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Autodesk Certified User Exam Objectives

Maya

Maya

Target Audience

The Autodesk Certified User (ACU) Maya exam demonstrates competency in 3D modeling and animation. The exam covers the basic use of the Maya software as well as basic computer modeling and animation practices. An individual earning this certification has approximately 150 hours of instruction and hands-on experience with the product, has proven competency at an industry entry-level, and is ready to enter the job market.

Candidate Description

A successful candidate can create and set a project, navigate the user interface, and create polygon-based models. The successful candidate can also unwrap a model, rig the model with joints, and animate the model. The successful candidate can create materials and apply them, add cameras, and light and render their scenes. He/she has a good knowledge of proper topology and should be able to troubleshoot their models, rigs, and animations. Furthermore, the minimally qualified candidate can function at a junior level under the supervision of a more experienced person.

Prerequisites

It is expected that all candidates will have a general understanding of:

- Basic computer skills
- How to navigate the user interface and workspaces
- 3D perspectives
- The Help system within Maya

Objective Domain

Some of the topics and features of the software that may be covered in the exam are listed below each objective.

Note: Within the context of this exam series, all references to "create, select, manage, etc." indicate "know how to create, select, manage, etc."

1. Scene Management

1.1 Set up a project

1.1.a Use the Project Window

i. Defining a project and setting paths and folders.

1.1.b Create a new project

1.1.c Set the project

1.2 Setup the scene preferences

1.2.a Change the grid spacing

1.2.b Set the scene units

1.2.c Set the scene frame rate

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1.3 Manage scene objects

1.3.a Organize objects

i. Select, group, parent, and duplicate

1.3.b Navigate and rearrange hierarchies

i. Outliner

1.3.c Manage and organize display layers

i. Labeling, visibility, layer type, colors

1.4 Modify Pivots

1.4.a Identify the coordinate system used by the pivot

1.4.b Change the coordinate system used by an object or component

1.4.c Modifying the pivot

i. Move the pivot, rotate the pivot, use discreet rotate on a pivot, snap the pivot to a vertex, center the pivot on an object, and align the pivot

1.5 Modify attributes on one or more objects

1.5.a Locate the value of an animated attribute

1.5.b Change multiple object's attributes

1.5.c Use the Input Line for precision transformation

1.6 Change viewport display

1.6.a Change viewport shading

1.6.b Change viewport lighting

1.6.c Determine poly count

1.6.d Toggle viewport display types

i. Wireframe, Shaded, Textured, Light, etc.

2. Modeling

2.1 Create and modify a polygon primitive

2.1.a Toggle interactive creation

2.1.b Manipulate the parametric attributes

2.1.c Duplicate a polygon primitive

i. Duplicate special and duplicate with transformation

2.1.d Align polygon primitives

2.1.e Deform a polygon surface

i. Use lattice, non-linear deformers (bend, flare, sine, squash, twist and wave)

2.2 Edit polygon surfaces

2.2.a Identify polygon components

2.2.b Add polygon components

i. Insert Edge Loop, Offset Edge, Bevel, Fill Hole, and Append to Polygon.

2.2.c Manipulate polygon components

i. Move and rotate

ii. Switch between various object and component modes

2.2.d Use the mesh display menu

i. Hard and soft edges

2.3 Use image planes

2.3.a Create an image plane

2.3.b Adjust/modify an image plane

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2.4 Modeling tool kit

2.4.a Utilize Symmetry and Constraints

i. Transform and selection constraints

2.4.b Illustrate uses of Soft Selection

i. Change Soft Selection parameters

2.4.c Perform object operations

i. Combine, Separate, Smooth, and Boolean

2.4.d Manipulate components

i. Extrude, bevel, bridge, and add divisions

2.4.e Utilize Tools to modify geometry

i. Quad Draw, Multi-Cut, Target Weld, and Connect

3. Texture Coordinates

3.1 Assign UVs to a mesh

3.1.a Apply basic UV mapping projections

i. Automatic, Planar, Cylindrical, and Spherical

3.1.b Change attributes of UV projections

3.2 Use the UV Editor

3.2.a Describe UV components

i. Define a UV and identifying a UV shell

3.2.b Transform a UV shell

i. Cut, Flip, Move and Sew, Unfold, Relax, and Layout

3.2.c Utilize UV manipulation aids

i. Assign a checker map and showing distortion

4. Materials / Shading

4.1 Work with a material

4.1.a Differentiate material types

4.1.b Differentiate shader types

i. Lambert, Phong, Blinn, Anisotropic, and ai Standard Surface

4.1.c Create a material

4.1.d Assign material to an object

i. Assign materials to selected polygons

4.2 Modify material attributes

4.2.a Use Hypershade

i. Modifying materials using the graph network

4.2.b Apply textures to materials

i. Classify texture types (2D and 3D procedurals, file textures), use color and normal textures, texture placement attributes (tiling textures), and identify projection types (when using procedural or using 3D texture types)

4.2.c Change shader specific attributes

5. Rigging

5.1 Utilize the Skeleton tools

5.1.a Create joints

i. Joint orientation

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5.1.b Edit joints

i. Insert, Mirror, Remove, Connect, Disconnect, and Reroot

ii. Forward Kinematics (FK), joint hierarchy

5.1.c Implement Inverse Kinematics (IK) on joints

i. Solver types (RP/SC)

5.2 Use the Skin tools

5.2.a Bind a mesh to joints

5.2.b Paint skin weights

5.3 Apply Constraints

5.3.a Identify the constraints

i. Parent, Aim, Point, and Orient

5.3.b Apply a constraint

i. Selection order for creation, weights, etc.

5.3.c View hierarchy in the Hypergraph

i. Identifying object connections

6. Cameras

6.1 Work with cameras

6.1.a Differentiate camera types

i. Camera, Camera and Aim, and Camera and Aim and Up.

ii. Identifying when to use each camera type and knowing the difference between perspective versus orthographic cameras.

6.1.b Create a camera

i. Lock and unlock a camera

ii. Look through a selected camera

6.1.c Use the manipulators to adjust camera attributes directly in the viewport

6.1.d Use the Camera tools to adjust the camera view

i. Roll, Yaw-Pitch, Zoom, Dolly, Track, Tumble, Fly and Walk

6.2 Modify camera attribute names or values

6.2.a Define the functions of near and far clip planes

6.2.b Adjust lens/focal length/field of view

6.3 Display Film Gate, Resolution Gate, and other view guides

6.3.a Demonstrate the use of Safe Title and Safe Action

6.3.b Show Resolution gate, film gate, and no gate

7. Animation

7.1 Use the Time Slider and set Animation preferences

7.1.a Modify Animation Time Slider and Playback Preferences

i. Adjust frame rate and playback speed

7.1.b Change the Time Slider range

7.1.c Set keyframes using Auto Key and Set Key

i. Set a keyframe, move/manipulate a keyframe, and removing a keyframe.

7.1.d Create a Playblast

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7.2 Demonstrate how to animate an object along a path

7.2.a Create a curve

7.2.b Animate an object on the path

7.2.c Control object orientation and banking on the path

7.2.d Manipulate an object along the path

i. Set a motion path key, adjust motion path markers, attributes, and demonstrate how to use a flow path object.

7.3 Edit animation tangents using the Graph Editor

7.3.a Differentiate different tangent types

i. Auto Tangents, Spline, Clamped, Linear, Flat, Stepped, and Plateau.

ii. Switch between spline and stepped tangents

7.3.b Break and unify tangents

7.3.c Lock and unlock(free) the length of a tangent

i. Weighted and unweighted tangents

8. Lighting

8.1 Work with lights

8.1.a Differentiate light types

i. Ambient, Directional, Spot, Point, and Area

8.1.b Create a light

8.1.c Adjust light type-specific attributes

8.1.d Change common light attributes

i. Color and intensity

8.1.e Use the manipulators to adjust light attributes directly in the viewport

8.1.f Link lights to specific objects

i. Make and break light links

8.2 Work with shadow types

8.2.a Differentiate shadow types

i. Depth Map and Raytraced

8.2.b Adjust type-specific shadow attributes

i. Shadow quality and color

9. Rendering

9.1 Differentiate the built-in renderers

i. Arnold, Software, Hardware 2.0, and Vector

9.2 Configure render settings

9.2.a Change common settings

i. Camera and resolution settings, Frame range

ii. Frame/animation extension from single image to multiple images

iii.Adjust frame padding

9.2.b Change renderer specific settings

i. Adjusting basic Arnold settings (Sampling)

9.2.c Prepare the render settings for batch rendering

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