

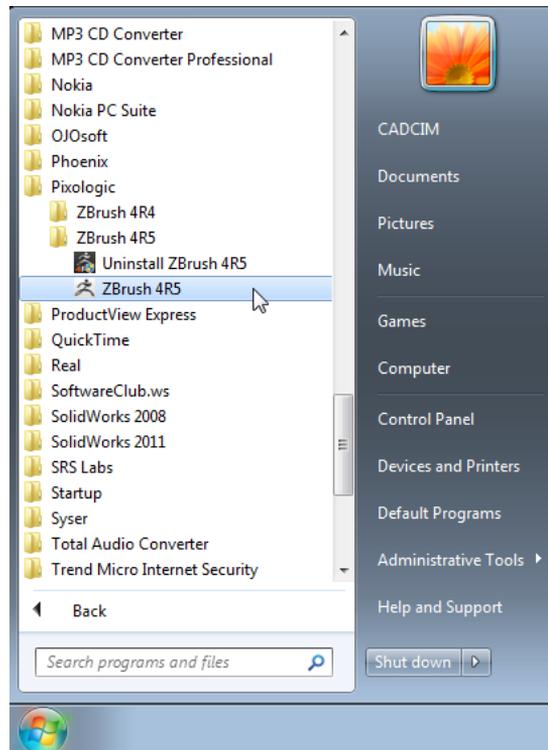


## INTRODUCTION TO PIXOLOGIC ZBrush 4R5

Welcome to the world of ZBrush 4R5, a modeling and sculpting software used to create realistic 3D models. ZBrush was developed by Pixologic Inc. in the year 1999. It is a unique blend of 2D, 2.5D, and 3D features. ZBrush consists of different tools that enable you to create or import 3D models, and then add high level details to them. This software enables you to sculpt on high resolution models that consist of millions of polygons. ZBrush is used by all major animation studios worldwide. It has been used in the movies such as 300, Pirates of the Caribbean, Avatar, Hulk, and so on. ZBrush 4R5 is compatible with different 3D software applications such as Maya, 3ds Max, CINEMA 4D, and Modo. Although ZBrush is a vast software to deal with, yet all major tools available in ZBrush 4R5 are discussed in this textbook. In this chapter, you will learn about the various components of the ZBrush interface.

## STARTING ZBrush 4R5

To start ZBrush 4R5, choose the **Start** button on the taskbar; the **Start** menu will be displayed. Next, choose **All Programs > Pixologic > ZBrush 4R5 > ZBrush 4R5** from the **Start** menu, as shown in Figure 1-1; the default ZBrush interface will be displayed with its various components, as shown in Figure 1-2.



*Figure 1-1 Starting Pixologic ZBrush 4R5 from the Start menu*

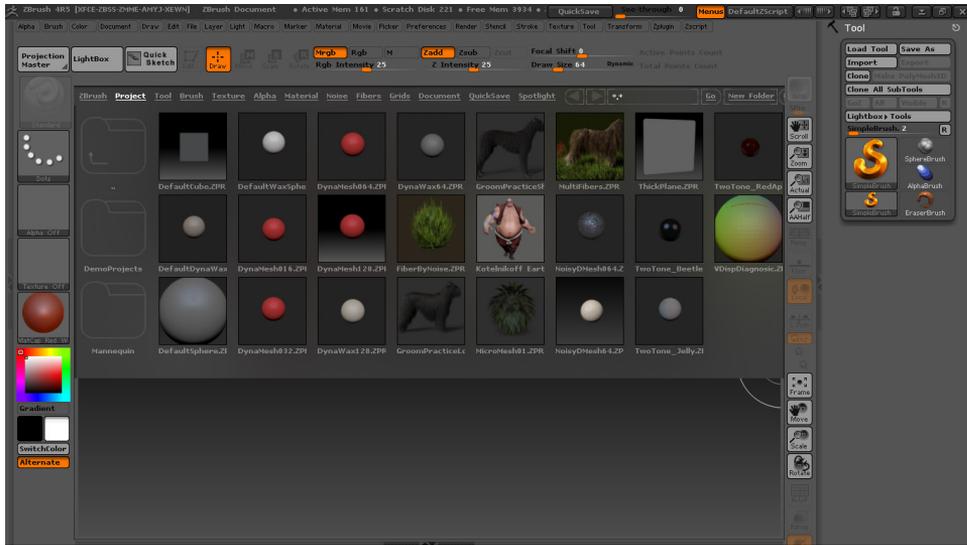


Figure 1-2 The default ZBrush 4R5 interface

Alternatively, you can start ZBrush 4R5 by double-clicking on its shortcut icon displayed on the desktop. This icon is automatically created on installing ZBrush 4R5 on your computer.

## EXPLORING THE ZBrush 4R5 INTERFACE

ZBrush interface consists of components such as title bar, palettes, shelves, trays, and canvas. When you start ZBrush 4R5 for the first time, the default interface will display various components of ZBrush 4R5, as shown in Figure 1-3. These components are discussed next.

### Title Bar

The title bar is located on the top of the ZBrush screen. On the left side of the title bar, the version number of ZBrush, hardware ID, and memory usage information is displayed, refer to Figure 1-4. Besides this, the **QuickSave** button and the **See-through** slider are also present in the title bar. The **QuickSave** button is used to save the different stages of a file sequentially. These files can be accessed from the **QuickSave** tab of the LightBox browser. The **See-through** slider is used to increase or decrease the transparency in the ZBrush interface so that you can view the background screen. This slider makes it convenient for you to view the reference images in the background without importing a reference image or toggling back and forth between the image and interface. For example, if you are following the steps of a tutorial of ZBrush, then you can view these steps in the background and follow the instructions with ease.

On the right side of the title bar, various buttons are displayed, as shown in Figure 1-5. The **Menus** button is used to toggle the display of the palettes. The **DefaultZScript** button is used to run the default scripting language present in ZBrush if it has been edited. The **Load Previous User Interface Colors**, **Load Next User Interface Colors**, **Load Previous User Interface Layout**, and **Load Next User Interface Layout** buttons are used to change the color and the layout of the screen, respectively. These presets enable you to customize the ZBrush screen.

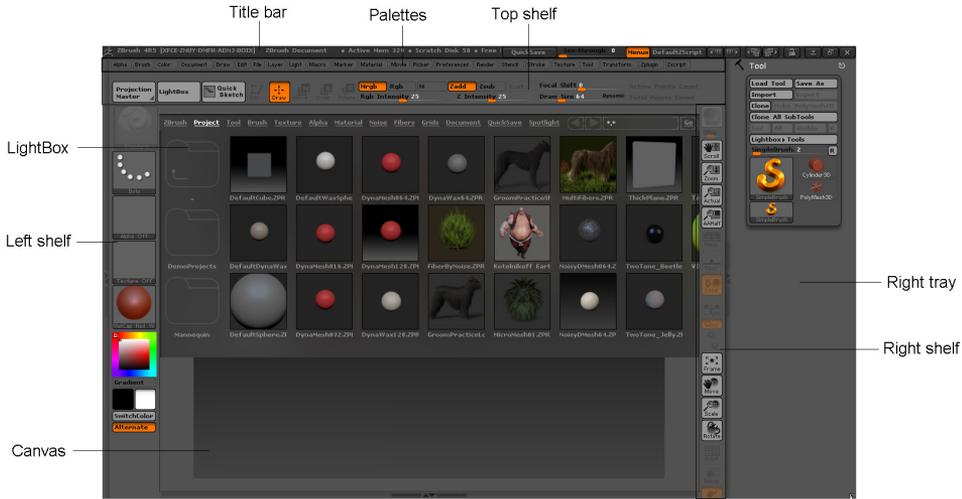


Figure 1-3 Various components of the ZBrush 4R5 interface displayed



Figure 1-4 Partial view of the left side of the title bar

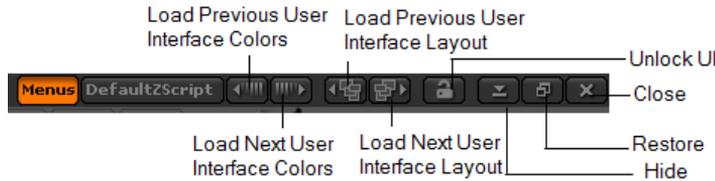


Figure 1-5 Partial view of the right side of the title bar

## Canvas

The canvas is the drawing area where you can sculpt or create 3D models. It covers most of the area of the ZBrush interface, refer to Figure 1-3. The 3D models created can be saved as 2D illustrations. A 2D illustration is called ZBrush document and is saved in the *ZBR* format. The 3D models are called ZBrush tools and are saved in the *ZTL* format.

## Palettes

Palettes are located below the title bar. They are organized alphabetically, starting from the **Alpha** palette and ending at the **Zscript** palette, as shown in Figure 1-6. These palettes are discussed next.



*Figure 1-6 The various types of palettes*

## Alpha

The **Alpha** palette consists of various grey scale images known as alphas. Alphas are available in different patterns. They determine the shape of the brush used in painting and sculpting. This palette also consists of different subpalettes that are used to modify the alpha images, as required.

## Brush

The **Brush** palette consists of different types of 3D sculpting brushes. Besides this, the **Brush** palette consists of different subpalettes that are used to modify different brush settings. The **Standard** brush is the default sculpting brush in ZBrush.



**Tip:** You can change the size of the brush by using the [ and ] keys. The [ key is used to reduce the size of the brush tip while the ] key is used to increase the size of the brush tip.

## Color

The **Color** palette consists of different buttons and sliders that are used to select solid and gradient colors for filling the canvas or an object.

## Document

The options in the **Document** palette are used to open, import, export, resize, and save a ZBrush document. A ZBrush document is a 2D illustration and is saved in the *ZBR* format. If you save a 3D object using the **Document** palette, it will convert into a 2D illustration and cannot be edited further. You can also import a Photoshop file using the **Document** palette.

## Draw

The **Draw** palette consists of different options that can be used to modify the settings of the 3D as well as 2D sculpting brushes. These options enable you to change the size, focal shift, and intensity of the brush stroke. In addition to this, these options help you to determine whether a sculpting brush will raise the surface of an object or push it in.

## Edit

The **Edit** palette consists of options that enable you to undo or redo the modifications made in ZBrush. Alternatively, you can press CTRL+Z to undo an operation and CTRL+SHIFT+Z to redo an operation.

## File

The options in the **File** palette are used to open and save a ZBrush project. A ZBrush project is a combination of different files. If you save a 3D model using the **Save As** button in the **File** palette, its 2D illustration, Zscript, materials, alphas, and different textures will be saved along with the 3D model. You can also save multiple 3D models in a ZBrush project. The models are saved in the *ZPR* format.



### Note

*A ZBrush document is a still 2D image that can be used as an illustration. Therefore, if you save a 3D model as a document, you will not be able to edit it further in the 3D space. To avoid this, you should always save your 3D work using the options available in the **Tool** palette. In ZBrush, a 3D model is referred to as ZTool. A ZBrush project contains a ZTool as well as its 2D illustration. A ZBrush project can save multiple ZTools simultaneously. However, it is not recommended to save multiple ZTools in a single ZBrush project, as it results in a bigger file size which takes more system resources and slows down the system.*

## Layer

The **Layer** palette enables you to work in 16 different layers. Each layer represents a separate canvas. You can merge different layers into a single ZBrush document.

## Light

The **Light** palette consists of different types of lights that can be used to light up a scene. Besides this, the **Light** palette also contains different subpalettes that are used to modify light settings in a scene.

## Macro

The different options in the **Macro** palette are used to record the series of actions performed in ZBrush. Instead of repeating the same actions again and again, you can save different actions in a macro. This recorded macro can be loaded whenever required.

## Marker

The **Marker** palette stores information about the orientation, colors, brush strokes, and position of the ZTools modeled by you. You can redraw a model by using the properties stored in the **Marker** palette.

## Material

The **Material** palette consists of a library of different materials that can be applied to an object giving it an appearance of different materials such as glass, silver, water, gold, chrome, and so on. This palette also enables you to modify the settings in the materials as required.

## Movie

The options in the **Movie** palette are used to record small movies from the canvas that can be used for illustrating your workflow to other users.

## Picker

The different options in the **Picker** palette are used to pick information such as color, orientation, depth, and so on from the canvas.

## Preferences

The different options in the **Preferences** palette are used to customize the ZBrush interface and its behavior as per your requirement. It consists of the options that are used to restore the default interface of ZBrush after making any changes in the interface, load and save hot keys, change the color and layout of the ZBrush interface, and to record the ZScript automatically.

## Render

The **Render** palette consists of different options that are used to render a scene. When you render a scene, the rendered output of the scene will be displayed in the canvas instead of a separate window.

## Stencil

The different options in the **Stencil** palette are used to create patterns with different shapes. A stencil is used to mark out the areas where strokes will be applied. An alpha can be converted into a stencil by choosing the **Make St** button in the **Transfer** subpalette of the **Alpha** palette, as shown in Figure 1-7.

## Stroke

The **Stroke** palette consists of options that determine the strength and behavior of brush strokes on the canvas.

## Texture

The options in the **Texture** palette help in applying textures to an object. Textures are the 2D images that can be created in ZBrush or can be imported from other sources.

## Tool

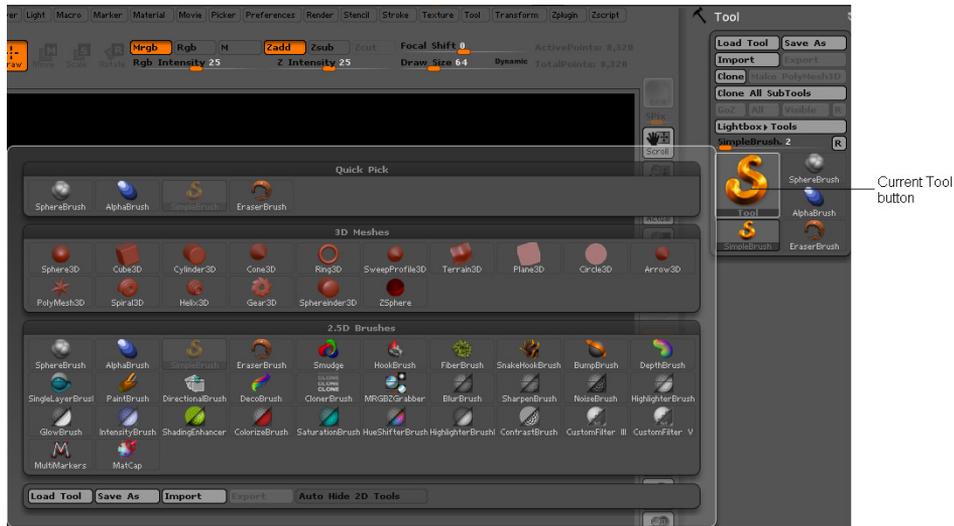
The **Tool** palette is one of the most important palette in ZBrush. It consists of various buttons that are used to open, save, import, and export ZTools. In addition to this, it contains a library of inbuilt 3D primitives, ZTools, and 2.5D brushes. When you choose the Current Tool button from the **Tool** palette, a flyout will be displayed, as shown in Figure 1-8.

This flyout is divided into three areas namely, **Quick Pick**, **3D Meshes** and **2.5D Brushes**. The **Quick Pick** area stores a library of 3D primitives and 2.5D brushes that were used recently. The **3D Meshes** area contains a library of default 3D models in ZBrush. It also contains primitive 3D objects such as sphere, cube, rectangle, cone, and so on. You can select any one of these 3D primitives and draw it in the canvas by pressing and holding the left mouse button and then dragging the cursor in the canvas area.



*Figure 1-7 The Make St button in the Transfer subpalette*

The third area of the **Tool** palette is **2.5D Brushes**. It consists of a library of brushes that are used to add detail to a 2D illustration. The options in the **Tool** palette will be discussed in depth in the later chapters.



*Figure 1-8 The flyout displayed on choosing the Current Tool button from the **Tool** palette*



### Note

If you use a 2.5D brush on a 3D object, the object will be converted into a 2.5D illustration.

## Transform

The **Transform** palette consists of different buttons and sliders that are used in modeling, positioning, scaling, rotating, and editing 3D objects.

## Zplugin

The options in the **Zplugin** palette are used to access different ZBrush plug-ins that are installed on the computer.

## Zscript

ZBrush contains an inbuilt scripting language known as Zscript. ZScripts can be loaded by using the options in the **Zscript** palette.

## Trays

Trays are the areas on the ZBrush interface in which you can store different palettes and buttons. The trays are located on the left, right, and bottom of the canvas. By default, the **Tool** palette is docked in the right tray. The left and right trays can be opened or closed by clicking on the arrows adjacent to the left and right shelves. The bottom tray can be opened and closed by double-clicking on the arrow keys below the canvas.

## Shelves

Shelves are the areas that contain the most commonly used buttons and controls. The shelves can be classified into top, left, and right shelves. These shelves are discussed next.

### Top Shelf

The top shelf is located below the palettes. It consists of different buttons and sliders, as shown in Figure 1-9. The buttons and sliders in the top shelf are discussed next.



Figure 1-9 The top shelf

### Projection Master

The **Projection Master** is a unique feature of ZBrush. It is mainly used in texturing, deforming, and coloring the 3D models. When the **Projection Master** button is chosen from the top shelf, the brush switches to the painting mode and the 3D object is converted into a 2.5D illustration temporarily. Alternatively, this button can be chosen by pressing the G key. The **Projection Master** will be discussed in detail in later chapters.

### LightBox

On choosing the **LightBox** button, the **LightBox** browser that contains a library of ZBrush documents, ZTools, ZBrush projects, brushes, alphas, textures, materials, and so on will be displayed, refer to Figure 1-10. All ZBrush files can be easily accessed by using the **LightBox** browser, without navigating through different folders on your system. The browser also contains a library of default 3D models which can be modified, as required.

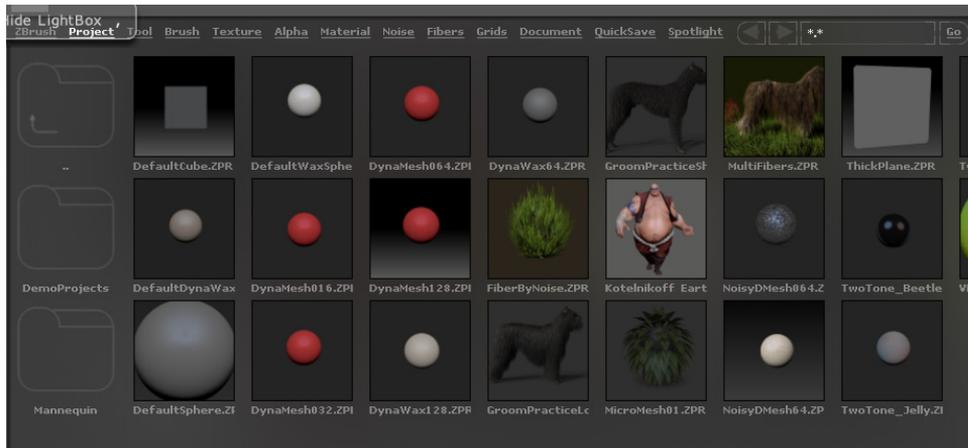
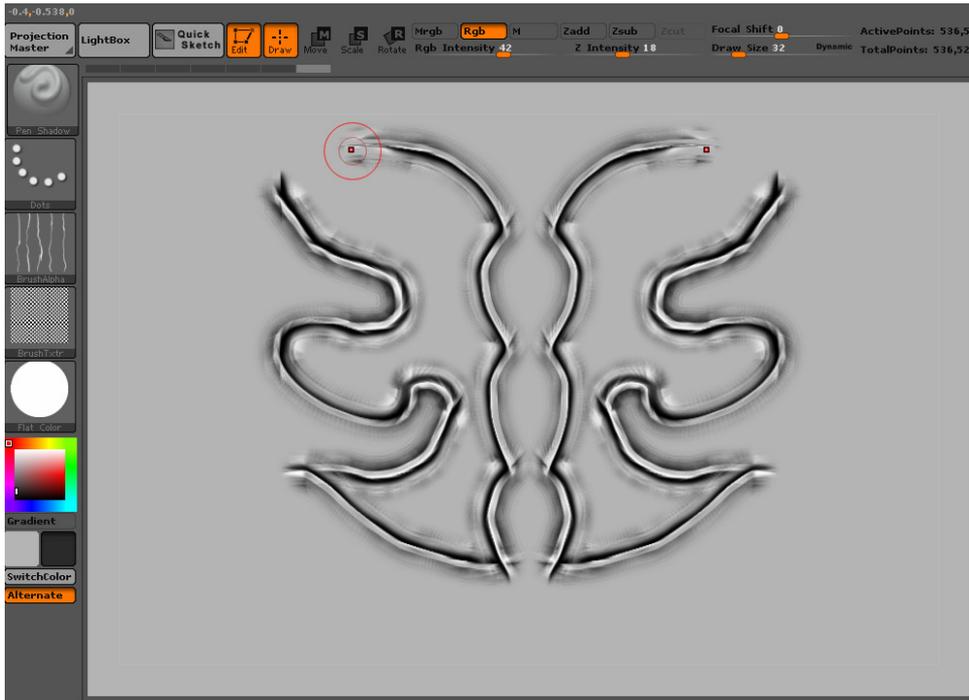


Figure 1-10 The LightBox browser

### QuickSketch

The QuickSketch feature allows you to draw 2D sketches in the same way as you draw on a piece of paper. With the help of this feature, you can create 2D sketches inside ZBrush. In order to activate this feature, choose the **QuickSketch** button from the top shelf. On

doing so, a gray canvas along with a brush is displayed. In the canvas, the symmetry in X-axis will be activated by default, which allows you to draw symmetrical sketches, refer to Figure 1-11. If you want to turn off the symmetry, press X. To quit the QuickSketch mode, choose the **Init ZBrush** button from the **Preferences** palette; the **INITIALIZE ZBRUSH?** message box will be displayed. Choose the **Yes** button from this dialog box; the default ZBrush interface will be restored.



*Figure 1-11 A symmetrical sketch created in the QuickSketch mode*

### **Edit**

The **Edit** button is used to enable the sculpting brushes so that you can add details to a 3D model. Whenever a 3D primitive is created in the canvas, you need to choose the **Edit** button from the top shelf. If this button is not chosen, ZBrush will remain in paint mode and dragging the cursor on the canvas will simply place copies of 3D objects in it, refer to Figure 1-12. To make changes in a 3D model, you need to make sure that the **Edit** button is chosen.

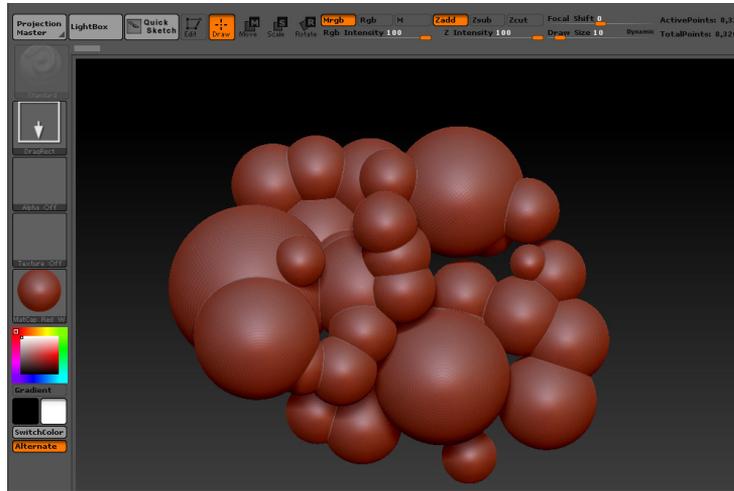


Figure 1-12 Copies of the 3D objects placed in the canvas

### Draw

The **Draw** button allows you to draw a 3D object by first choosing a 3D model from the **Tool** palette and then dragging the cursor in the canvas. It allows you to sculpt 3D objects when the **Edit** button is chosen. However, if the **Edit** button is not chosen, dragging the cursor on the canvas will simply place copies of 3D objects in it.

### Move, Scale, and Rotate

The **Move**, **Scale**, and **Rotate** buttons are used to position, scale, or rotate the 3D object in the canvas. The **Move**, **Scale**, and **Rotate** buttons can also be invoked by pressing the W, E, and R, keys, respectively. When any of these buttons is chosen, and the **Edit** button is not chosen, then a gyro parallel to the canvas will appear, as shown in Figure 1-13. If you want to move the object around the canvas, choose the **Move** button and then drag the cursor on the area inside the gyro.

For scaling the object uniformly, choose the **Scale** button, and then drag the cursor on the canvas. For scaling the object vertically, drag the cursor on the pink arc on the gyro vertically. For scaling the object horizontally, drag the cursor on the cyan arc horizontally, as shown in Figure 1-14. For rotating the object freely by using the **Rotate** button, drag the cursor on the area within the gyro but not on the rings. On doing so, the orientation of gyro will change, as shown in Figure 1-15.

If you choose the **Move** button when the **Edit** button is chosen, only the vertices of the object will move, not the entire object.

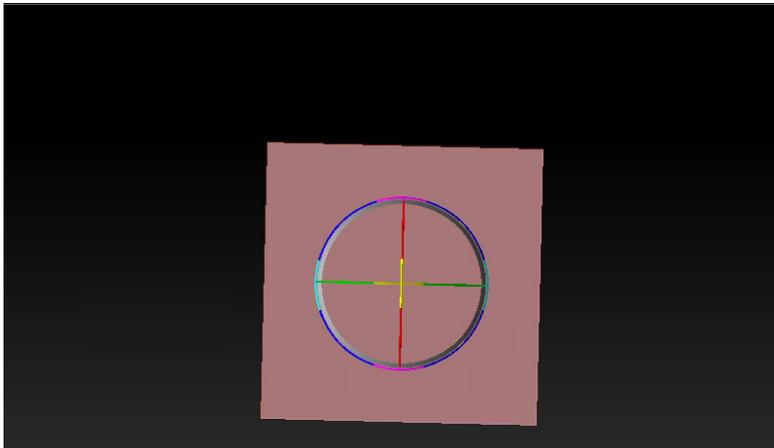


Figure 1-13 Gyro displayed on choosing the **Move** button

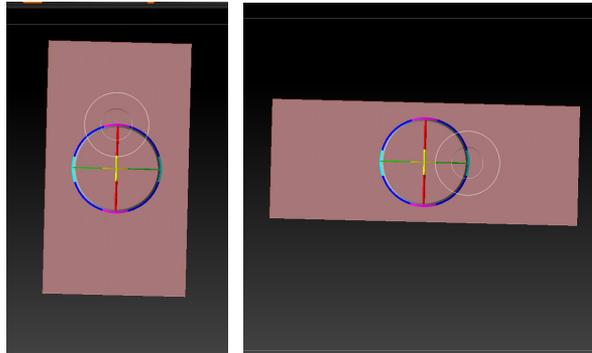


Figure 1-14 The vertical and horizontal scaling using gyro

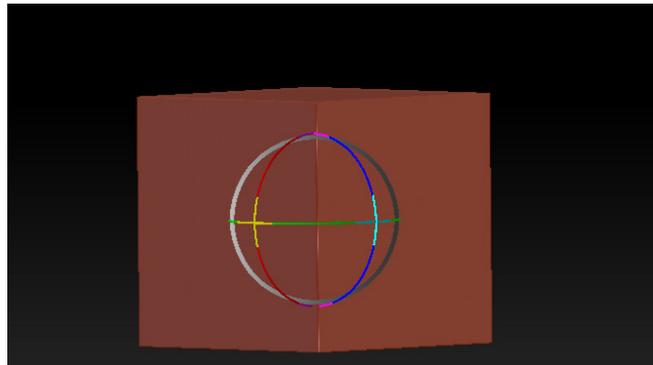


Figure 1-15 Rotating the object using gyro



**Tip:** You can move an object on the canvas in the edit mode by dragging the cursor on the canvas with the **ALT** key pressed. To scale an object, press and hold the left mouse button with the **ALT** key pressed, and then release the **ALT** key. To rotate an object, press and hold the left mouse button and drag the cursor.

### Mrgb, Rgb, and M

These buttons are used to fill colors and apply materials to an object. The **Mrgb** button is used to fill an object with both material and color. The **Rgb** button is used to fill an object only with color. The **M** button is used to fill an object with the material only.

### Rgb Intensity and Z Intensity

The **Rgb Intensity** slider is used to control the intensity of the color applied to an object. Higher the value specified for the slider, more will be the intensity of color.

The **Z Intensity** slider is used to control the depth of the brush stroke. Higher the value specified for slider, more will be the depth of stroke.

### Zadd, Zsub, and Zcut

The **Zadd** and **Zsub** buttons are used to determine whether a sculpting brush will raise the surface of an object or push it in. If you choose the **Zadd** button, the surface of the object will be elevated and if you choose the **Zsub** button, the surface will be pushed in. The **Zcut** button is used to create holes in a surface. It is activated when the **Edit** button is not chosen.

The **ALT** key toggles the alternate mode for **Zadd** and **Zsub** buttons. If you sculpt a surface by choosing the **Zadd** button and holding the **ALT** key, it will be pushed in instead of being raised. Similarly, holding the **ALT** key with the **Zsub** button chosen will raise the surface of an object. The **Z Intensity** slider controls how much each stroke of the brush raises, lowers, or cuts into the surface of the 3D object.

### Focal Shift and Draw Size

The **Focal Shift** slider is used to change the softness or fall off of the edge of the brush. The **Draw Size** slider is used to change the size of the brush. Higher the value of this slider, more will be the size of the brush. The sculpting brush in ZBrush will be displayed as two concentric circles. The diameter of the outer circle determines the size of the brush and the diameter of the inner circle determines the focal shift.

### Left Shelf

The left shelf consists of different buttons that contain libraries for various brushes, strokes, alphas, textures, materials, and colors, as shown in Figure 1-16. All these libraries can also be accessed through the palettes. However, the left shelf enables easy access

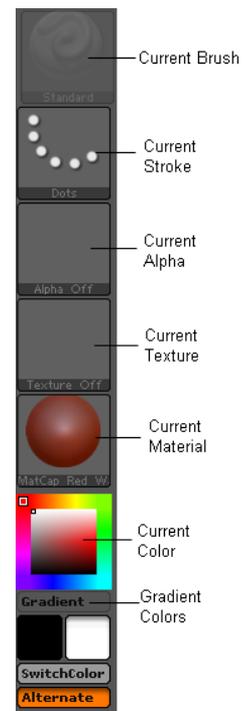


Figure 1-16 The left shelf

to these libraries. The brushes, strokes, alphas, textures, and materials will be discussed in later chapters. The different buttons in the left shelf are discussed next.

### Current Brush

The Current Brush button is used to invoke a flyout consisting of different types of sculpting brushes. Whenever you select a brush from the flyout, its icon will be displayed on the Current Brush button.

By default, the **Standard** brush icon is displayed on this button. After drawing a 3D object in the canvas, you need to choose the **Edit** button from the top shelf to activate this button. It will also be activated by choosing the **QuickSketch** button. On choosing the Current Brush button, a flyout will be displayed, as shown in Figure 1-17. This flyout consists of the **Quick Pick** and **3D Sculpting Brushes** areas. The **Quick Pick** area consists of the recently chosen brushes and the **3D Sculpting Brushes** area consists of all the brushes in ZBrush.



Figure 1-17 The flyout displayed on choosing the Current Brush button

### Current Stroke

The Current Stroke button is used to invoke a flyout consisting of different types of strokes, as shown in Figure 1-18. A stroke is a pattern which determines how the painting and sculpting will be done.

If you select any stroke from the flyout, its icon will be displayed on the Current Stroke button. By default, the **Dots** stroke icon is displayed on this button.

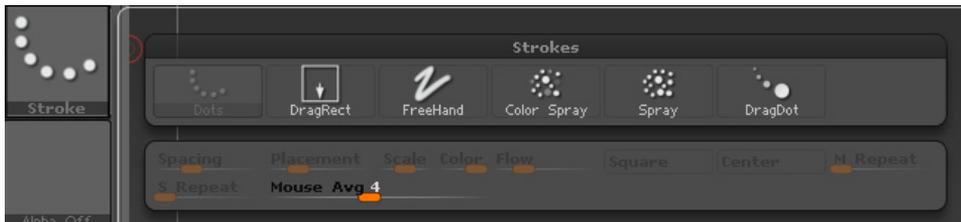


Figure 1-18 The flyout displayed on choosing the Current Stroke button

### Current Alpha

The Current Alpha button is used to invoke a flyout consisting of different types of alpha images, as shown in Figure 1-19. The different grey scale images in this flyout are known as alphas.

Alphas come in different shapes and determine the shape of brush that will be used in painting and sculpting.



*Figure 1-19 The flyout displayed on choosing the Current Alpha button*

### Current Texture

The Current Texture button is used to invoke a flyout consisting of different types of texture images, as shown in Figure 1-20. Textures are the 2D images that can be created in ZBrush or can be imported from other sources.



*Figure 1-20 The flyout displayed on choosing the Current Texture button*

## Current Material

The Current Material button is used to invoke a flyout consisting of different types of materials, as shown in Figure 1-21. There are various types of materials such as glass, silver, water, and gold. These materials can be applied to an object giving it the appearance of the specified material.



Figure 1-21 A flyout displayed on choosing the Current Material button

## Current Color

The **Current Color** swatch is located just below the Current Material button. It is used to pick a color from the canvas and fill a 3D object with the selected color. On hovering the mouse on the color picker, the RGB value of color beneath the cursor will be displayed, as shown in Figure 1-22.



Figure 1-22 The RGB value of a color displayed

## Gradient Colors

The **Gradient Colors** button is used to produce a gradient effect with the help of the **Secondary Color** and **Main Color** swatches available below it. The gradient will be produced from the main color into the secondary color. The color swatch below the **Gradient Colors** button represents the secondary and the main color used for gradient filling. The **SwitchColor** button located below this button is used to interchange the primary and secondary colors.

## Right Shelf

The right shelf consists of different buttons and sliders that are used in rendering and navigating through canvas, refer to Figure 1-23. The buttons and sliders in the right shelf are explained next.

### BPR

**BPR** stands for Best Preview Render. This button is used to produce high quality realistic renders on the canvas. It displays details including shadows, depth, transparency, and so on in the rendered scene. This button will render an object only when the **Edit** button is chosen.

### SPix

**SPix** stands for Sub Pixel. This slider controls the quality of antialiasing in the render. Antialiasing is a technique used to smoothen the uneven projections on the edges of an image, thereby producing high quality images. These uneven projections occur because the screen does not have the required resolution to represent a smooth line. The value of the **SPix** slider varies between 0 and 7. If you set the value of the **SPix** slider to 7, the highest quality of antialiasing will be achieved.

### Scroll

The **Scroll** button is used to move the canvas. Press and hold the left mouse button on the **Scroll** button and then drag the cursor to scroll the canvas.

### Zoom

The **Zoom** button is used to zoom in and zoom out of the canvas. To zoom in and zoom out of the canvas, place the cursor on this button and drag the cursor upward or downward. Alternatively, you can zoom in and zoom out of the canvas by using + (plus) and - (minus) keys.

### Actual

The **Actual** button is used to display a document at its 100% size. If you have zoomed in or zoomed out of the canvas, you can return to the actual canvas size by choosing this button. Alternatively, press the 0 key to return to the actual size of the canvas.

### AAHalf

The **AAHalf** button is used to reduce the display of canvas to half of its original size. Alternatively, press CTRL+0 to reduce the canvas to half of its original size.

### Persp

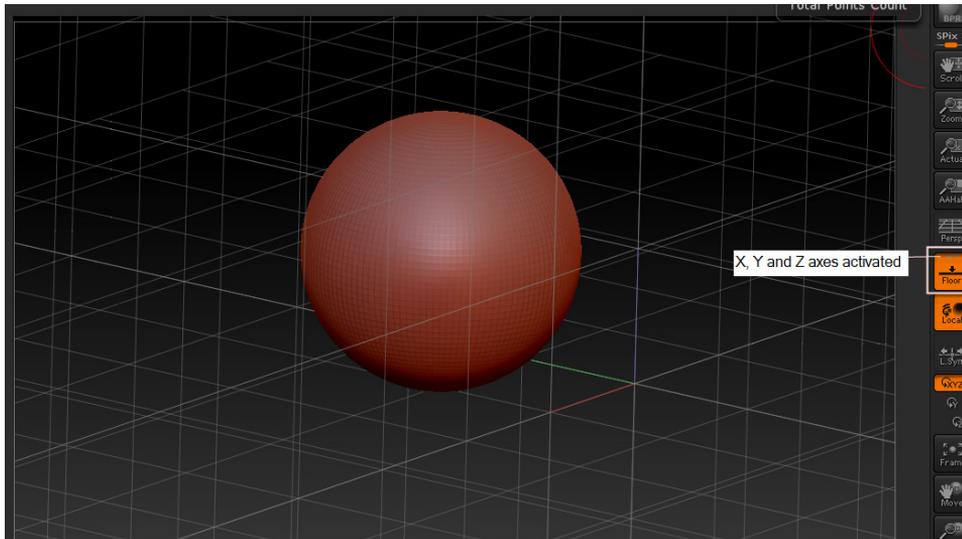
The **Persp** button is used to enable the perspective distortion in the canvas. This button becomes active when an object is created in the canvas.



Figure 1-23 The right shelf

## Floor

The **Floor** button is used to display the floor grid in all the axes. This button becomes active when an object is created in the canvas. By default, the Y-axis is selected. If you select all the axes in the floor grid, the floor grid in all the selected axes will be activated, as shown in Figure 1-24.



*Figure 1-24 Floor grid activated in all the axes*

## Local

The **Local** button is used to transform the last edited area of a 3D object into the center point of rotation or scaling.

## L. Sym

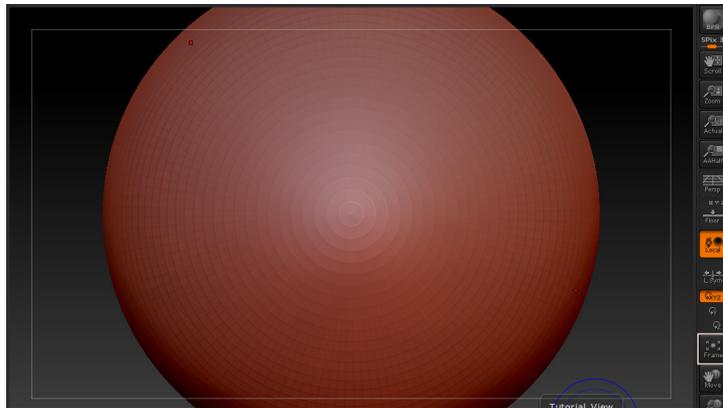
The **L. Sym** button is used with the subtools. In ZBrush, subtools are different 3D objects which combine to form a single 3D object. For instance, if you have modeled a character and its clothes separately, both of these will be referred to as subtools. The **L. Sym** button activates the mirroring of symmetry across the subtool axes.

## Rotation Buttons

The three rotation buttons are located just below the **L. Sym** button. These buttons control the rotation of an object along different axes. The **XYZ** button rotates the object in all the axes. The **Y** and **Z** buttons rotate an object in Y and Z axes, respectively. For rotating an object along any of the axes, press and hold the left mouse button and drag the cursor over the canvas.

## Frame

The **Frame** button is used to fit an object into the canvas, as shown in Figure 1-25. To choose this button, the **Edit** button should be already chosen. Alternatively, press F to fit an object into the canvas.



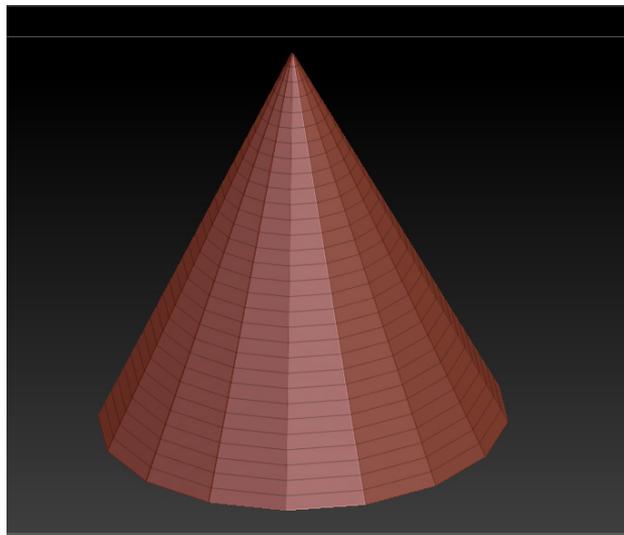
*Figure 1-25 The object fitted into the canvas*

### **Move, Scale, and Rotate**

The **Move**, **Scale**, and **Rotate** buttons are used to move, scale, and rotate a 3D object in the canvas, respectively. These buttons are used when a 3D object is in the **Edit** mode. These operations can be carried out by placing the cursor on these buttons and then dragging it.

### **PolyF**

The **PolyF** button is used to display the polygon edges of a 3D object, as shown in Figure 1-26.



*Figure 1-26 The polygon edges of a 3D object*

### Transp

The **Transp** button activates the transparency of the different subtools that are not selected in the list of subtools present in the **SubTool** subpalette, as shown in Figure 1-27. On choosing this button, different subtools such as clothes and accessories used in the 3D model become transparent, as they are not selected in the **SubTools** subpalette.

In Figure 1-27, the default 3D model present in the **LightBox** browser has been used. To load this model on the canvas, choose the **Tool** tab in the **LightBox** browser. Next, double-click on the **DemoSoldier.ZTL** file in the **LightBox** browser. Press and hold the left mouse button and drag the cursor in the canvas; the model will be created in the canvas. After loading the model, choose the **Edit** button from the top shelf to switch to the edit mode. Next, choose the **Transp** button.



*Figure 1-27 Transparency created in the subtools*

### Ghost

The **Ghost** button is used in combination with the **Transp** button. When you choose the **Transp** button, the **Ghost** button gets automatically chosen. However, if this button is not activated, the subtools will remain transparent but their color and texture will be displayed, as shown in Figure 1-28.

### Solo

The **Solo** button is used to hide all the deselected subtools used in the model. Only the selected subtool will be displayed, as shown in Figure 1-29. In this figure, all the clothes and accessories of the 3D model have disappeared, as only the 3D model is selected. The disappeared subtools can be restored back by choosing this button again.

### Xpose

The **Xpose** button is used to separate the subtools from the base model, as shown in Figure 1-30. On choosing this button, the subtools start moving and are scattered from the base model.



*Figure 1-28* Color in transparent subtools displayed



*Figure 1-29* The selected subtool displayed



*Figure 1-30* The subtools separated from the model

## OPENING AND SAVING A ZTOOL AND ZBRUSH DOCUMENT

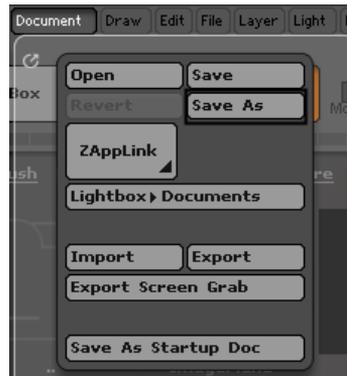
In ZBrush, a 3D model is known as ZTool. In order to save the ZTool, you need to save your 3D model using the **Tool** palette. The model will be saved in the *ZTL* format by choosing the **Save As** button in the **Tool** palette, refer to Figure 1-31. The saved ZTool can be opened later by using the **Load Tool** button in the **Tool** palette.

The ZBrush document only contains the 2D illustration and not the full 3D model. Therefore, if you save a 3D model as a document, only the 2D version of its current view will be saved. This document cannot be edited further in 3D space and can only be used as an illustration. If you want to save a 3D object as an illustration, you must save your 3D model using the **Document** palette by choosing the **Save As** button, refer to Figure 1-32. It will be saved in the *ZBR* format. Once saved, the ZBrush document can be opened by using the **Open** button from the **Document** palette.

You can also save all your ZTools as a project using the **File** palette. To save a project, choose the **File** palette to expand it. In this palette, choose the **Save As** button, refer to Figure 1-33; the **Save Project** dialog box will be displayed, refer to Figure 1-34. In this dialog box, enter the desired name in the **File Name** text box and then choose the **Save** button.



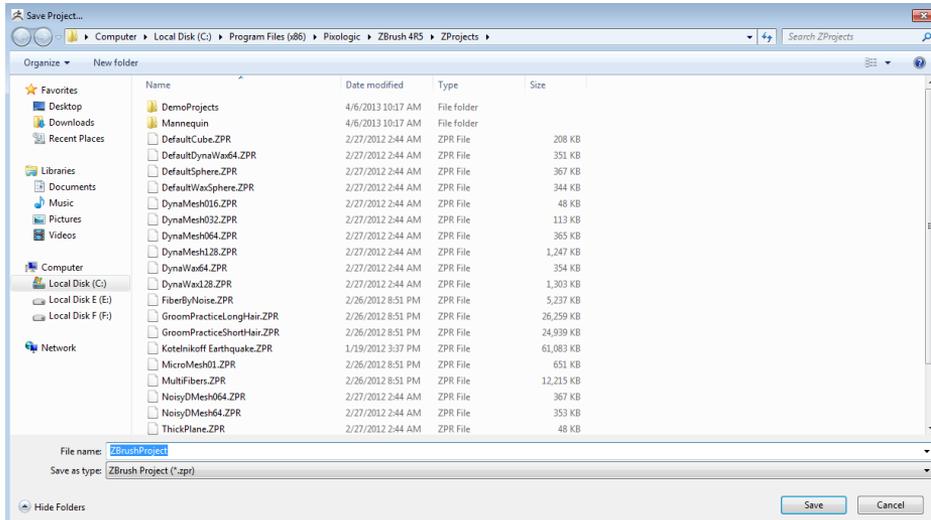
*Figure 1-31 The Save As button in the Tool palette*



*Figure 1-32 The Save As button in the Document palette*



*Figure 1-33 The Save As button in the File palette*



*Figure 1-34 The Save Project dialog box*



**Tip:** On hovering the mouse pointer on different buttons and sliders in ZBrush, the full names of these buttons and sliders will be displayed. If you press and hold the CTRL key while hovering the mouse pointer on the buttons and sliders, a brief description about them will be displayed.

## HOT KEYS

In ZBrush, you can use shortcut keys to invoke the commonly used features. These keys are also referred to as hot keys which help you work efficiently and faster. The most commonly used keys and their functions are listed in Table 1-1.

*Table 1-1 Commonly used keys and their functions*

Keys	Functions
G	Invokes the <b>Projection Master</b> tool
T	Activates the 3D edit mode
Q	Activates the <b>Draw</b> mode
W	Activates the <b>Move</b> tool
E	Activates the <b>Scale</b> tool
R	Activates the <b>Rotate</b> tool
I	Change the <b>Rgb Intensity</b>
U	Change the <b>Z Intensity</b>
O	Change the <b>Focal Shift</b>

Keys	Functions
S	Adjust the draw size of the brush
V	Switch colors in the color swatches
0	Display the actual size of the canvas
P	Activates Perspective Distortion
F	Fit Mesh to View
SHIFT+R	Invoke BPR renderer
CTRL+0	Display the antialiased half size of the canvas
SHIFT+P	Display Floor Grid
SHIFT+F	Draw Polyframe
SHIFT+X	Xpose View

### Self-Evaluation Test

Answer the following questions and then compare them to those given at the end of this chapter:

- In which of the following formats a ZBrush document is saved?
  - ZBR
  - ZTL
  - ZBD
  - None of these
- Which of the following palettes is used to change the focal shift and intensity of the brush stroke?
  - Brush
  - File
  - Document
  - Draw
- The **Projection Master** is located at the \_\_\_\_\_ .
- The \_\_\_\_\_ brush is the default sculpting brush in ZBrush.
- The term BPR stands for \_\_\_\_\_ .
- The value of the **SPix** slider varies between \_\_\_\_\_ to \_\_\_\_\_ .
- The ZBrush canvas can be zoomed in and zoomed out with the help of [ and ] keys. (T/F)
- The **Transp** button is used to hide all the deselected subtools used in the model. (T/F)
- The **Actual** button is used to display a document at its 100% size. (T/F)
- The **Projection Master** can be activated by pressing P. (T/F)

## Review Questions

Answer the following questions:

- Where is the **QuickSave** button located?
  - Top shelf
  - Title bar
  - Left shelf
  - Right shelf
- Where is the **Current Color** button located?
  - Top Shelf
  - Left Shelf
  - Right Shelf
  - None of these
- Which of the following buttons is used to control the quality of antialiasing in the render?
  - Material**
  - Texture**
  - Local Symmetry**
  - SPix**
- Which of the following buttons is used to display the polygon edges of a 3D object?
  - PolyF**
  - Xpose**
  - SPix**
  - Frame**
- The \_\_\_\_\_ button is used to enable the sculpting brushes.
- The \_\_\_\_\_ key toggles the alternate mode for **Z Add** and **Z Sub** buttons.
- The palettes in ZBrush are organized alphabetically, starting from \_\_\_\_\_ to \_\_\_\_\_.
- The **LightBox** browser is located on the right side of the canvas. (T/F)
- In ZBrush, a 3D model is known as ZProject. (T/F)
- The **Marker** palette stores information about the orientation, colors, brush strokes, and position of the 3D object. (T/F)

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**Answers to Self-Evaluation Test**

1. a, 2. d, 3. top shelf, 4. **Standard**, 5. Best Preview Render, 6. 0 to 7, 7. F, 8. F, 9. T, 10. F