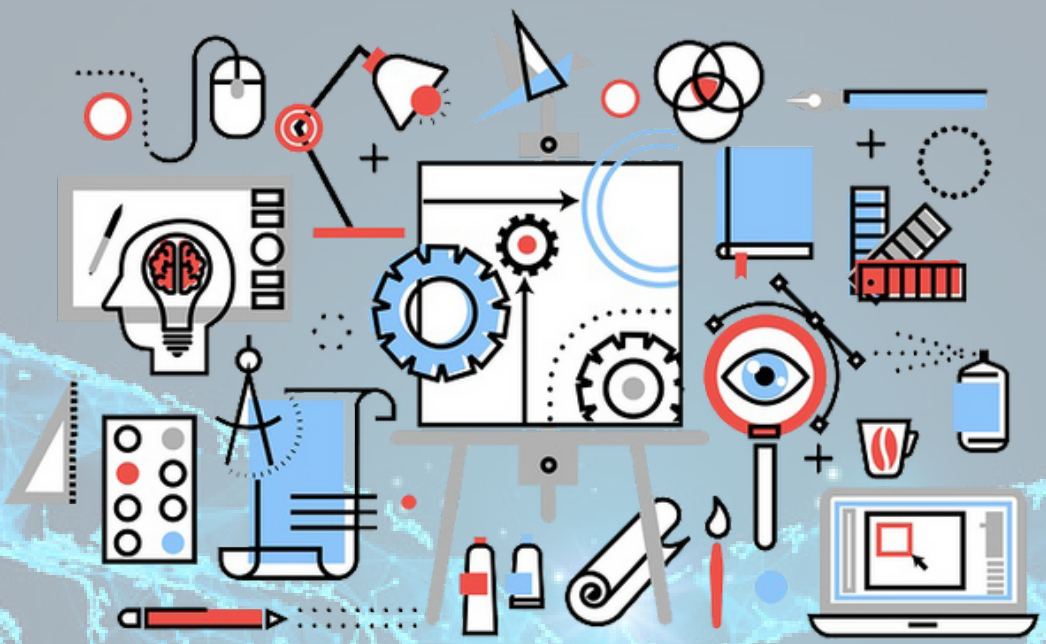
# XRIG-IITM



## XR DESIGN TUTORIAL

## Contacts Details :


Maadhav Patel | +91 63536 47545
Pratik Zade | +91 82750 15550
Shubham Agrawal | +91 98184 37967
Harshal Gajbhiye | +91 95117 64800

again

# Previously...

again

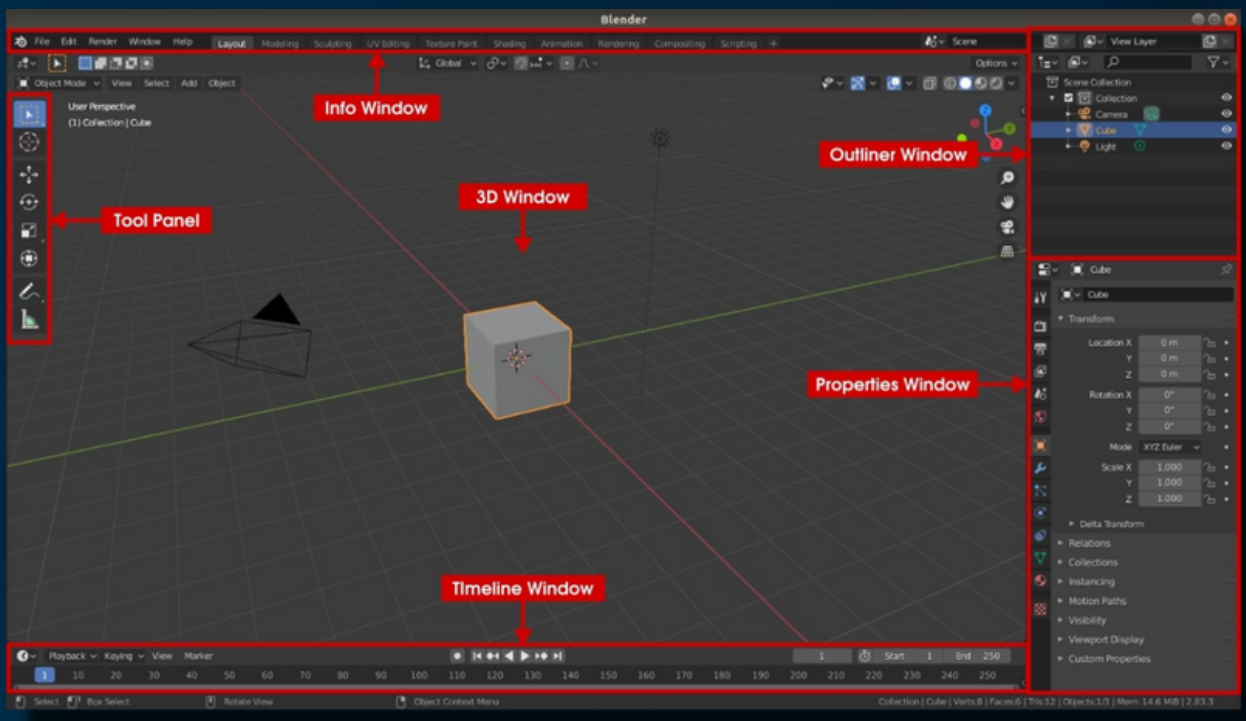
# INTRODUCTION TO BLENDER

Blender is the ultimate tool for creating XR content. Its advanced features allow you to model, animate and render virtual world objects. Its open-source nature fosters collaboration and innovation within the XR community. Being an open-source software for more than 20 years lot of youtube channels exist for tutorials and courses. You can unleash your creativity and dive into the world of XR creation with the help of blender.

# INSTALLATION

1]Go to Blender's official website and download the latest version.
https://www.blender.org/
2]After downloading, open Blender, you will see a default cube, light, and a camera.
3]Delete the default cube and add the cube again (SHIFT+A > mesh > cube); now you are ready.
4]You can refer this for any doubts.

# INTERFACE




**1]Timeline Window:** The Timeline window is where you manage and control the timing of your animations.

**2]Properties Window:** The Properties window is a versatile panel that provides access to various settings and parameters related to your project. It offers tabs for adjusting scene settings, object properties, materials, rendering options, and much more.

**3] Outliner Window:** The Outliner window provides an overview of the objects and elements in your scene. It allows you to organize, select, and manage objects, collections, and layers.

**4]Info Window:** The Info window displays system messages, tooltips, and user interactions. It provides real-time feedback on actions performed in Blender.

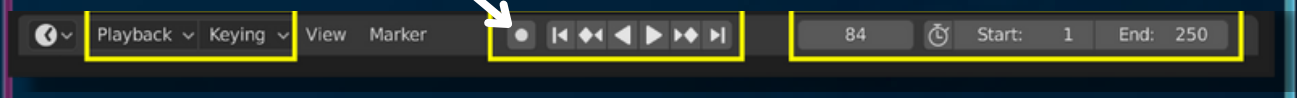
**5] 3D Window:** The 3D window is the heart of Blender's interface, where you create and manipulate your 3D scene.The 3D window also supports various modes, such as object mode, edit mode, and sculpt mode, enabling you to easily perform specific tasks.

**6] Tool Panel:** The Tool panel is a dynamic panel that displays context-sensitive tools based on the current mode and selection in Blender. It provides quick access to commonly used tools and settings.

# Introduction to Timeline

Before you start, Press this bloody damn button if you want to live in peace

-ignore if you are masochist




1) Popovers for Playback and Keying
2) Transport Controls
3) Frame Controls

Transport Controls:
These buttons are used to set, play, and rewind, the Playhead.

Jump to Start ( | ) [Shift-Left]
This sets the cursor to the start of frame range.

Jump to Previous Keyframe ( ◆ ) [Down]
This sets the cursor to the previous keyframe.


Rewind (◀) [Shift-Ctrl-Spacebar]
This plays the animation sequence in reverse. When playing the play buttons switch to a pause button.

Play (▶) [Spacebar]
This plays the animation sequence. When playing the play buttons switch to a pause button.

Jump to Next Keyframe ( ◆) [Up]
This sets the cursor to the next keyframe.
Jump to End ( ▌) Shift-Right
This sets the cursor to the end of frame range.

Pause ( ) [Spacebar]
This stops the animation.

Frame Controls:
Current Frame [Alt-Wheel]
The current frame of the animation/playback range. Also the position of the Playhead.


### Preview Range (clock icon)

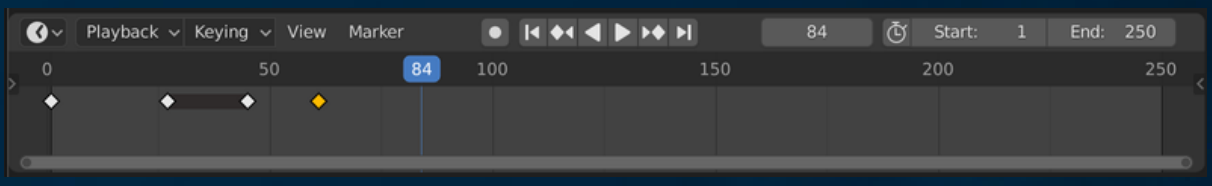
This temporary frame range is used for previewing a smaller part of the full range. The preview range only affects the viewport, not the rendered output.

### Start Frame

The start frame of the animation/playback range.

### End Frame

The end frame of the animation/playback range.




Here you can see
Keyframes (diamond shapes with yellow colored one selected)
Playhead (blue handle)
Scrollbar (along the bottom)

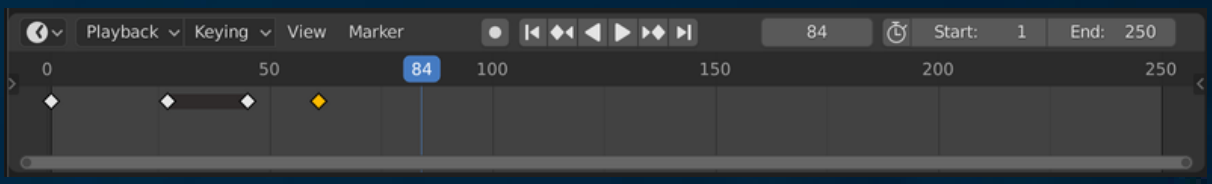
## Playhead

The Playhead is the blue vertical line with the current frame number at the top.

The Playhead can be set or moved to a new position by pressing or holding [LMB] in scrubbing area at the top of the timeline.

## Frame Range

By default, the Frame Range is set to start at frame 1 and end at frame 250. You can change the frame range in the top right of the Timeline header, or in the Output Properties.




## Keyframes

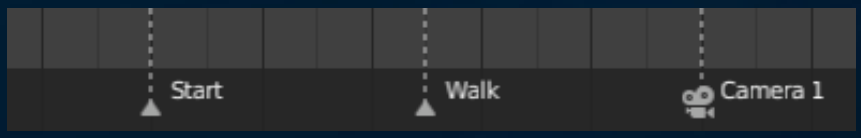
For the active and selected objects, keyframes are displayed as diamond shapes.

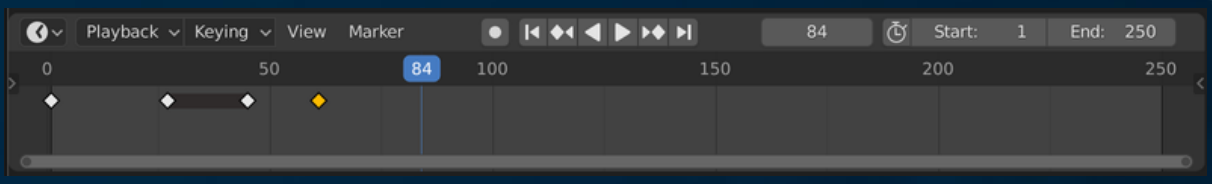
You can click to select one at a time, or select several by holding [Shift], or by dragging a box around the keyframes. You can then move single keys by dragging them, and you can move multiple keys by pressing [G] and scale them with [S].

When you play an animation by pressing [Space], the frame rate is displayed at the top left of the 3D Viewport


## Markers Menu

Markers are used to denote frames with key points or significant events within an animation. Like with most animation editors, markers are shown at the bottom of the editor.

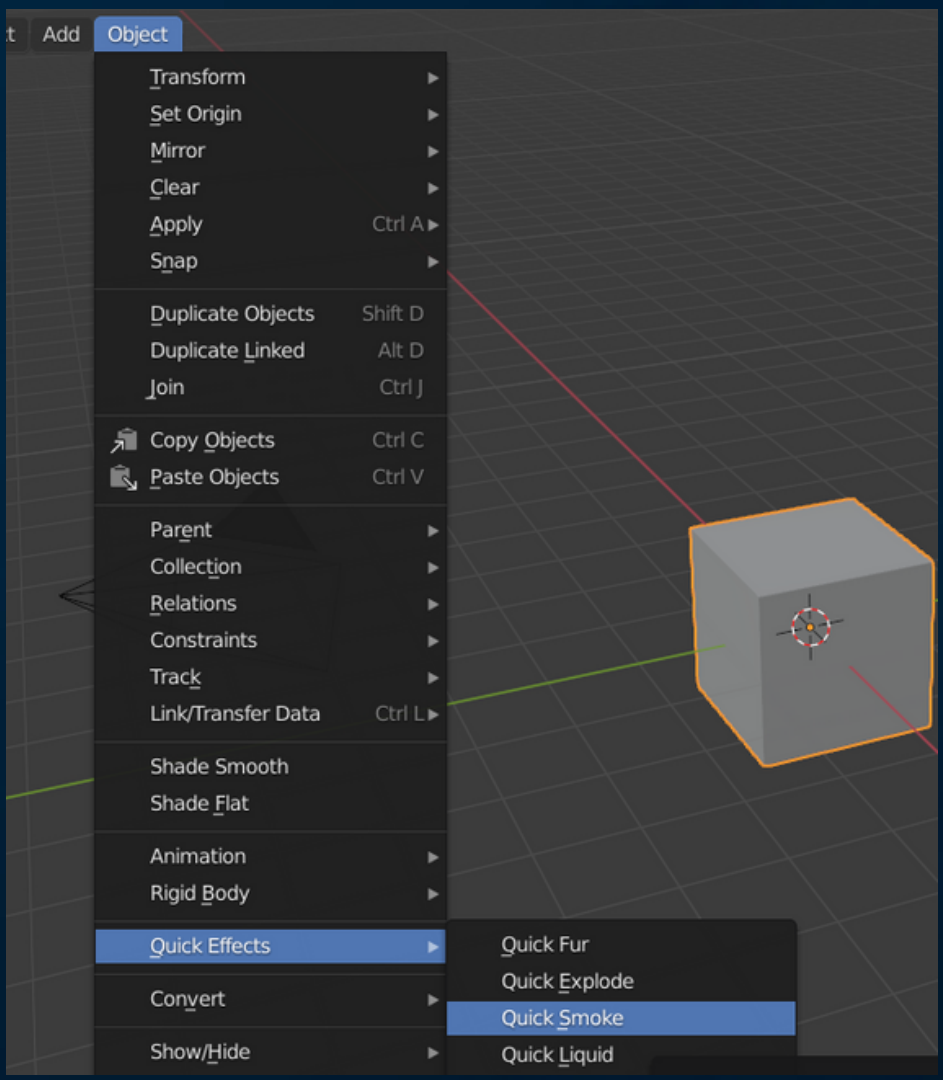





Alright, that's all you need to learn for making a cool animation

If you want to see it in action,
Here's a quick way to make a VFX animation

Select the default cube and select the "Quick Smoke" option from object menu



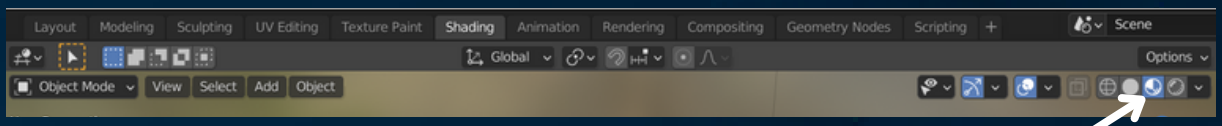

Press [Space] and Done :)

# DAY-4(Textures)

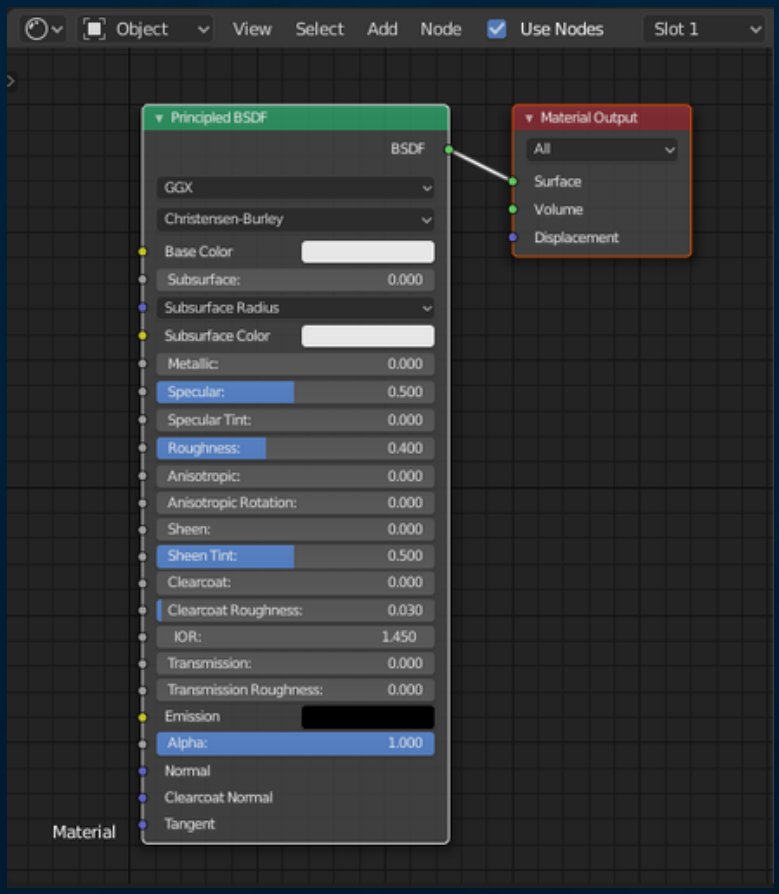
## Shader Editor

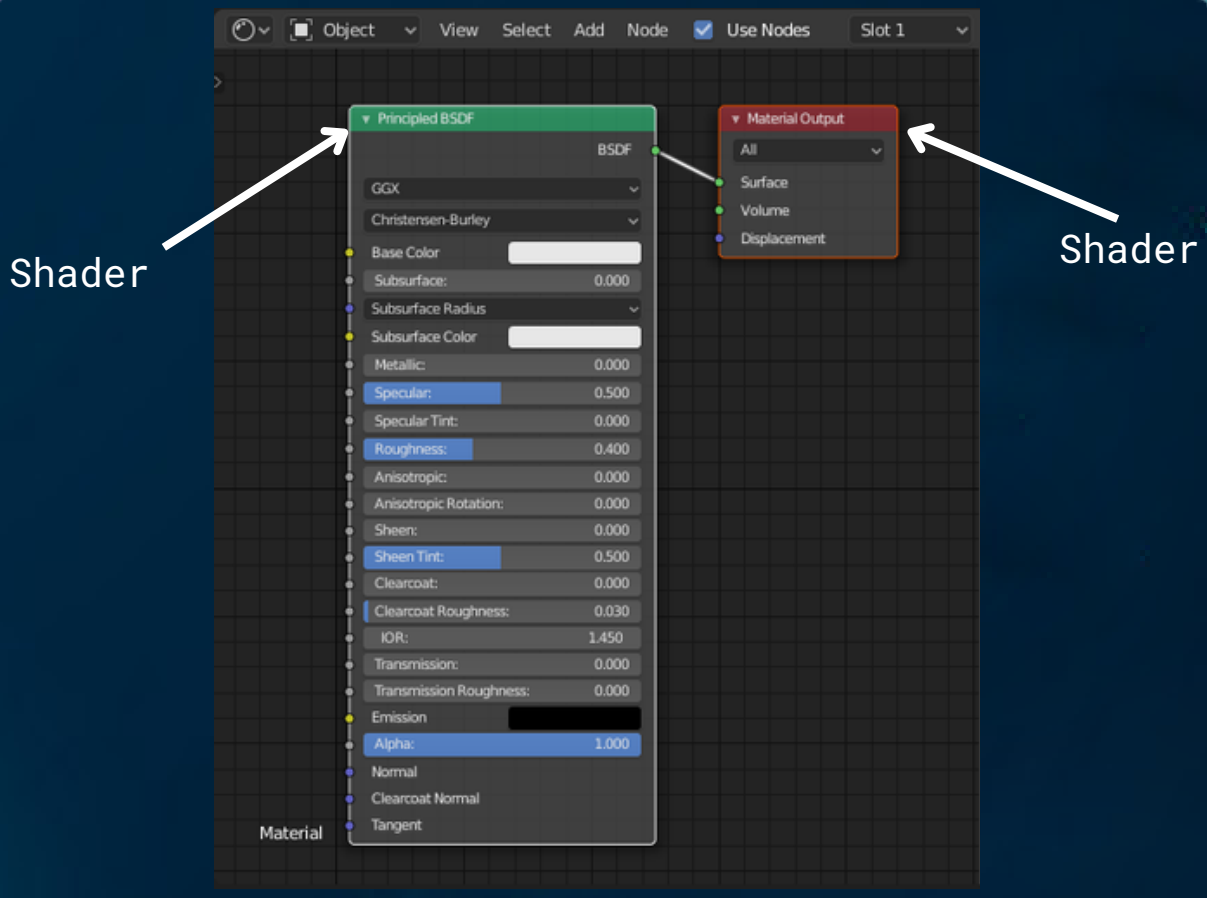
The Shader Editor is used to edit materials which are used for rendering. Materials used by Cycles and Eevee are defined using a node tree.

You can use it by going on {Shading} Tab




Make sure you are in material preview mode






## Principled BSDF

The Principled BSDF that combines multiple layers into a single easy to use node. It is based on the Disney principled model also known as the “PBR”

Almost 80% time you will be using this Shader
Some Important layers we will use are:

## Base Color

Diffuse or metal surface color.

## Subsurface

Mix between diffuse and subsurface scattering. Rather than being a simple mix between Diffuse and Subsurface Scattering, it acts as a multiplier for the Subsurface Radius.

### Subsurface Radius

Average distance that light scatters below the surface. Higher radius gives a softer appearance, as light bleeds into shadows and through the object. The scattering distance is specified separately for the RGB channels, to render materials such as skin where red light scatters deeper. The X, Y and Z values are mapped to the R, G and B values, respectively.

### Subsurface Color

Subsurface scattering base color.

### Metallic

Blends between a non-metallic and metallic material model. A value of 1.0 gives a fully specular reflection tinted with the base color, without diffuse reflection or transmission. At 0.0 the material consists of a diffuse or transmissive base layer, with a specular reflection layer on top.

### Specular

Amount of dielectric specular reflection. Specifies facing (along normal) reflectivity in the most common 0 - 8% range.

### Specular Tint

Tints the facing specular reflection using the base color, while glancing reflection remains white.
Normal dielectrics have colorless reflection, so this parameter is not technically physically correct and is provided for faking the appearance of materials with complex surface structure.

### Roughness
Specifies microfacet roughness of the surface for diffuse and specular reflection.

### Transmission
Mix between fully opaque surface at zero and fully glass like transmission at one.

### Emission
Light emission from the surface, like the Emission shader.

### Emission Strength
Strength of the emitted light. A value of 1.0 will ensure that the object in the image has the exact same color as the Emission Color, i.e. make it ‘shadeless’.

### Alpha
Controls the transparency of the surface, with 1.0 fully opaque. Usually linked to the Alpha output of an Image Texture node.

### Sheen
Amount of soft velvet like reflection near edges, for simulating materials such as cloth.

### Sheen Tint
Mix between white and using base color for sheen reflection.

### Clearcoat
Extra white specular layer on top of others. This is useful for materials like car paint and the like.

hope this table you a better idea