shape** Cone  
**Angle** 25  
**Radius** 1  
**Radius Thickness** 1  
**Arc** 360  
**Mode** Random  
**Spread** 0  
**Length** 5  
**Emit from:** Base  
**Texture** None (Texture 2D)

**Position** X 0 Y 0 Z 0  
**Rotation** X 0 Y 0 Z 0  
**Scale** X 1 Y 1 Z 1

**Align To Direction**   
**Randomize Direction** 0  
**Spherize Direction** 0  
**Randomize Position** 0

**Velocity over Lifetime**

Linear X 0 Y 0 Z 0  
 0 0 0

**Space** Local  
**Orbital X** 0 Y 0 Z 0  
**Offset X** 0 Y 0 Z 0  
**Radial** 0  
**Speed Modifier** 1

**Random Between Two Constants**

**Random Between Two Curves**

**Inherit Velocity**

**Force over Lifetime**

**Color over Lifetime**

**Color by Speed**

**Size over Lifetime**

**Size by Speed**

**Rotation over Lifetime**

**Rotation by Speed**

**External Forces**

**Noise**

**Collision**

**Triggers**

**Sub Emitters**

**Particle System Curves**

**Particle System Curves**

**Inspector**

Max Particles	1000
Auto Random Seed	<input checked="" type="checkbox"/>
Stop Action	None
Culling Mode	Automatic
Ring Buffer Mode	Disabled

**Emission**

Rate over Time	100
Rate over Distance	0

**Bursts**

Time	Count	Cycles	Interval	Probability
List is Empty				

**Shape**

**Shape**: Box

Emit from:	Volume
Texture	None (Texture 2D)
Position	X 0 Y 0 Z 0
Rotation	X 0 Y 0 Z 0
Scale	X 1 Y 1 Z 1

Align To Direction	<input type="checkbox"/>
Randomize Direction	0
Spherize Direction	0
Randomize Position	0

**Velocity over Lifetime**

Linear X -2 2	Y -2 -4	Z -2 2
Space	Local	
Orbital X 0	Y 0	Z 0
Offset X 0	Y 0	Z 0
Radial	0	
Speed Modifier	1	

- Limit Velocity over Lifetime
- Inherit Velocity
- Force over Lifetime
- Color over Lifetime
- Color by Speed
- Size over Lifetime
- Size by Speed
- Rotation over Lifetime
- Rotation by Speed
- External Forces
- Noise

**Particle System Curves**

Optimize Remove

**Inspector**

Time	Count	Cycles	Interval	Probability
List is Empty				

**Shape**

**Shape**: Box

Emit from:	Volume
Texture	None (Texture 2D)
Position	X 0 Y 0 Z 0
Rotation	X 0 Y 0 Z 0
Scale	X 40 Y 10 Z 1

Align To Direction	<input type="checkbox"/>
Randomize Direction	0
Spherize Direction	0
Randomize Position	0

**Velocity over Lifetime**

Linear X -2 2	Y -2 -4	Z -2 2
Space	Local	
Orbital X 0	Y 0	Z 0
Offset X 0	Y 0	Z 0
Radial	0	
Speed Modifier	1	

- Limit Velocity over Lifetime
- Inherit Velocity
- Force over Lifetime
- Color over Lifetime
- Color by Speed
- Size over Lifetime
- Size by Speed
- Rotation over Lifetime
- Rotation by Speed
- External Forces
- Noise

**Particle System Curves**

Optimize Remove

