

Assignment 4

UCS636 3D Modelling & Animation

Software Used: Blender 2.8

Rendering Engine: Cycles

Output Format: Video (MPEG-4/Mp4)



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Compatible Software(s) for enclosed file(s):

For Video (MP4) file

Windows Photo Viewer

Photos App for Windows

Any other software compatible of opening image files

For Blender (.blend) file

Compatible: Blender version 2.8 or above

Ideal: Blender version 2.8

Not compatible: Blender 2.79 or lower

Chosen Concept: Animated Pencil

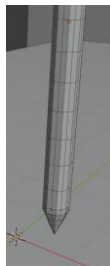
The model was created in blender version 2.8 and all the 800 frames were rendered as PNG images and this image sequence was converted to a video at a frame rate of 50 fps.

The rendered first frame in PNG Format looks like:



Steps for Modelling

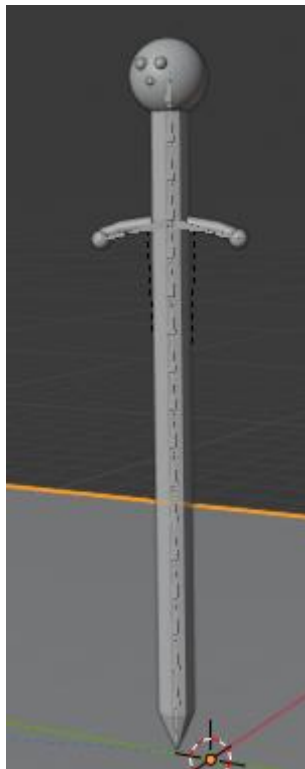
1. Add a circle with 8 vertices with fill as triangle fan
2. Extrude significantly in +Z direction
3. Extrude in -Z direction as well.
4. Connect the vertices of original face to the centre of bottom-most face and delete the remaining faces in that bottom most part
5. Apply a vertical loop cut on each face
6. Apply a horizontal loop cut at the bottom.
7. Connect the edges of bottom face with the vertex where loop horizontal loop cut meets the vertical loop cuts
8. Apply several horizontal loop cuts. It should look like the following figure.



9. In object mode, add an armature to the mesh as shown



10. In object mode. add small cylinders and spheres to form arms, hands and head.
11. In the topmost head, add eyes and nose using spheres.
12. Now select the long cylinder and the armature, click Ctrl+P and set parent with automatic weights.
13. Now in pose Mode, select the armature and click on inverse kinematics.
14. In object mode, click on one hand-sphere, and in pose mode, select the selective bones that form the hand and set parent to bone.
15. In object mode, click on another hand-sphere, and in pose mode, select the selective bones that form the hand and set parent to bone.
16. Repeat similar steps for arms and head
17. The entire model shall look like this.



18. Duplicate this object and keep it aside.
19. Now select the armature in object mode.

20. Press the record button in timeline, press I and select LocRotScale to insert a starting keyframe and then press Alt+A to start the playhead moving. Manually Simulate the movements using mouse button.
21. In pose Mode, select the bones and repeat step 20 for movement of bones and thus the orientation of the model.
22. Similarly rig the duplicate model.
23. Set a plane for floor, a plane for whiteboard and a plane for background. Apply proper textures to them and set the camera that the scene looks like this



24. For handwriting, add a Bezier curve that looks like “Thanks”. Place this on the whiteboard.
25. Add a follow path constraint to pencil for frames 420-800 only. Then add a dynamic paint brush to the tip of the pencil, and a dynamic canvas to the whiteboard. Bake the sequence.
26. Set image sequence material to whiteboard for frames 420-800.
27. The designing, rigging and texture process is complete.
28. The final scene (frame 800) looks like this



Exporting to Unity

