BHARATI VIDYAPEETH'S

INSTITUTE OF COMPUTER APPLICATIONS & MANAGEMENT

(Affiliated to Guru Gobind Singh Indraprastha University,

Approved by AICTE, New Delhi)

Multimedia Technologies (MCA-233) Practical File

Submitted To:

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MCA 2nd Sem, Sec 2

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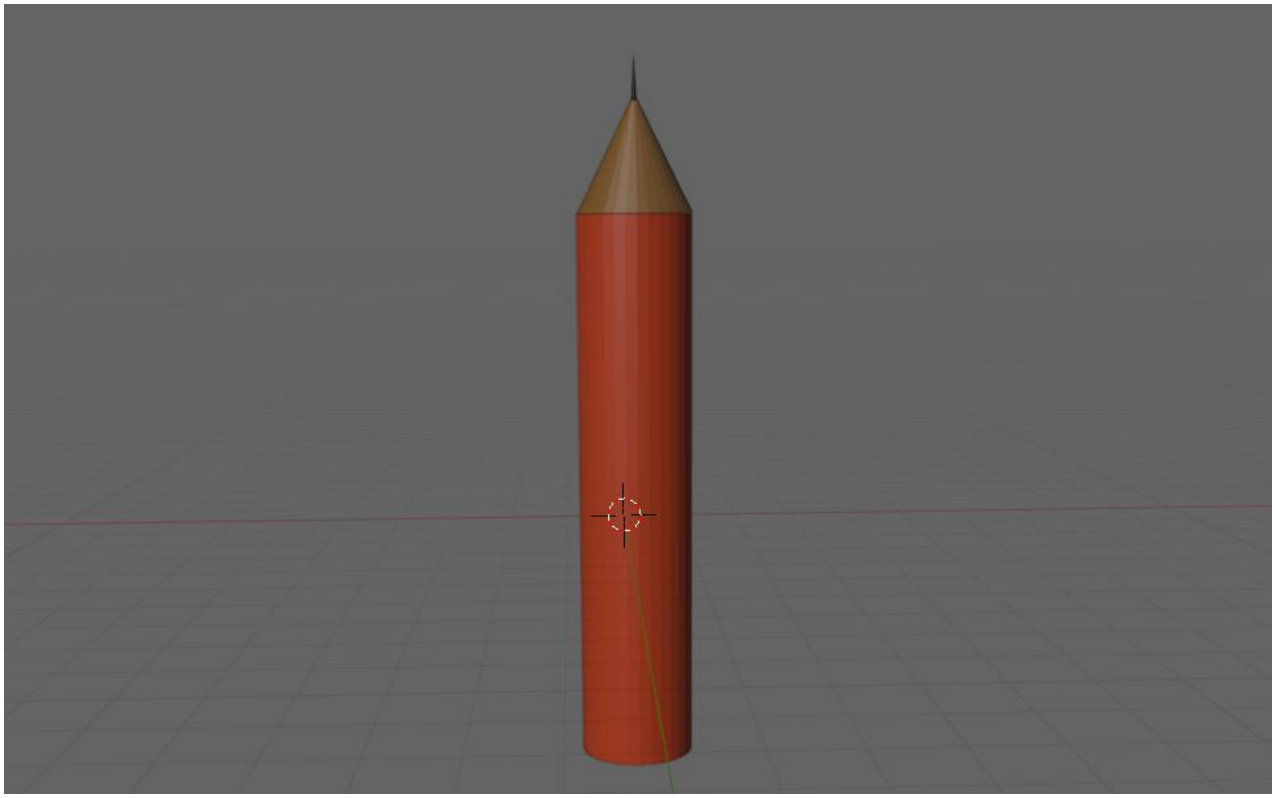
SOLUTIONS

P1. Make a Pencil Model using Blender.

EXECUTION:

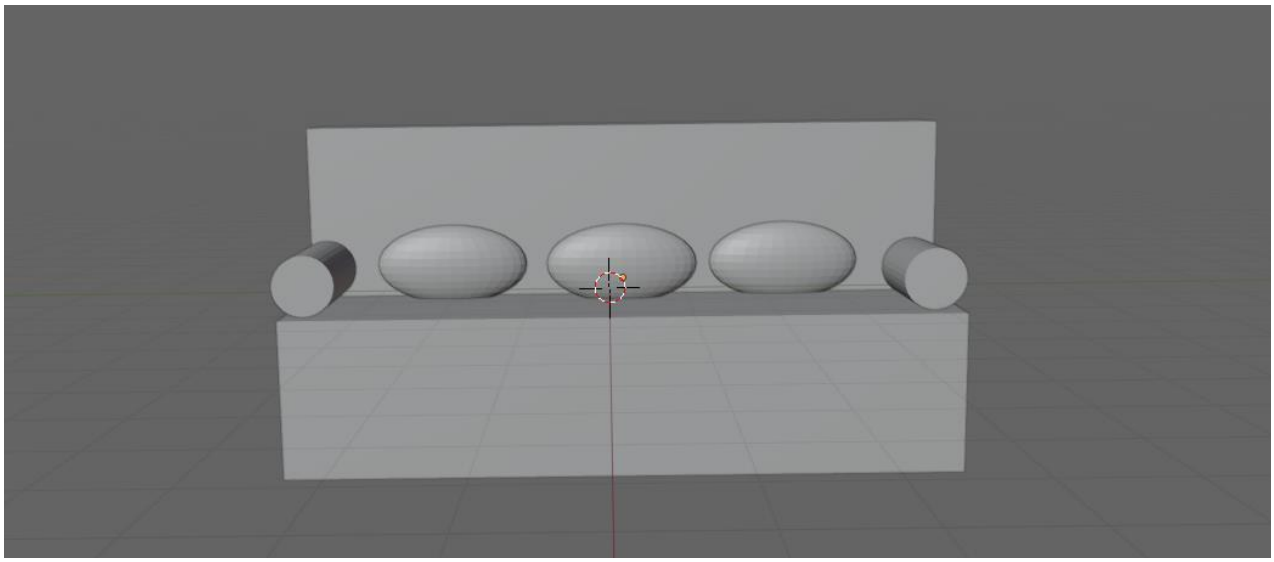


STEPS:

1. Make cylinder orange scaled vertically.
2. Make cone for sharpened part, color it mustard for like the wooden part.
3. Make another cone for lead, scale vertically and put in middle.

P2. Make a Sofa Model using Blender.

EXECUTION:

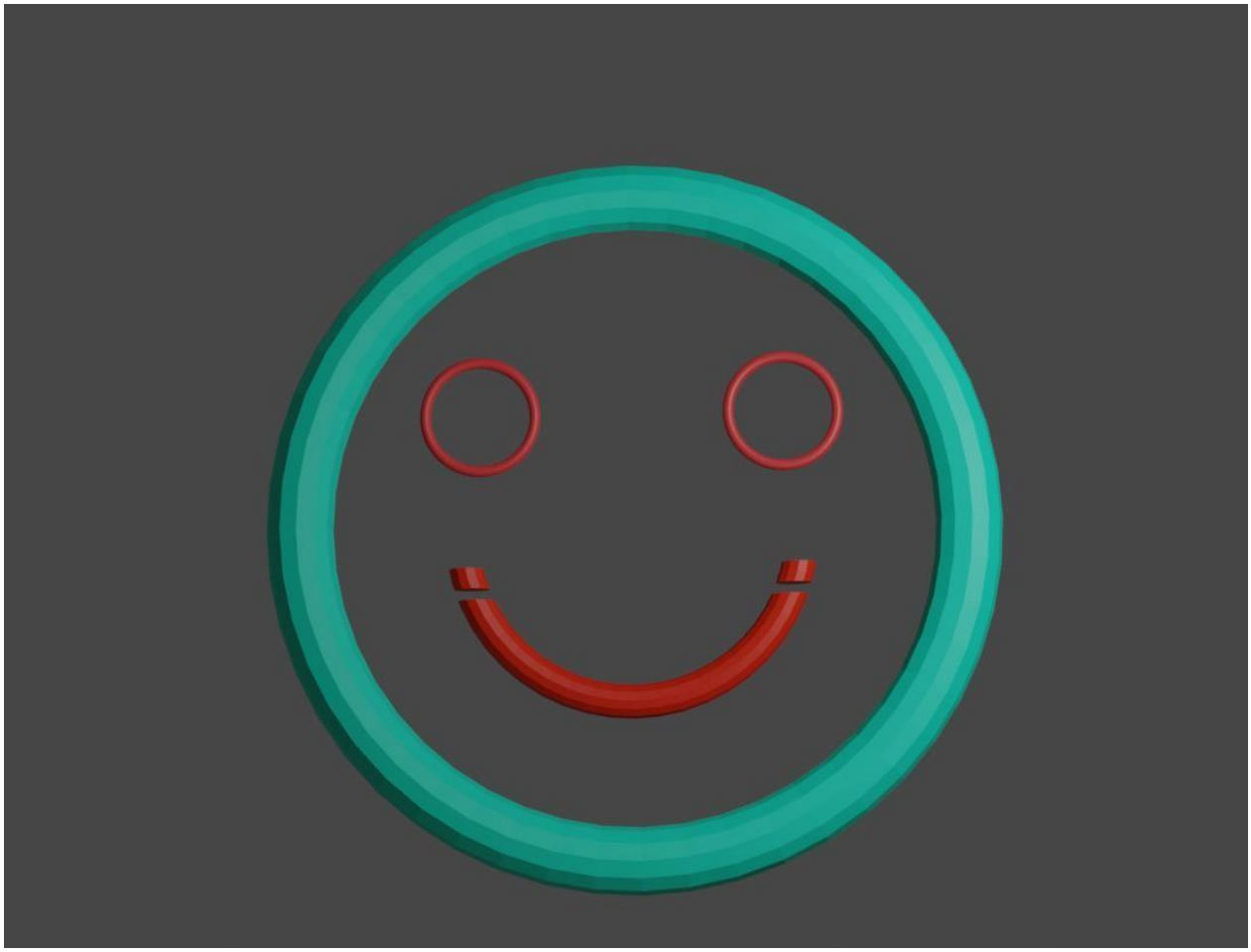


STEPS:

1. Make base with cuboid scaled.
2. Make backrest with another cuboid vertically scaled.
3. Make armrest with two cylinders rotated and scaled.
4. Make three cushions with three spheres scaled.

P3. Make a Smiley Model using Blender.

EXECUTION:



STEPS:

1. After initializing Layout window, click on ADD > MESH > TORUS in the sub-ribbon at top-leftor by pressing SHIFT-A
2. Edit the dimensions of the TORUS in the ADD TORUS window at bottom-left
    a. Major Radius: 1 m
    b. Minor Radius: 7 cm
3. ADD > MESH > TORUS from the sub-ribbon at top-left
    a. Major Radius: 75 cm
    b. Minor Radius: 7 cm
4. ADD > MESH > TORUS from the sub-ribbon at top-left
    a. Major Radius: 15 cm
    b. Minor Radius: 7 cm
5. In object view, RIGHT-CLICK on each Torus and Click on SHADE SMOOTH
6. ADD > MESH > CUBE in the sub-ribbon at top-left. Roughly keep the CUBE larger than theTORUS
7. Select the created 2nd TORUS and select MODIFIER PROPERTIES from the bottom-right panelwith a Blue Wrench icon.

ADD MODIFIER > BOOLEAN

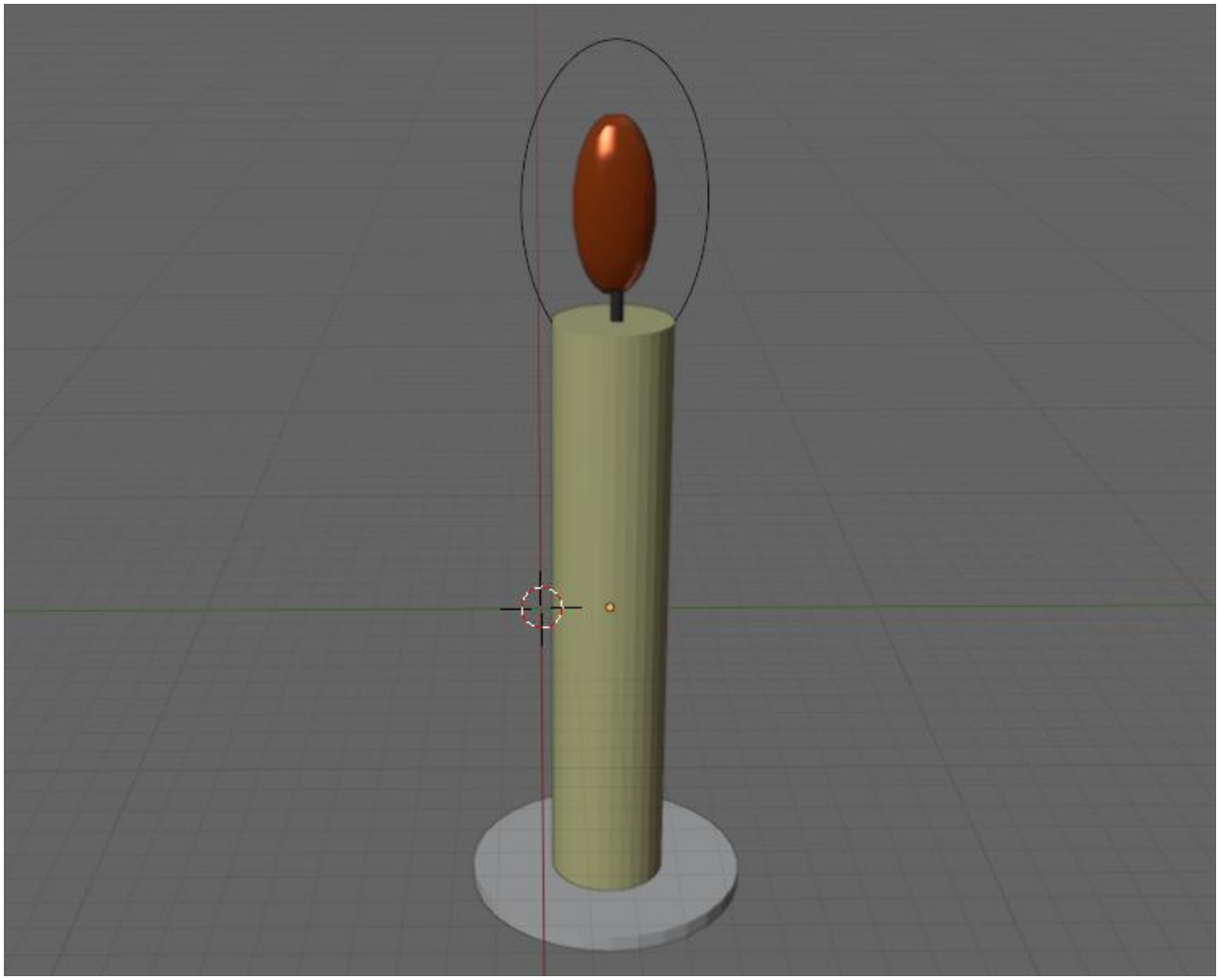
a. DIFFERENCE
b. In Object, select the CUBE

8. Select the created CUBE and similarlyADD MODIFIER > SOLIDIFY
    a. Tune the THICKNESS slider until the inner CUBE starts to 'divide' into a 'Smile'
    b. Use the OFFSET slider to fine tune the total height of the 'Smile'
9. Go back to the 2nd TORUS'S MODIFIER PROPERTIES, click drop down beside the BOOLEANmodifier and click APPLY to keep half of it.
10. Delete the CUBE from the Scene Collection in the up-right panel
11. Move the 2 small TORI in position of the 'Eyes' using the MOVE tool
12. Select the different sections of the 'Smiley' and assign them a particular color from MATERIALPROPERTIES > '+' (To add a new material) > BASE COLOR
13. Select the camera and RIGHT-CLICK > SET CAMERA ACTIVE
14. Open VIEW tab from the up-right edge of the Editor, click on LOCK > CAMERA TO VIEW.
15. Position the camera as per the desired angle and distance
16. Select from the ribbon at top-left RENDER > RENDER IMAGE,

Save image.WINDOW > SAVE SCREENSHOT (EDITOR), Save image

P4. Make a Candle Model using Blender.

EXECUTION:

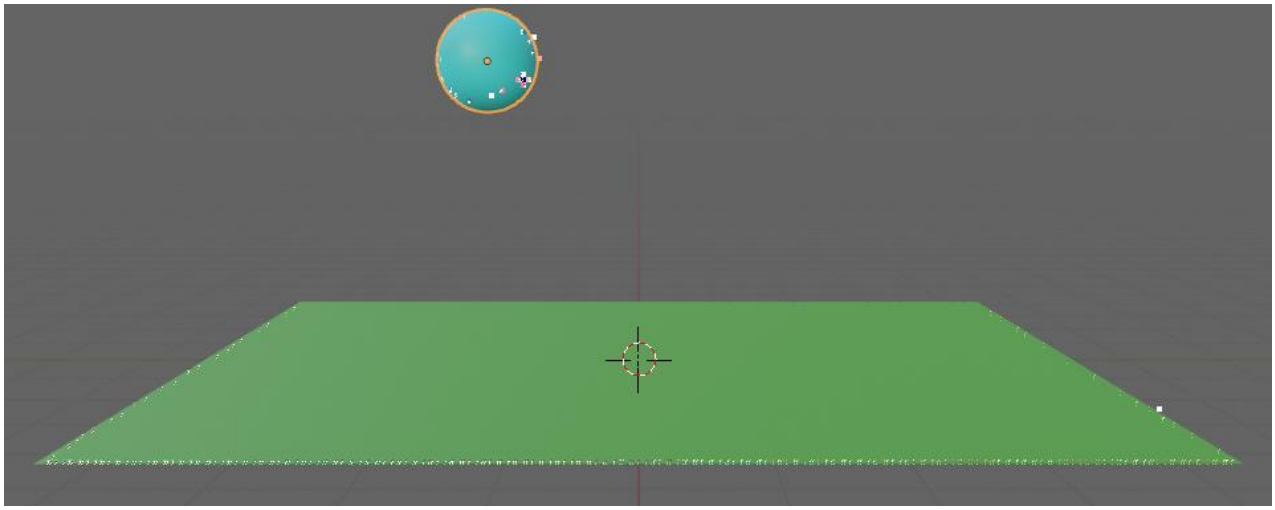


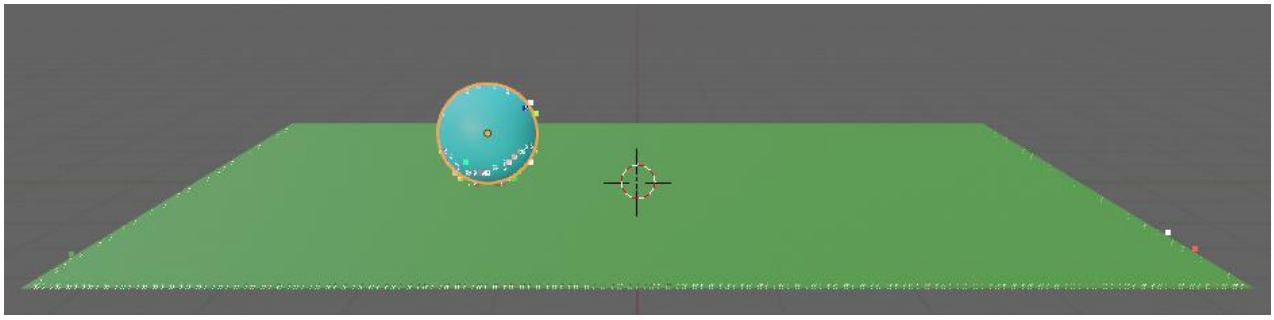
STEPS:

1. Make cylinder with scaling vertically, color it yellow
2. Make cylinder base with white color, scale it vertically
3. Make candle wick black, scaled vertically and put in center
4. Make mball, color red, scale it to be ellipsoid, metallic-ness 0.5 and roughness 0.2, put it on the center of wick.

P5. Create an animation of a bouncing ball using Blender.

EXECUTION:



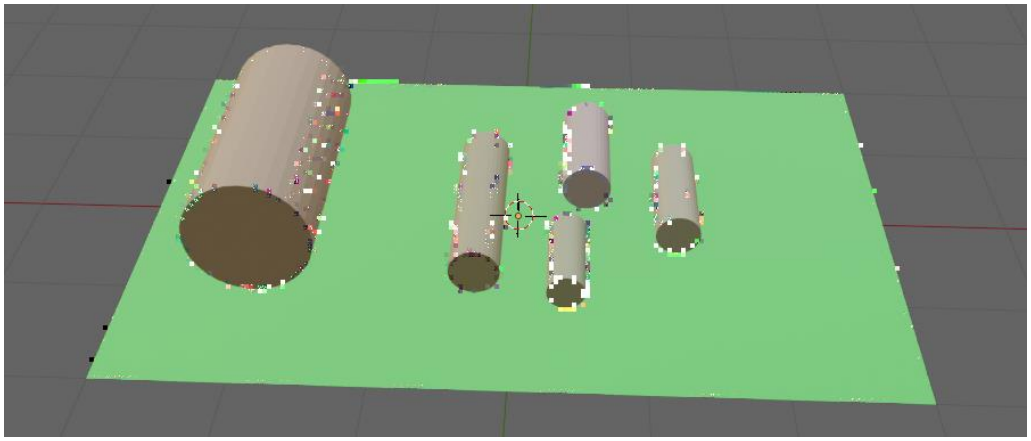


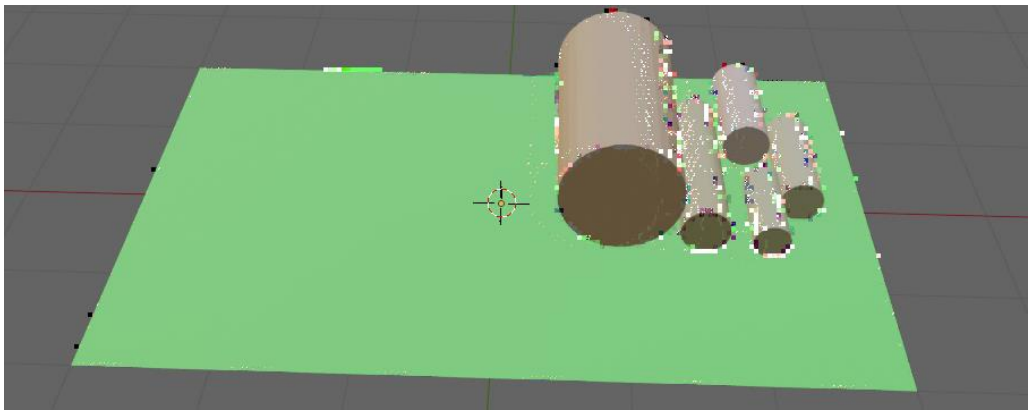
STEPS:

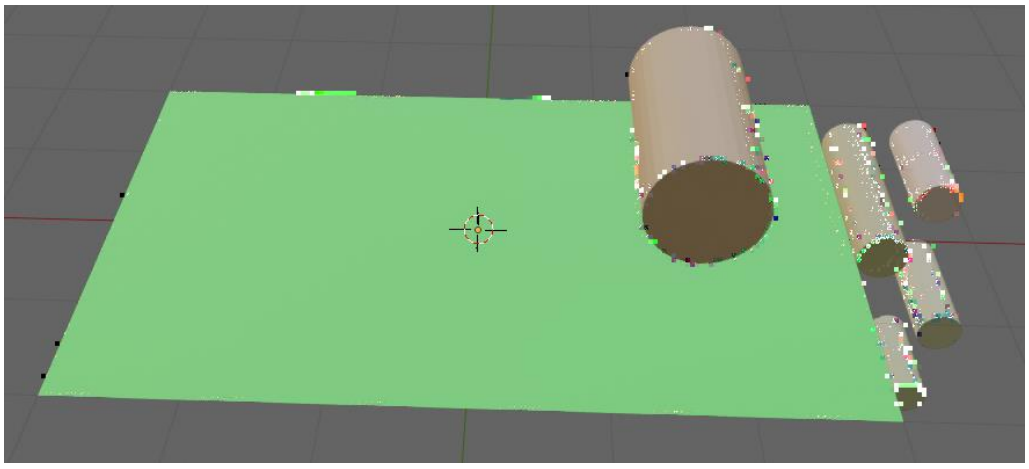
1. Add the plane on which ball bounces as add->mesh->plane, adjust its size and color it green.
2. Make ball as add->mesh->sphere, adjust its size and color it blue.
3. Move ball to initial position as it looks like its in the air.
4. Set timeframes for ball as press I (keyframes menu) -> locate position & rotation on different timestamps as required.
   Example- I have set the ball in air at 0s and at 10s, it touches the plane and at 20s, it is again in the air.
5. This creates the required animation and on play, it plays an animation of bouncing ball.

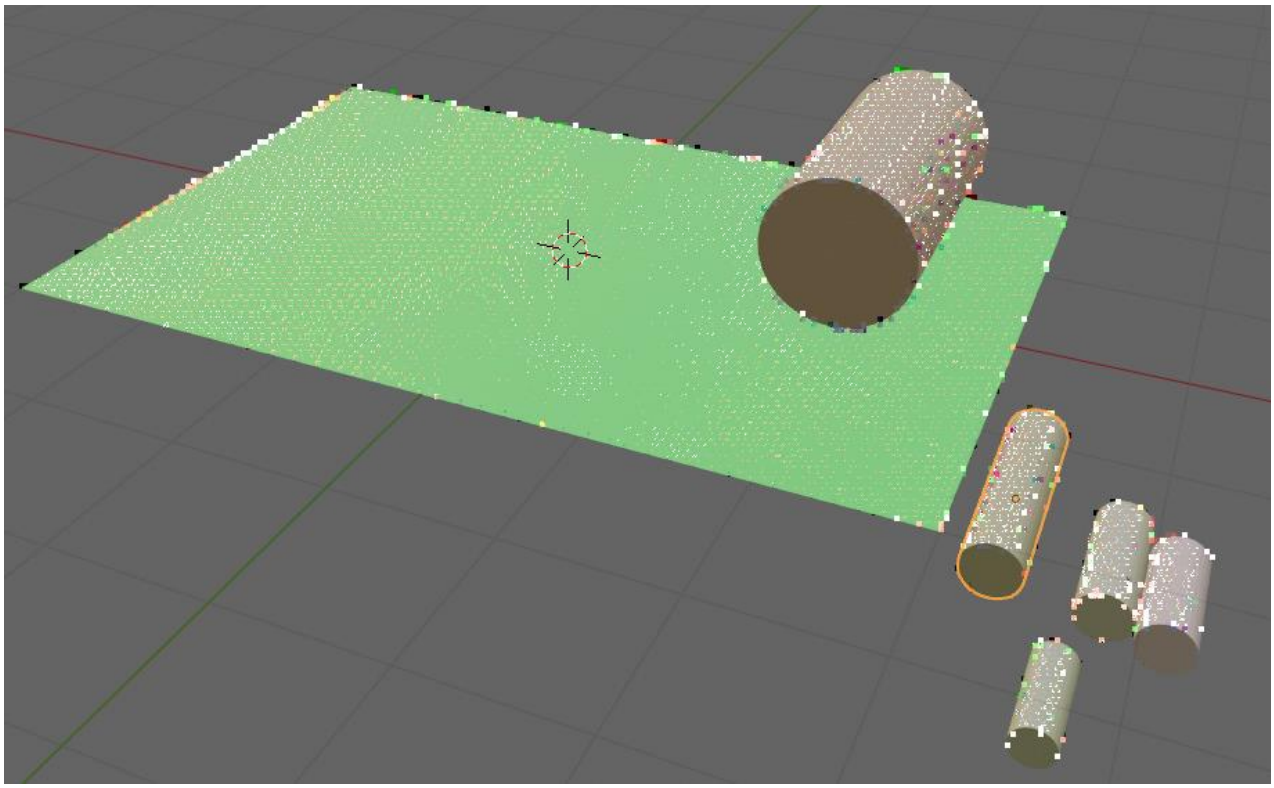
P6. Create an animation of sliding wooden log making other small wooden blocks slide and eventually fall out of the platform.

EXECUTION:







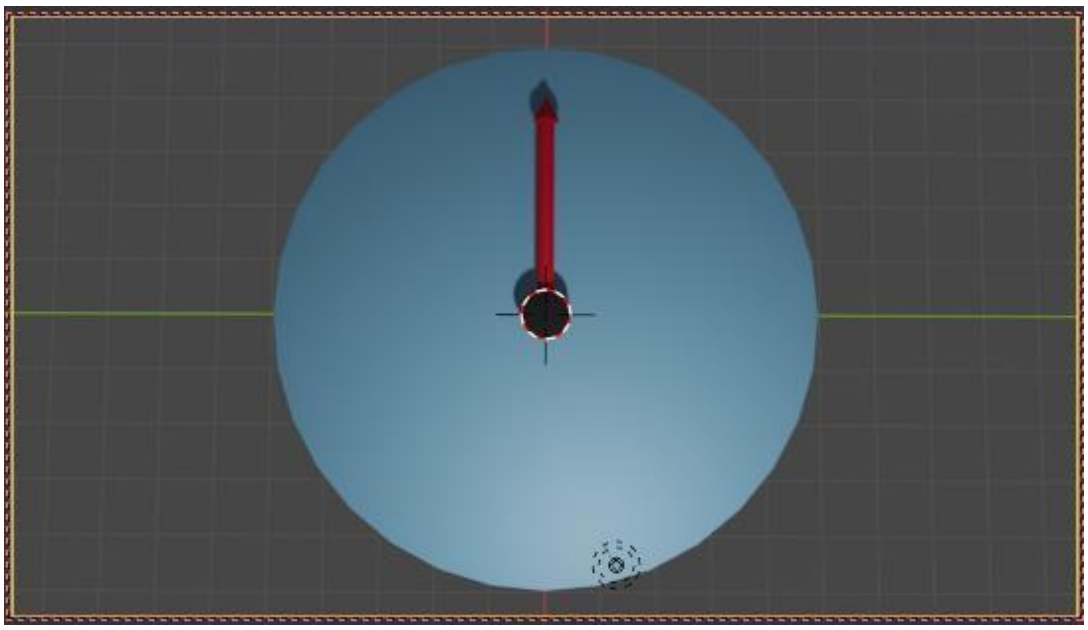


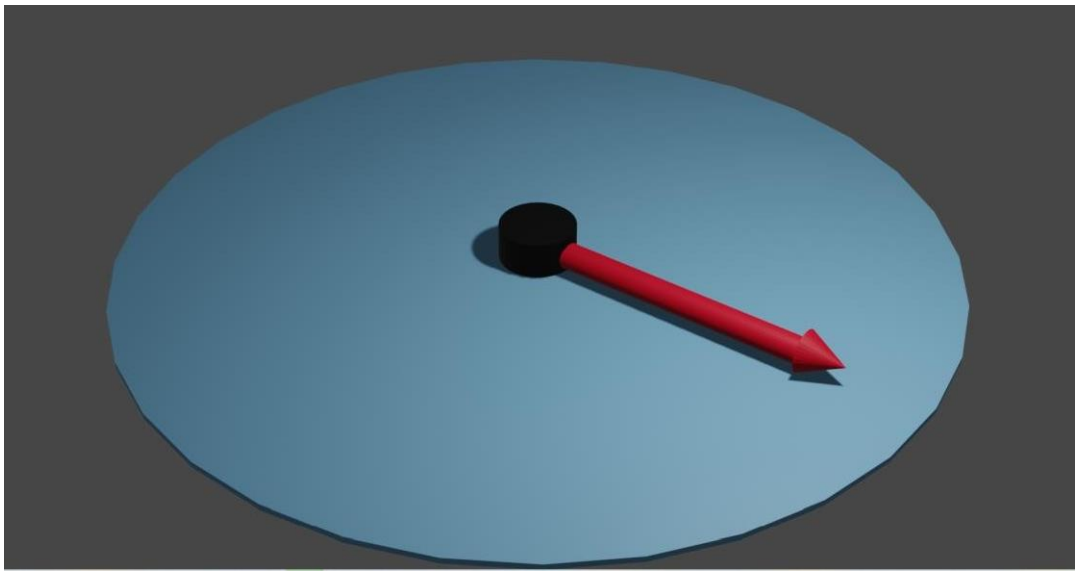
STEPS:

1. Add the plane on which logs are resting initially as add->mesh->plane, adjust its size and color it green.
2. Make logs as add->mesh->cylinder, and color them brown.
3. Scale logs as required.
   Example- make one log bigger than the rest.
4. Move logs to their respective initial positions.
5. Set timeframes for logs as press I (keyframes menu) -> locate position & rotation on different timestamps as required.
   Example- I have set the biggest log at one end at 0s and at 5, 10, 15, 20s, it touches the logs as it goes, moving smaller logs simultaneously and at 30s, all smaller logs are off the plane.
6. This creates the required animation and on play, it plays an animation of bouncing ball.

P7. Create an animation of an arrow embedded into a circle revolving around its center.

EXECUTION:





STEPS:

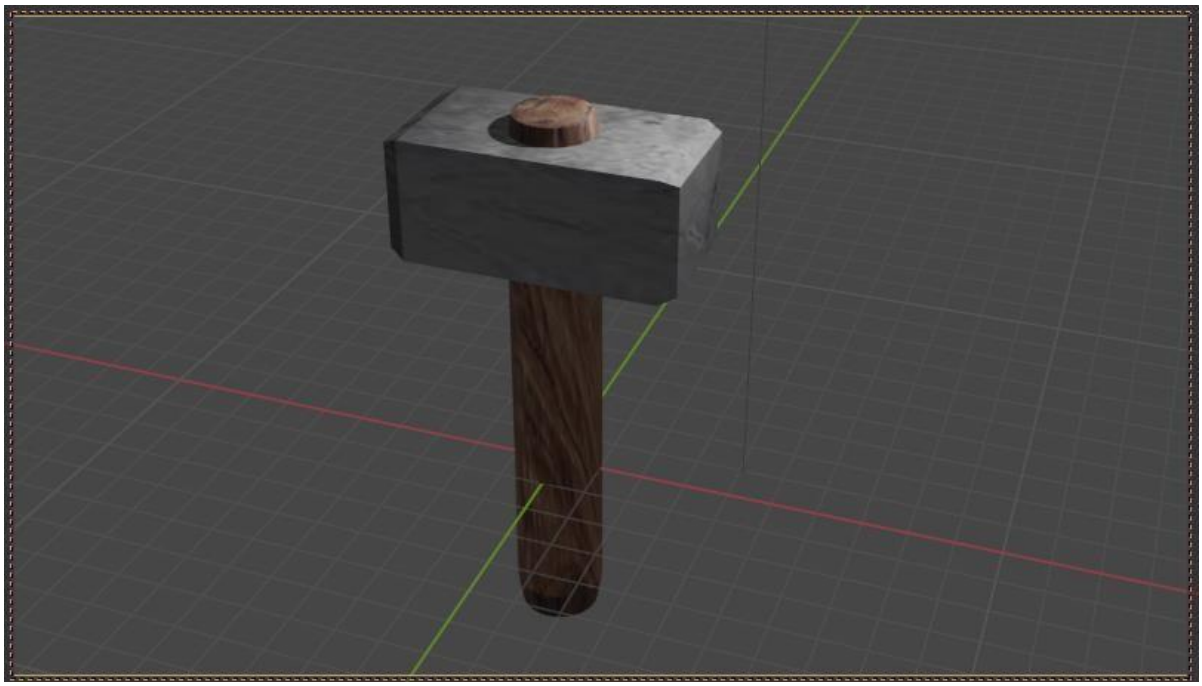
1. Start by creating a new project in Blender and entering into the 3D view.
2. Add a circle to the scene by going to "Add" > "Mesh" > "Circle"
3. Add an arrow by going to "Add" > "Mesh" > "Arrow".
4. Select the arrow and using the "Grab" tool move it until it is placed inside the circle.
5. Select the circle and using the "scale" tool, adjust the size of the circle and the arrow to yourliking.
6. Now, select the circle and go to the "Object Modifiers" tab in the Properties window. Add a"Solidify" modifier and adjust the thickness of the circle as

you wish.

7. Select the arrow and press "Shift+D" to duplicate it.
8. In the duplicated arrow go to the "Object Modifiers" tab in the Properties window and add a"Shrinkwrap" modifier to make it conform to the shape of the Circle.
9. Next, go to the "Timeline" window, move the indicator to frame 0, and press "I" to insert anew keyframe. Move the indicator to the last frame of the animation and rotate the arrow around the Z-axis using the "Rotation" tool. Press "I" again to insert another keyframe.
10. Preview your animation by pressing the "Play" button on the Timeline, and adjust the rotationangle of the arrow as needed.
11. Finally, render the animation by going to "Render" > "Render Animation" or press"Ctrl+F12" and you can export

P8. Create a model of a hammer. After modelling, add material and texture to it.

EXECUTION:



STEPS:

1. Start by creating a new project in Blender and entering into the 3D view.
2. Go to "Add" > "Mesh" > "Cube" to add a cube to the scene.
3. Use the "Grab" tool to adjust the shape of the cube to resemble the head of a hammer.
4. Add a cylinder by going to "Add" > "Mesh" > "Cylinder"
5. Position the cylinder at the top of the cube using the "Grab" tool and adjust its shape toresemble the handle of the hammer.

6. Go to the "Edit Mode" and select the top face of the cylinder and press "E" to extrude it togive the handle a thinner shape.
7. Next, go to the "Object Mode" and press "Shift+D" to duplicate the cylinder and position it atthe bottom of the cube.
8. Scale down the duplicated cylinder and position it to resemble a metal ring that connects thehead and handle of the hammer.
9. Go to "Material" settings in Properties window and add a new material, with the name ofhammer.
10. Next, go to "Texture" settings, add an image as a texture and select the image for the material.
11. In the "Material" settings, adjust the settings such as color, roughness, and specularity to givethe hammer a more realistic appearance.
12. Finally, use the "Lighting" and "Rendering" settings to illuminate and render your model tosee the final result with texture.

P9. Create a model of lamp and render it.

EXECUTION:

STEPS:

1. Start by creating a new project in Blender and entering into the 3D view.
2. Go to "Add" > "Mesh" > "Cube" to add a cube to the scene.
3. Use the "Grab" tool to adjust the shape of the cube to resemble the base of the lamp.
4. Add a cylinder by going to "Add" > "Mesh" > "Cylinder"
5. Position the cylinder at the top of the cube using the "Grab" tool and adjust its shape toresemble the lamp post.
6. Go to the "Edit Mode" and select the top face of the cylinder and press "E" to extrude it togive the post a thinner shape.
7. Next, go to the "Object Mode" and press "Shift+D" to duplicate the cylinder and position it atthe top of the post.
8. Scale down the duplicated cylinder and position it to resemble the lampshade.
9. Add a point light by going to "Object" > "Light" > "Point Light"
10. Position the light inside the shade of the lamp to act as the bulb.
11. Go to the "Material" settings in the Properties window and add a new material to the lampshade and the base, you can set the color of the material to give the lamp the desiredlook.
12. Go to the "Render" settings, and change the settings as per your requirement
13. finally, render the image by pressing "F12" or by going to "Render" > "Render Image".