

Autodesk Maya 2015: A Comprehensive Guide

CADCIM Technologies

*525 St. Andrews Drive
Scherverville, IN 46375, USA
(www.cadcim.com)*

Contributing Author

Sham Tickoo

*Professor
Purdue University Calumet
Hammond, Indiana, USA*





CADCIM Technologies

**Autodesk Maya 2015: A Comprehensive Guide
Sham Tickoo**

Published by CADCIM Technologies, 525 St Andrews Drive, Schererville, IN 46375 USA. Copyright © 2014, CADCIM Technologies. All rights reserved. No part of this publication may be reproduced or distributed in any form or by any means, or stored in the database or retrieval system without the prior permission of CADCIM Technologies.

ISBN: 978-1-936646-74-6

NOTICE TO THE READER

Publisher does not warrant or guarantee any of the products described in the text or perform any independent analysis in connection with any of the product information contained in the text. Publisher does not assume, and expressly disclaims, any obligation to obtain and include information other than that provided to it by the manufacturer.

The reader is expressly warned to consider and adopt all safety precautions that might be indicated by the activities herein and to avoid all potential hazards. By following the instructions contained herein, the reader willingly assumes all risks in connection with such instructions.

The Publisher makes no representation or warranties of any kind, including but not limited to, the warranties of fitness for a particular purpose or merchantability, nor are any such representations implied with respect to the material set forth herein, and the publisher takes no responsibility with respect to such material. The publisher shall not be liable for any special, consequential, or exemplary damages resulting, in whole or part, from the reader's use of, or reliance upon, this material.

www.cadcim.com

DEDICATION

*To teachers, who make it possible to disseminate knowledge
to enlighten the young and curious minds
of our future generations*

*To students, who are dedicated to learning new technologies
and making the world a better place to live in*

THANKS

To employees of CADCIM Technologies for their valuable help

Online Training Program Offered by CADCIM Technologies

CADCIM Technologies provides effective and affordable virtual online training on various software packages including Computer Aided Design and Manufacturing (CAD/CAM), computer programming languages, animation, architecture, and GIS. The training is delivered 'live' via Internet at any time, any place, and at any pace to individuals as well as students of colleges, universities, and CAD/CAM training centers. The main features of this program are:

Training for Students and Companies in a Classroom Setting

Highly experienced instructors and qualified Engineers at CADCIM Technologies conduct the classes under the guidance of Prof. Sham Tickoo of Purdue University Calumet, USA. This team has authored several textbooks that are rated "one of the best" in their categories and are used in various colleges, universities, and training centers in North America, Europe, and in other parts of the world.

Training for Individuals

CADCIM Technologies with its cost effective and time saving initiative strives to deliver the training in the comfort of your home or work place, thereby relieving you from the hassles of traveling to training centers.

Training Offered on Software Packages

CADCIM Technologies provides basic and advanced training on the following software packages:

CAD/CAM/CAE: *CATIA, Pro/ENGINEER Wildfire, SolidWorks, Autodesk Inventor, Solid Edge, NX, AutoCAD, AutoCAD LT, Customizing AutoCAD, EdgeCAM, ANSYS, Creo Direct, and AutoCAD MEP*

Computer Programming: *C++, VB.NET, Oracle, AJAX, and Java*

Animation and Styling: *Autodesk 3ds Max, Autodesk 3ds Max Design, Autodesk Maya, eyeon Fusion, Adobe Flash Professional, and Autodesk Alias Design*

Architecture, Civil, and GIS: *Autodesk Revit Architecture, AutoCAD Civil 3D, Autodesk Revit Structure, and AutoCAD Map 3D*

For more information, please visit the following link: www.cadcim.com

Note

If you are a faculty member, you can register by clicking on the following link to access the teaching resources: www.cadcim.com/Registration.aspx. The student resources are available at www.cadcim.com. We also provide **Live Virtual Online Training** on various software packages. For more information, write us at sales@cadcim.com.

Table of Contents

Dedication	iii
Preface	xvii

Chapter 1: Exploring Maya Interface

Introduction to Autodesk Maya	1-2
Starting Autodesk Maya 2015	1-2
Autodesk Maya 2015 Screen Components	1-4
Menubar	1-6
Status Line	1-6
Shelf	1-17
Tool Box	1-20
Time Slider and Range Slider	1-25
Command Line	1-27
Help Line	1-28
Panel Menu	1-28
Panel Toolbar	1-29
Channel Box / Layer Editor	1-34
Attribute Editor	1-36
Hotkeys	1-37
Hotbox	1-37
Outliner	1-38
Marking Menus	1-39
Pipeline Caching	1-40
Alembic Cache	1-40
GPU Cache	1-42
Interoperability Options in Maya	1-42
Navigating the Viewports	1-42
Self-Evaluation Test	1-42
Review Questions	1-43

Enhanced

Chapter 2: Polygon Modeling

Introduction	2-2
Polygon Primitives	2-2
Creating a Sphere	2-2
Creating a Cube	2-3
Creating a Prism	2-4

Creating a Pyramid		2-5
Creating a Pipe		2-6
Creating a Helix		2-7
Creating a Soccer Ball		2-8
Creating a Platonic Solid		2-9
Polygon Editing Tools		2-10
Booleans		2-11
Union		2-12
Combine		2-13
Separate		2-13
Smooth		2-14
Fill Hole		2-14
Reduce		2-15
Editing the Polygon Components		2-15
Chamfer		2-16
Detail		2-17
Extrude	Enhanced	2-17
Bevel		2-18
Add Divisions		2-18
Bridge		2-19
Collapse		2-20
Edit Edge Flow		2-21
Delete Edge/Vertex		2-21
Duplicate		2-21
Editing the Polygon Components Using Mesh Tools	Enhanced	2-21
Create Polygon Tool		2-22
Cut Faces Tool		2-22
Insert Edge Loop Tool		2-23
Merge Vertex Tool		2-24
Multi-Cut Tool	New	2-25
Offset Edge Loop Tool		2-25
Tutorial 1		2-26
Tutorial 2		2-33
Self-Evaluation Test		2-43
Review Questions		2-44
Exercise 1		2-45
Exercise 2		2-45
Exercise 3		2-46

Chapter 3: NURBS Curves and Surfaces

Introduction	3-2
NURBS Primitives	3-2
Creating a Sphere	3-2
Creating a Cube	3-6
Creating a Cylinder	3-8
Creating a Cone	3-9

Creating a Plane	3-10
Creating a Torus	3-12
Creating a Circle	3-13
Creating a Square	3-14
Working with NURBS components	3-15
Tools for Creating NURBS Curves	3-16
CV Curve Tool	3-16
EP Curve Tool	3-17
Pencil Curve Tool	3-17
Arc Tools	3-18
Tools for Creating Surfaces	3-18
Revolve Tool	3-18
Loft Tool	3-20
Planar Tool	3-23
Extrude Tool	3-24
Birail Tool	3-27
Boundary Tool	3-27
Square Tool	3-28
Bevel Tool	3-28
Bevel Plus Tool	3-29
Tutorial 1	3-31
Tutorial 2	3-39
Self-Evaluation Test	3-44
Review Questions	3-45
Exercise 1	3-46
Exercise 2	3-46
Exercise 3	3-47
Exercise 4	3-47
Exercise 5	3-48

Chapter 4: NURBS Modeling

Introduction	4-2
Working with NURBS Tools	4-2
Duplicate NURBS Patches	4-2
Project Curve on Surface	4-2
Intersect Surfaces	4-3
Trim Tool	4-3
Untrim Surfaces	4-4
Attach Surfaces	4-4
Attach Without Moving	4-6
Detach Surfaces	4-6
Align Surfaces	4-6
Open/Close Surfaces	4-7
Insert Isoparms	4-7
Extend Surfaces	4-8
Offset Surfaces	4-8

Reverse Surface Direction	4-9
Rebuild Surfaces	4-9
Sculpt Geometry Tool	4-12
Converting Objects	4-15
Converting NURBS to Polygons	4-15
Converting NURBS to Subdiv	4-16
Tutorial 1	4-17
Tutorial 2	4-22
Self-Evaluation Test	4-32
Review Questions	4-33
Exercise 1	4-33
Exercise 2	4-34

Chapter 5: UV Mapping

Introduction	5-2
UV Mapping	5-2
Planar Mapping	5-2
Cylindrical Mapping	5-4
Spherical Mapping	5-5
Automatic Mapping	5-6
Create UVs Based On Camera	5-8
Best Plane Texturing Tool	5-8
UV Texture Editor	5-9
UV Tool Group	5-9
UV Orientation Group	5-12
Cut and Sew UV Group	5-13
UV Layout Group	5-14
UV Alignment Group	5-15
Isolate Selection Group	5-15
Image and Texture Group	5-16
Show/Hide the Display Icons Group	5-17
UV Texturing Group	5-18
UV Edit Group	5-19
Tutorial 1	5-20
Tutorial 2	5-25
Self-Evaluation Test	5-36
Review Questions	5-36
Exercise 1	5-37
Exercise 2	5-38

Chapter 6: Shading and Texturing

Introduction	6-2
Working in the Hypershade Window	6-2
Create Bar	6-2
Hypershade Top Tabs	6-3
Work Area	6-3

Hypershade Main Toolbar	6-3
Hypershade Tab Toolbar	6-5
Exploring the Shaders	6-6
Surface	6-6
Shader Attributes	6-12
Common Material Attributes	6-12
Tutorial 1	6-17
Tutorial 2	6-26
Tutorial 3	6-30
Self-Evaluation Test	6-34
Review Questions	6-34
Exercise 1	6-35
Exercise 2	6-36
Exercise 3	6-36

Chapter 7: Lighting

Introduction	7-2
Types of Lights	7-2
Ambient Light	7-2
Area Light	7-5
Directional Light	7-5
Point Light	7-6
Spot Light	7-8
Volume Light	7-11
Glow and Halo Effects	7-11
Optical FX Attributes area	7-12
Physical Sun and Sky Effect	7-15
Light Linking	7-16
Cameras	7-16
Camera	7-17
Camera and Aim	7-18
Camera, Aim and Up	7-19
Stereo Camera	7-19
Multi Stereo Rig	7-19
Tutorial 1	7-20
Tutorial 2	7-22
Tutorial 3	7-25
Self-Evaluation Test	7-29
Review Questions	7-29
Exercise 1	7-30

Chapter 8: Animation

Introduction	8-2
Animation Types	8-2
Keyframe Animation	8-2
Effects Animation	8-2

Nonlinear Animation	8-2
Path Animation	8-2
Motion Capture Animation	8-2
Technical Animation	8-3
Animation Controls	8-3
Playback Controls	8-3
Animation preferences	8-4
Commonly Used Terms in Animation	8-6
Frame Rate	8-6
Range	8-6
Setting Keys	8-6
Creating Different Types of Animations	8-7
Path Animation	8-7
Keyframe Animation	8-7
Nonlinear Animation	8-9
Animation Menus	8-9
Edit Menu	8-9
Animate Menu	8-10
Window Menu	8-12
Graph Editor	8-13
Move Nearest Picked Key Tool	8-14
Insert Keys Tool	8-14
Lattice Deform Keys Tool	8-14
Region Tool: Scale or move keys	8-14
Retime Tool: Scale and ripple keys	8-15
Frame All	8-15
Frame playback range	8-15
Center the view about the current time	8-15
Auto tangents	8-15
Spline tangents	8-15
Linear tangents	8-16
Clamped tangents	8-16
Flat tangents	8-16
Step tangents	8-17
Stepped Next tangents	8-17
Plateau tangents	8-17
Buffer Curve Snapshot	8-17
Swap Buffer Curves	8-18
Break tangents	8-18
Unify tangents	8-18
Free tangent weight	8-18
Lock tangent weight	8-18
Auto load Graph Editor on/off	8-19
Load Graph Editor from selection	8-19
Time Snap on/off	8-19
Value Snap on/off	8-19
Enable normalized curve display	8-19

Disable normalized curve display	8-19
Renormalize curve	8-19
Enable stacked curve display	8-19
Disable stacked curve display	8-19
Pre-infinity cycle	8-20
Pre-infinity cycle with offset	8-20
Post-infinity cycle	8-21
Post-infinity cycle with offset	8-21
Unconstrained drag	8-21
Open the Dope Sheet	8-21
Open the Trax Editor	8-21
Animation Layers	8-21
Creating an Animation Layer	8-22
Animation Layer Pane	8-23
Animation Layer Modes	8-27
Creating the Parent-Child Relationship in the Animation Layer Editor	8-27
Tutorial 1	8-28
Tutorial 2	8-34
Tutorial 3	8-37
Self-Evaluation Test	8-40
Review Questions	8-41
Exercise 1	8-41

Chapter 9: Rigging, Constraints, and Deformers

Introduction	9-2
Bones and Joints	9-2
Creating a Bone Structure	9-2
Types of Joints	9-4
Parent-Child Relationship	9-4
Kinematics	9-4
Deformers	9-5
Blend Shape Deformer	9-5
Lattice Deformer	9-6
Wrap Deformer	9-6
Shrink Wrap Deformer	9-7
Cluster Deformer	9-7
Soft Modification Deformer	9-7
Nonlinear Deformers	9-8
Sculpt Deformer	9-13
Texture Deformer	9-13
Jiggle Deformer	9-14
Wire Tool	9-14
Wrinkle Tool	9-14
Point on Curve	9-14
Applying Constraints	9-15
Point Constraint	9-15

Aim Constraint	9-15
Orient Constraint	9-16
Scale Constraint	9-17
Parent Constraint	9-17
Geometry Constraint	9-17
Normal Constraint	9-17
Tangent Constraint	9-18
Pole Vector Constraint	9-18
Point On Poly Constraint	9-18
Closet Point Constraint	9-18
Adding Constraints to Animation Layers	9-18
HumanIK Character Controls	9-19
Character Drop-down list	9-19
Source Drop-down list	9-19
Create Area	9-19
Define Area	9-19
Import Area	9-19
Skinning an Object	9-19
Paint Skin Weights Tool	9-20
Bind Pose	9-21
Maya Muscle Deformer	9-21
Muscle Objects	9-21
Types of Muscles	9-22
Muscle Creator	9-22
Set Driven Key	9-24
Long name	9-25
Make attribute	9-25
Data Type Area	9-26
Numeric Attribute Properties Area	9-26
Tutorial 1	9-27
Tutorial 2	9-31
Tutorial 3	9-34
Self-Evaluation Test	9-40
Review Questions	9-41
Exercise 1	9-42
Exercise 2	9-42

New

Chapter 10: Paint Effects

Introduction	10-2
Working with the Visor window	10-2
Creating New Tabs	10-2
Deleting and Renaming Tabs	10-3
Creating Objects	10-3
Working with the Paint Effects Window	10-5
Brush Type	10-5
Global Scale	10-6
Channels	10-6

Brush Profile	10-6
Twist	10-8
Mesh	10-9
Shading	10-10
Illumination	10-11
Shadow Effects	10-12
Tutorial 1	10-15
Tutorial 2	10-23
Self-Evaluation Test	10-30
Review Questions	10-31
Exercise 1	10-32
Exercise 2	10-32
Exercise 3	10-33

Chapter 11: Rendering

Introduction	11-2
Render Layer Editor	11-2
Maya Software Renderer	11-2
Maya Hardware Renderer	11-2
The Maya Hardware Renderer Settings	11-3
Maya Vector Renderer	11-6
The Maya Vector Renderer Settings	11-7
mental ray Renderer	11-15
mental ray Shaders	11-15
Raytrace	11-17
Motion Blur	11-18
Caustics	11-19
Global Illumination	11-20
Final Gather	11-21
Physical Sun and Sky	11-23
Tutorial 1	11-24
Self-Evaluation Test	11-29
Review Questions	11-30
Exercise 1	11-31
Exercise 2	11-32

Chapter 12: Particle System

Introduction	12-2
Creating Particles	12-2
Tool Settings (Particle Tool) Window	12-2
Creating Emitters	12-3
Emitter name	12-4
Basic Emitter Attributes Area	12-4
Distance/Direction Attributes Area	12-5
Basic Emission Speed Attributes Area	12-6

Creating Goals	12-6
Colliding Particles	12-7
Resilience	12-7
Friction	12-7
Offset	12-8
Rendering Particles	12-8
Animating Particles Using Fields	12-8
Air	12-9
Drag	12-9
Gravity	12-10
Newton	12-10
Radial	12-11
Turbulence	12-11
Uniform	12-12
Vortex	12-13
Volume Axis	12-13
Creating Effects	12-14
Creating the Fire Effect	12-14
Creating the Smoke Effect	12-15
Creating the Fireworks Effect	12-16
Creating the Lightning Effect	12-17
Creating the Shatter Effect	12-18
Creating the Curve Flow Effect	12-18
Creating the Surface Flow Effect	12-19
Tutorial 1	12-19
Tutorial 2	12-27
Self-Evaluation Test	12-34
Review Questions	12-35
Exercise 1	12-36
Exercise 2	12-36
Exercise 3	12-37
Exercise 4	12-38

Chapter 13: Introduction to nParticles

Introduction	13-2
Creating nParticles	13-2
nParticle Attributes	13-3
nParticleShape1 Tab	13-3
nucleus1 Tab	13-26
Tutorial 1	13-29
Tutorial 2	13-36
Self-Evaluation Test	13-41
Review Questions	13-41
Exercise 1	13-42
Exercise 2	13-42

Chapter 14: Fluids

Introduction	14-2
Classification of Fluid Effects	14-2
Open Water Fluid Effects	14-2
Dynamic Fluid Effects	14-2
Non-Dynamic Fluid Effects	14-4
Working with Fluid Containers	14-4
Attributes of Fluid Container	14-5
Creating Fluid Containers with Emitter	14-10
Painting the Fluid Effects into Containers	14-11
Fluid Components	14-12
Ocean	14-12
Pond	14-13
Fluid Effects	14-14
Tutorial 1	14-16
Tutorial 2	14-20
Tutorial 3	14-24
Tutorial 4	14-27
Self-Evaluation Test	14-30
Review Questions	14-31
Exercise 1	14-31
Exercise 2	14-32

Chapter 15: nHair

Introduction	15-2
nHair	15-2
Creating nHair	15-2
Simulating nHair	15-4
hairSystemShape1 Tab	15-5
Painting Texture on nHair	15-12
Painting Follicle Attributes	15-13
Styling nHair	15-13
Applying Shadow to the nHair	15-14
Rendering the nHair	15-15
Tutorial 1	15-15
Tutorial 2	15-26
Self-Evaluation Test	15-30
Review Questions	15-31
Exercise 1	15-32

Chapter 16: Maya Fur

Introduction	16-2
Creating Fur in Maya	16-2
Fur Presets	16-11

Fur Shading	16-14
Tutorial 1	16-16
Self-Evaluation Test	16-19
Review Questions	16-20
Exercise 1	16-20

Chapter 17: Bullet Physics

Introduction	17-2
Bullet Objects	17-2
Create Active Rigid Body	17-2
Create Passive Rigid Body	17-9
Create Soft Body	17-9
Create Rigid Body Constraint	17-11
Create Constraint: Soft Body Anchor	17-13
Set Soft Body Vertex Properties	17-14
Paint Soft Body Vertex Properties	17-15
Add Colliders to Skeleton	17-15
Tutorial 1	17-15
Self-Evaluation Test	17-19
Review Questions	17-19
Exercise 1	17-20

Index	I-1
--------------	------------

Preface

Autodesk Maya 2015

Welcome to the world of Autodesk Maya 2015. Autodesk Maya 2015 is a powerful, integrated 3D modeling, animation, visual effects, and rendering software developed by Autodesk Inc. This integrated node based 3D software finds its application in the development of films, games, and design projects. A wide range of 3D visual effects, computer graphics, and character animation tools make it an ideal platform for 3D artists. The intuitive user interface and workflow tools of Maya 2015 have made the job of design visualization specialists a lot easier.

Autodesk Maya 2015: A Comprehensive Guide textbook covers all features of Autodesk Maya 2015 in a simple, lucid, and comprehensive manner. It aims at harnessing the power of Autodesk Maya 2015 for 3D and visual effects artists, and designers. This textbook will help you transform your imagination into reality with ease. Also, it will unleash your creativity, thus helping you create realistic 3D models, animation, and visual effects. It caters to the needs of both the novice and advanced users of Maya 2015 and is ideally suited for learning at your convenience and at your pace.

The salient features of this textbook are as follows:

- **Tutorial Approach**

The author has adopted the tutorial point-of-view and the learn-by-doing approach throughout the textbook. This approach will guide the users through the process of creating the models, adding textures, and animating them in the tutorials.

- **Real-World Models as Projects**

The author has used about 37 real-world modeling and animation projects as tutorials in this textbook. This will enable the readers to relate the tutorials to the real-world models in the animation and visual effects industry. In addition, there are about 34 exercises that are also based on the real-world animation projects.

- **Tips and Notes**

Additional information related to various topics is provided to the users in the form of tips and notes.

- **Learning Objectives**

The first page of every chapter summarizes the topics that will be covered in that chapter.

- **Self-Evaluation Test, Review Questions, and Exercises**

Every chapter ends with Self-Evaluation Test so that the users can assess their knowledge of the chapter. The answers to the Self-Evaluation Test are given at the end of the chapter. Also, the Review Questions and Exercises are given at the end of each chapter and they can be used by the Instructors as test questions and exercises.

- **Heavily Illustrated Text**

The text in this book is heavily illustrated with about 550 diagrams and screen captures.

Symbols Used in the Textbook

Note



The author has provided additional information to the users about the topic being discussed in the form of notes.

Tip



Special information and techniques are provided in the form of tips that helps in increasing the efficiency of the users.



This symbol indicates that the command or tool being discussed is new in Autodesk Maya 2015.



This symbol indicates that the command or tool being discussed has been enhanced in Autodesk Maya 2015.

Formatting Conventions Used in the Textbook

Please refer to the following list for the formatting conventions used in this textbook.

- Names of tools, buttons, options, tabs, attributes, renderers, and toolbars are written in bold face
Example: The **Unfold Selected UVs** tool, the **Apply and Close** button, the **Assign Material to Selection** option, the **Maya Software** renderer, the **Fill Style** attribute, and so on.
- Names of dialog boxes, drop-down lists, areas, edit boxes, check boxes, and radio buttons are written in boldface.
Example: The **Save As** dialog box, the **Look In** drop-down list, the **Display** area, the **Particle name** edit box, the **Color feedback** check box, and the **Center** radio button.
- Values entered in edit boxes are written in boldface.
Example: In the **Particle Size** area, enter the value **0.450** in the **Radius** edit box.
- Names of the files are italicized.
Example: *c13tut2.mb*
- The methods of invoking a tool/option from menubar or the toolbar are given in a shaded box.
Menubar: Edit Mesh > Bridge
UV Texture Editor Toolbar: Select > Select Shortest Edge Path Tool

Naming Conventions Used in the Textbook

Tool

If you click on an item in a panel of the Tool Box and a command is invoked to create/edit an object or perform some action, then that item is termed as **tool**.

For example:

Select Tool, Lasso Tool, Move Tool, Scale Tool, Rotate Tool, Show Manipulator Tool

Flyout

A flyout is a menu that contains options with similar type of functions. Figure 1 shows the flyout displayed on pressing the right mouse button on the **Select Camera** tool.

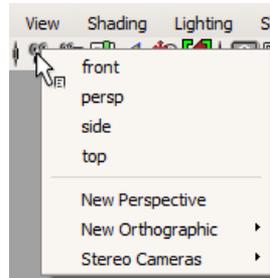


Figure 1 The flyout displayed on clicking the right mouse button on the **Select Camera** tool

Marking Menus

Marking menus are similar to shortcut menus that consist of almost all the tools required to perform an operation on an object. There are three types of marking menus in Maya.

The first type of marking menu is used to create default objects in the viewport. To create a default object, press and hold the SHIFT key and then right-click anywhere in the viewport; a marking menu will be displayed, as shown in Figure 2.

The second type of marking menu is used to switch among various components of an object such as vertices, faces, edges, and so on. To invoke this marking menu, select an object and right-click; a marking menu will be displayed, as shown in Figure 3.

The third type of marking menu is used to modify the components of an object. To invoke this marking menu, select a component, press and hold the SHIFT key, and then right-click on the selected object; a marking menu will be displayed, as shown in Figure 4.

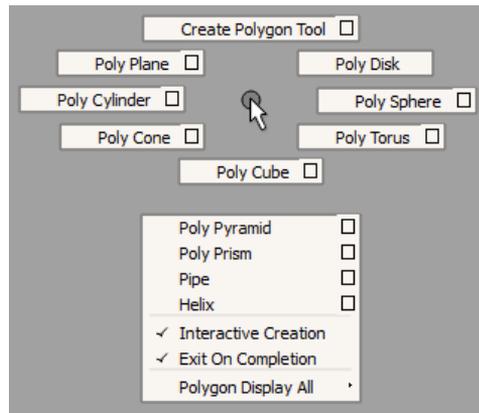


Figure 2 Marking menu displaying options for creating default objects

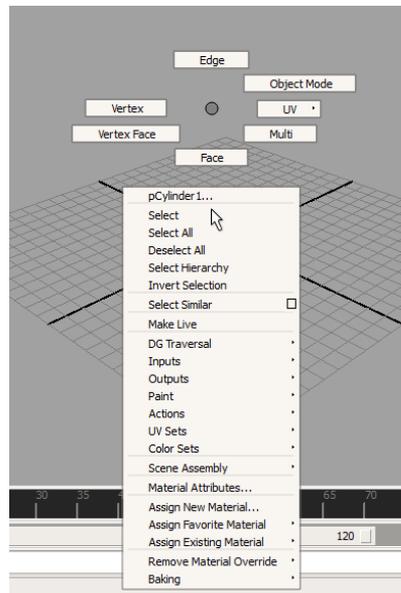


Figure 3 Marking menu displaying components of the selected object

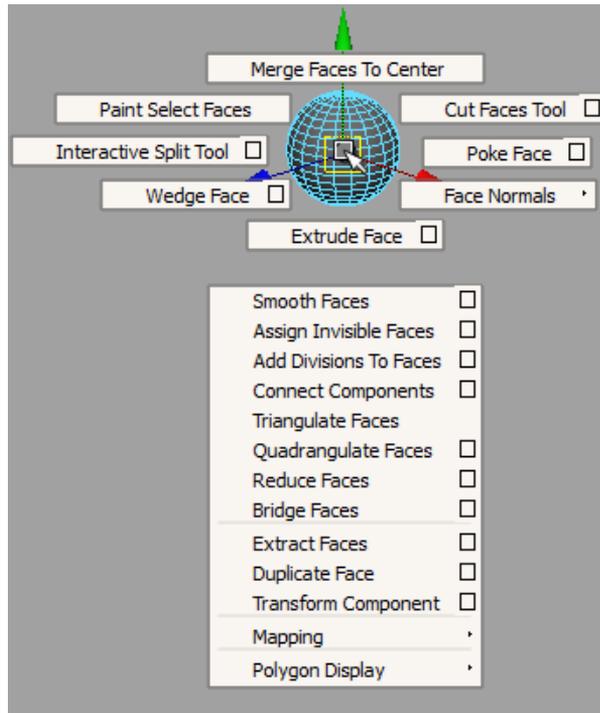


Figure 4 The marking menu displaying various tools for modifying the components of an object

Button

The item in a dialog box that has a 3D shape is termed as **Button**. For example, **Extrude** button, **Apply** button, **Close** button, and so on, refer to Figure 5.

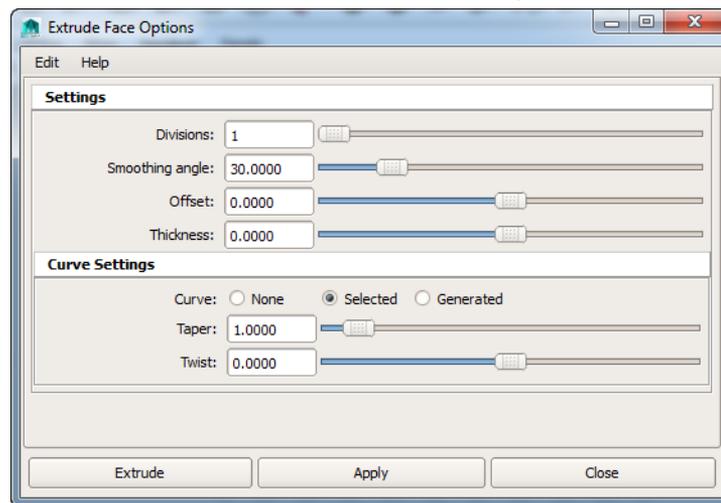


Figure 5 The Extrude, Apply, and Close buttons

Drop-down List

A drop-down list is the one in which a set of options are grouped together. You can set various parameters using these options. You can identify a drop-down list with a down arrow on it. For example, **Material Blend** drop-down list, refer to Figure 6.

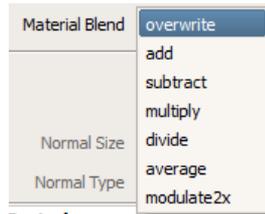


Figure 6 The Menuset drop-down list

Naming Convention Used for the Resources

You can access resource files related to this textbook by visiting www.cadcim.com. The path to access resources is as follows: *Textbooks > Animation and Visual Effects > Maya > Autodesk Maya 2015: A Comprehensive Guide*.

On this page, there are several drop-downs. You can download a resource file by first selecting it from the desired drop-down and then choosing the **Download** button corresponding to it. Table 1 shows the naming conventions in detail.

Table 1 Naming conventions used for the resources in the textbook

Drop-down	Convention
Evaluation Chapters	Evaluation Chapters <i>c01_maya_2015_eval.zip, c02_maya_2015_eval.zip, and so on</i> TOC <i>toc_maya_2015.zip</i>
Part Files	<i>c01_maya_2015_prt.zip, c02_maya_2015_prt.zip, and so on</i>
Tutorial Files	Tutorials <i>c01_maya_2015_tut.zip, c02_maya_2015_tut.zip, and so on</i>
Rendering/Media Files/ Data	Rendered Output - Tutorials <i>c01_maya_2015_rndr.zip, c02_maya_2015_rndr.zip, and so on</i> PDF Containing Color Images used in Textbook <i>maya_2015_color_images.zip</i>
PowerPoint Presentations (Faculty only)	<i>c01_maya_2015_ppt.zip, c02_maya_2015_ppt.zip, and so on</i>
IG (Faculty Only)	<i>ig_maya_2015.zip</i>

Free Companion Website

It has been our constant endeavor to provide you the best textbooks and services at affordable price. In this endeavor, we have come out with a free companion website that will facilitate

the process of teaching and learning of Autodesk Maya 2015. If you purchase this textbook, you will get access to the companion website.

The following resources are available for faculty and students in this website:

Faculty Resources

- **Technical Support**

You can get online technical support by contacting *techsupport@cadcim.com*.

- **Instructor Guide**

Solutions to all review questions and exercises in the textbook are provided to help the faculty members test the skills of the students.

- **PowerPoint Presentations**

The contents of the book are arranged in powerpoint slides that can be used by the faculty for their lectures.

- **Maya Files**

The Maya files used in illustration, examples, and exercises are available for free download.

- **Rendered Images**

If you do an exercise or tutorial, you can compare your rendered output with the one provided in the CADCIM website.

- **Additional Resources**

You can access additional learning resources by visiting *http://mayaexperts.blogspot.com*.

- **Colored Images**

You can download the PDF file containing color images of the screenshots used in this textbook from CADCIM website.

Student Resources

- **Technical Support**

You can get online technical support by contacting *techsupport@cadcim.com*.

- **Maya Files**

The Maya files used in illustrations and examples are available for free download.

- **Rendered Images**

If you do an exercise or tutorial, you can compare your rendered output with the one provided in the CADCIM website.

- **Additional Resources**

You can access additional learning resources by visiting *http://mayaexperts.blogspot.com*.

- **Colored Images**

You can download the PDF file containing color images of the screenshots used in this textbook from CADCIM website.

Stay Connected

You can now stay connected with us through Facebook and Twitter to get the latest information about our textbooks, videos, and teaching/learning resources. To stay informed of such updates, follow us on Facebook (www.facebook.com/cadcim) and Twitter (@cadcimtech). You can also subscribe to our YouTube channel (www.youtube.com/cadcimtech) to get the information about our latest video tutorials.

If you face any problem in accessing these files, please contact the publisher at sales@cadcim.com or the author at stickoo@purduecal.edu or tickoo525@gmail.com.