MODIFYING PATHS AND POINTS pdf

1: How to edit and reshape paths in Illustrator

Points and Paths. All shapes are made up of vector points connected by paths, which make up the outlines of a shape. Vector editing allows you to create new shapes but also modify and polish your vector layers.

Drag the tool along the length of the path segment you want to smooth out. Continue smoothing until the stroke or path is the desired smoothness. Using the Smooth tool A. Result To change the amount of smoothing, double-click the Smooth tool and set the following options: Fidelity Controls how far you have to move your mouse or stylus before Illustrator adds a new anchor point to the path. For example, a Fidelity value of 2. Fidelity can range from 0. Smoothness Controls the amount of smoothing that Illustrator applies when you use the tool. You can get a smooth curve, while keeping the opposite curves intact. Pair opposite handles using the Anchor Point tool A. Opposite handles are paired, resulting in a smooth curve Simplify a path Simplifying a path removes extra anchor points without changing the shape of the path. Removing unnecessary anchor points simplifies your artwork, reducing the file size, and making it display and print faster. Set the Curve Precision to control how closely the simplified path follows the original path. Select Preview to show a preview of the simplified path and list the number of points in the original and simplified paths. A higher percentage creates more points and a closer fit. Any existing anchor points are ignored except for endpoints of a curve and corner points unless you enter a value for Angle Threshold. If the angle of a corner point is less than the angle threshold, the corner point is not changed. This option helps keep corners sharp, even if the value for Curve Precision is low. Corner points are removed if they have an angle greater than the value set in Angle Threshold. Show Original Shows the original path behind the simplified path. Average the position of anchor points Select two or more anchor points on the same path or on different paths. Convert between smooth points and corner points You can convert the points on a path between corner and smooth points. Use options in the Control panel to quickly convert multiple anchor points. Use the Convert Anchor Point tool to choose to convert only one side of the point, and to precisely alter the curve as you convert the point. Convert one or more anchor points using the Control panel To use the anchor point conversion options in the Control panel, select relevant anchor points only, not the entire object. If you select multiple objects, one of the objects must be only partially selected. When entire objects are selected, the Control panel options change to those that affect the entire object. To convert one or more corner points to smooth points, select the points and then click the Convert Selected Anchor Points To Smooth button in the Control panel. To convert one or more smooth points to corner points, select the points and then click the Convert Selected Anchor Points To Corner button in the Control panel. Convert an anchor point precisely using the Convert Anchor Point tool Select the entire path you want to modify so that you can see its anchor points. Select the Convert Anchor Point tool. Position the Convert Anchor Point tool over the anchor point you want to convert, and do one of the following: To convert a corner point to a smooth point, drag a direction point out of the corner point. Dragging a direction point out of a corner point to create a smooth point To convert a smooth point to a corner point without direction lines, click the smooth point. Clicking a smooth point to create a corner point To convert a smooth point to a corner point with independent direction lines, drag either direction point. Converting a smooth point to a corner point To convert a corner point without direction lines to a corner point with independent direction lines, first drag a direction point out of a corner point making it a smooth point with direction lines. Erase artwork You can erase portions of your artwork using the Path Eraser tool, the Eraser tool, or the eraser on a Wacom stylus pen. The Path Eraser tool lets you erase parts of a path by drawing along the path. This tool is useful when you want to limit what you erase to a path segment, such as one edge of a triangle. The Eraser tool and the eraser on a Wacom stylus pen let you erase any area of your artwork, regardless of structure. You can use the Eraser tool on paths, compound paths, paths inside Live Paint groups, and clipping paths. Using the Path Eraser tool to erase portions of a path left ; using the Eraser tool to erase part of a grouped object right Erase part of a path using the Path Eraser tool Select the object. Select the Path Eraser tool. Drag the tool along the length of the path segment you want to erase. For best results, use a single, smooth, dragging motion. Erase objects using the Eraser tool Do one of

the following: To erase specific objects, select the objects or open the objects in isolation mode. To erase any object on the artboard, leave all objects unselected. When you have nothing selected, the Eraser tool erases through and across all layers. Select the Eraser tool. Optional Double-click the Eraser tool and specify options. Drag over the area you want to erase. You can control the tool by doing any of the following: Erase objects using a Wacom styluspen eraser When you flip a stylus pen, the Eraser Tool automatically becomes active. When you flip the stylus pen back over, the last active tool becomes active again. Turn over the stylus pen and drag across the area you want to erase. Press harder to increase the width of the erased path. You may need to select the Pressure option in the Eraser Tool Options dialog box first. Eraser tool options You can change the Eraser tool options by double-clicking the tool in the Tools panel. You can change the diameter at any time by pressing] to enlarge or [to reduce. Angle Determines the angle of rotation for the tool. Drag the arrowhead in the preview, or enter a value in the Angle text box. Roundness Determines roundness of the tool. Diameter Determines the diameter of the tool. Select one of the following options: Fixed Uses a fixed angle, roundness, or diameter. Random Uses random variations in angle, roundness, or diameter. Enter a value in the Variation text box to specify the range within which the brush characteristic can vary. For example, when the Diameter value is 15 and the Variation value is 5, the diameter can be 10, or 20, or any value in between. Pressure Varies in angle, roundness, or diameter based on the pressure of a drawing stylus. This option is most useful when used with Diameter. It is available only if you have a graphics tablet. Enter a value in the Variation text box to specify how much more or less the original value the brush characteristic will vary. Stylus Wheel Varies in diameter based on manipulation of the stylus wheel. Tilt Varies in angle, roundness, or diameter based on the tilt of a drawing stylus. This option is most useful when used with Roundness. It is available only if you have a graphics tablet that can detect the direction in which the pen is tilted. Bearing Varies in angle, roundness, or diameter based on the pressure of a drawing stylus. It is available only if you have a graphics tablet that can detect how close to vertical the pen is. Rotation Varies in angle, roundness, or diameter based on how the drawing stylus pen tip is rotated. It is available only if you have a graphics tablet that can detect this type of rotation. Split a path You can split a path at any anchor point or along any segment. When you split a path, keep the following in mind: If you want to split a closed path into two open paths, you must slice in two places along the path. If you slice a closed path only once, you get a single path with a gap in it. Any paths resulting from a split inherit the path settings of the original path, such as stroke weight and fill color. Stroke alignment is automatically reset to center. Optional Select the path to see its current anchor points. Do one of the following: Select the Scissors tool and click the path where you want to split it. When you split the path in the middle of a segment, the two new endpoints appear on top of the other, and one endpoint is selected. Select the Knife tool and drag the pointer over the object. The cuts created using the Knife tool appear as strokes on the object. Select the anchor point where you want to split the path, and then click the Cut Path At Selected Anchor Points button in the Control panel. When you split the path at an anchor point, a new anchor point appears on top of the original anchor point, and one anchor point is selected. Use the Direct Selection tool to adjust the new anchor point or path segment.

The Pen tool changes to the Delete Anchor Point tool when positioned over a point on a selected path. The Delete Anchor Point tool displays a minus sign over a point. You may also want to create an open path by deleting a segment or the point between two segments.

This section not yet updated for Inkscape v0. Editing Paths Updated for v0. The primary means for editing paths is to use the Node Tool to modify one or more path nodes. Warning This section not yet updated for Inkscape v0. This flexible tool enables the addition, deletion, and movement of nodes. A Sculpting mode allows easy fine tuning of paths with many nodes. Auto-smooth nodes enable nodes to be moved while maintaining smooth curves. Then click on the path you wish to edit. If you are editing a complex drawing, you can improve performance by disabling updating of the path outline while dragging nodes. You can also disable updating the path itself while dragging nodes. Parallels in Node and Object Editing Many of the things you can do with objects, you can do with nodes using the same methods. This is especially true for selecting and moving nodes. For example, the Arrow keys move selected objects by the Nudge factor when the Select Tool is active; they move selected nodes by the Nudge factor when the Node Tool is active. Knowing this should make learning to use the Node Tool quicker. Selecting Nodes Nodes must be selected before they can be edited with one exception, click-dragging a path will move the path by adjusting the handles on the nearest nodes. Selected nodes are indicated by a change in color as well as a slight enlargement in size. Nodes from different paths can be selected at the same time if the paths are selected. By default, the handles of the selected nodes are shown, as are the handles for adjacent nodes. If the handles get in the way of selecting nodes, they can be toggled off by clicking on the Hide Handles icon in the Tool Controls. Clicking the icon a second time toggles the handles back on. Nodes can be selected for editing a number of ways: Left Mouse Click on a node to select that node. A node turns red when the pointer hovers over it and it can be selected or deselected. Note that a node can be selected and moved in one step by click-dragging on the node. Left Mouse Click on the path to select the nearest node on each side of the place where you clicked. The hand symbol is added to the pointer when hovering over a clickable path. Note that the path can be adjusted by click-dragging on the path. In this case, nearest nodes are not selected. Left Mouse Drag will select all nodes within the rubber-band box. The drag must not begin on a path unless the Shift is used. Using the Shift key allows the drag to begin on a path except over a node broken in v0. Nodes can be added or removed from the selection by holding down the Shift key while using one of the previous methods. This selection technique is especially useful in conjunction with node sculpting. Two modes are possible: The default mode adds nodes based on the spatial distance from the cursor. If the Ctrl key is held down, the nodes are selected based on the linear distance measured along the path swapped in v0. In this latter case, only nodes in the same sub-path can be selected. Tab selects the next node in a path if one is already selected. This is usually the adjacent node in the direction the path was drawn. If no node is selected, it will select the first node. Editing Nodes with the Mouse The mouse can be used to move nodes and handles by dragging them. It can also be used to alter the shape of a path between two nodes by dragging the path. Nodes Left Mouse Drag: If the pointer starts over a selected node, all selected nodes will move. If the pointer starts over an unselected node, that node will be selected and moved. Move selected nodes in either the horizontal or vertical direction. Move selected nodes along a line collinear with a node handle or to its perpendicular passing through the node. The handles used are those belonging to the node where the pointer begins the drag. Temporarily disable snapping nodes to the Grid or to Guide Lines if snapping of nodes enabled. While dragging, drop an unlinked copy of the nodes. The copy is of the entire path even if only a few nodes are selected. Handles A handle becomes active when the mouse hovers over its control point. The control point will turn red. The Shift, Ctrl, and Alt keys can be used in combination for the options listed below. Rotate both handles of a node together useful for corner nodes. Snap handle to either a multiple of the Rotation snap angle 15 degrees by default , a line collinear with or orthogonal to the original handle position, a line collinear with the opposite handle if it exists , or a line collinear with the opposite straight line segment if it exists. Allow only angle and not length to change as handle is dragged. Transforms New in v0. A group of

selected nodes can be transformed exactly like an object. Editing Nodes with the Keyboard This section covers using the keyboard to move nodes and to adjust their handles. The keyboard can also be used to add and delete nodes, change the type of node, and to join or break paths. For these latter uses, see the keyboard shortcuts in the following section on the Node Tool- Tool Controls. In this section, Left- and Right- applied to the Ctrl and Alt modifying keys refers to the keys on the left and right side of the Space bar. Using a left modifying key causes the left handle of a node to be modified; using a right modifying key modifies the rightmost handle. The definition of which handle is left or right is not always completely obvious as when one handle is directly above the other or when the leftmost handle is moved to the right of the former rightmost handle. Multinode Operations The scaling and rotating operations described below are different if one node is selected as compared to two or more nodes. If the mouse is over a node, then that node is used as the center of rotation. It is also possible to flip the nodes horizontally and vertically by using keyboard shortcuts. An example of editing multiple nodes. The rectangles on the right are formed by one path. By selecting all the nodes on the right side of the path and using the normal transformation commands a perspective effect can be achieved. Translations Same as for translating objects. Move selected nodes by the Nudge factor 2 SVG pixels by default. Move selected nodes by ten times the Nudge factor. Move selected nodes one Screen pixel. Move selected nodes ten Screen pixels. Scaling Handles Scaling applies to the the node handles and is not directly mappable to scaling objects. These items only apply when one node is selected. Expand handles on both sides of selected node by Scale step 2 SVG pixels by default. Shorten handles on both sides of selected node by Scale step 2 SVG pixels by default. Expand handle on one side of selected node by Scale step. Left-Ctrl selects the leftmost handle while Right-Ctrl selects the rightmost handle. Shorten handles on one side of selected nodes by Scale step. See above for usage of Left versus Right Ctrl keys. Expand handle on one side of selected node by one Screen pixel. See above for usage of Left versus Right Alt keys. Shorten handle on one side of selected node by one Screen pixel. Rotating Handles Rotating applies to the the node handles and is not directly mappable to rotating objects. Rotate handles of selected node counterclockwise by the Rotation snap angle 15 degrees by default. Rotate handles of selected node clockwise by the Rotation snap angle 15 degrees by default. Rotate handle on one side of selected node counterclockwise by the Rotation snap angle. Left-Ctrl selects the leftmost handle while Right-Ctrl selects the rightmost handle, as described earlier. Only works with corner nodes. Rotate handle on one side of selected node clockwise by the Rotation snap angle. Rotate handle on one side of selected node counterclockwise by one Screen pixel. Rotate handle on one side of selected node clockwise by one Screen pixel. The Node Tool - Tool Controls. Insert new nodes into selected segments. Clicking on the path will select the nearest node on both sides of the point where the path was clicked.

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3: javascript - Modify path with anchor points on HTML5 canvas - Stack Overflow

Modifying Paths. Once you create a path, you can still change its shape and the position of the points. You can also split a path into two separate segments or join two segments together.

You can select an entire path and reshape, rescale, rotate, skew or distort it, and so on. Or, you can select a path segmentâ€"the section of the path between two anchorsâ€"select just some path segments, or select a set of anchors. You can also group more than one path and edit the group as you would an individual object. Selecting objects within groups has always been a bit sticky in Illustrator, but CS3 has a new group isolation feature that makes this process easier. Illustrator CS3 also allows you to align anchors. This means, for example, that you can vertically align a group of selected anchors so they are all on a horizontal plane. You can select, and edit, an entire path when you want to move or resize the path. You can select either an anchor or a path segment to reshape an object. You can select path segments by clicking on or within three pixels of the segment with the Direct Selection tool. You can also use the Lasso tool to select multiple path segments. After you select a path segment, you can reshape an object by moving that segment Figure Figure 30 Moving a selected path to reshape a rectangle with the Direct Selection tool. The Selection tool is used for selecting entire paths and groups of objects. The Direct Selection tool can select individual anchor points, path segments, or entire objects. To select an object or group with the Selection tool, just click on the path. If the object has a fill, you can click on that as well. You can add objects to or remove objects from a selection set by holding down the Shift key as you click with the Selection tool. This works with path segments or anchors selected with the Direct Selection tool as well. Copying an Anchor If you click and drag on an anchor and then press the Option Mac or Alt Windows key, you duplicate the anchor at the new position while leaving the original anchor in place. The resulting new anchor will connect two new path segments. It is used to select objects whose fill colors are very similar to the RGB color settings of the fill color of the clicked-on object. You can tweak how carefully the Magic Wand tool discriminates between shades of fill colors by opening the little-used Magic Wand panel from the Window menu. The Magic Wand panel allows you to set tolerance for fill colors. If you enable Show Stroke Options and Show Transparency Options from the panel menu, you can use the Magic Wand panel to define any combination of fill color, stroke color, stroke weight, opacity, or blending mode settings to find similar objects to the one you click. Please check back later.

4: Sketch - Points and Paths

Selecting Anchor Points and Modifying Paths In Photoshop® Selecting All Points In A Path 1. Press and hold the Option/Alt key. With the Direct.

You can use this class to define simple shapes, such as ovals and rectangles, as well as complex shapes that incorporate multiple straight and curved line segments. You can also use paths to define a clipping region for the current graphics context, which you can then use to modify subsequent drawing operations in that context. Paths are vector-based shapes that are built using line and curve segments. You can use line segments to create rectangles and polygons, and you can use curve segments to create arcs, circles, and complex curved shapes. Each segment consists of one or more points in the current coordinate system and a drawing command that defines how those points are interpreted. Each set of connected line and curve segments form what is referred to as a subpath. The end of one line or curve segment in a subpath defines the beginning of the next. The processes for building and using a path object are separate. Building the path is the first process and involves the following steps: Create the path object. These drawing attributes apply to the entire path. Set the starting point of the initial segment using the moveToPoint: Add line and curve segments to define a subpath. Optionally, close the subpath by calling closePath , which draws a straight line segment from the end of the last segment to the beginning of the first. Optionally, repeat the steps 3, 4, and 5 to define additional subpaths. When building your path, you should arrange the points of your path relative to the origin point 0, 0. Doing so makes it easier to move the path around later. During drawing, the points of your path are applied as-is to the coordinate system of the current graphics context. If your path is oriented relative to the origin, all you have to do to reposition it is apply an affine transform with a translation factor to the current graphics context. The advantage of modifying the graphics context as opposed to the path object itself is that you can easily undo the transformation by saving and restoring the graphics state. To draw your path object, you use the stroke and fill methods. These methods render the line and curve segments of your path in the current graphics context. The rendering process involves rasterizing the line and curve segments using the attributes of the path object. The rasterization process does not modify the path object itself. As a result, you can render the same path object multiple times in the current context or in another context. From that point, you create the lines of the shape using the addLineToPoint: You create the lines in succession, with each line being formed between the previous point and the new point you specify. Listing shows the code needed to create a pentagon shape using individual line segments. This code sets the initial point of the shape and then adds four connected line segments. The fifth segment is added by the call to the closePath method, which connects the last point 0, 40 with the first point , 0.

Select the anchor point where you want to split the path, and then click the Cut Path At Selected Anchor Points button in the Control panel. When you split the path at an anchor point, a new anchor point appears on top of the original anchor point, and one anchor point is selected.

Lets start with presenting the tool. This will trigger the path tool, highlighting the shape path with a red line, and marking the connecting points a. This line and the corresponding square will edit the arc curvature of the two lines connected to the shape point Step 3 of the following figure. Make the exercise of inserting any PowerPoint shape, and edit its point to practice the effect. The power of editing the PowerPoint shape path is such that after several editions, you can end up with a completelly different shape. We will present here 2 examples that we worked with our users at SlideModel. This kind of shapes are not part of PowerPoint standard shapes, so it is very useful to work this example as it is a situation that generally the users face when creating a presentation. Step 1 â€" Create a Simple Triangle We will use a simple technique for image creation and drawing in general that consists of creating an image that can be seen as a composite of two symmetrical shapes. In this case, a heart, can be vertically divided in two. If we imagine geometrical shapes that will create a heart, we can think of two rectangle triangles pointing down. Said this we will start the example with the creation of a PowerPoint rectangle triangle. Step 2 â€" Edit the triangle shape to have three different sides The triangle creation tool of PowerPoint creates isosceles triangles. Said this, we will update the shape to have a smaller side: Step 3 â€" Rotate Triangle and Select The Point to Edit This step consist on rotating the edited triangle to point south down with the rectangular angle to the left it will be the center of the heart shape. Step 4 â€" Edit the Top of the Heart At this step is where the heart starts to appear from the triangle path. With the Point selected, we will take the leftmost angle edit tool the white rectangle near the base of the triangle and drag it slowly up-left. Be careful to drag the angular editor to form a uniform bell same size from the middle to both corners as the image shows. After reaching the bell you think will make a soft heart, stop dragging. Step 5 â€" Edit the Side of the Heart This step will repeat the previous one, but selecting the remaining angular editor. Drag and drop the white square in order to generate a smooth continuous curve between the 2 lines connected with the Point. Generally a approach is to align the angular editors and make the white squares, equidistant from the point, that will generate a smooth curve. After completing this step, you will have the vertical half of a PowerPoint Heart Shape. Step 6 â€" Complete the Heart Shape Copy and paste the created shape, you will have to identical shapes. Move the new shape to match symmetrically the initial shape. Step 1 â€" Start with the Pentagon Base. The objective of this example is to create a complex 3D Polyhedron of pentagonal irregular shapes. So we will start with a simple pentagon with a gradient fill. We will copy, paste and rotate this shape 5 times, 1 for each side of the pentagon. Step 2 â€" Start Editing the External Pentagons In order to create the effect of a 3D shape, we will need to bend the external pentagons in order to touch each other. Imagine that you try to create a sphere with pentagonal petals. You need to paste each side of each pentagon together and bend the pentagon. Considering that we will not get a regular shape, we just recommend as a guideline, to have acute angles in the outside of the shape. That provides a sphere like effect. Step 3 â€" Finalize the Shape Finally, you will overlap the shapes to clear the spaces and generate the effect of a solid 3D Shape. Now that the user understands the concept of Shape Path, and how is edited in PowerPoint, will be able to edit any PowerPoint Shape and customize not only the effects and properties but the shape itself. This tool is very powerful and brings the world of Path drawing from traditional graphic design tools to PowerPoint presentations.

6: Editing Paths in Photoshop

The best way to modify paths in your artwork is to add or remove anchor points from an existing path. Both the Pen tool and the Control Panel can be used to modify the anchor points. You will now complete Exercise 5.

Vector editing allows you to create new shapes but also modify and polish your vector layers. Selecting Points Just like layers, you can select multiple points. Just hold down the Shift key while you click on points. Selected points will appear larger and darker than unselected points. Shift-clicking an already selected point will deselect it. Depending on a point type, its handle control points can also be selected. Another way to select multiple points is by clicking-and-dragging from outside of a closed shape to make a rectangular selection. Any points that lie within this will be selected. Holding down Shift before clicking-and-dragging will extend the current selection. If your path is open, clicking anywhere in the Canvas will add a new point, so you need to choose the Selection tool by clicking the button next to the Rounding options in the Inspector, or press X. It is also worth noting that you can edit multiple vector shapes at once. Select any layer that contains subpaths, or select two or more vector shapes and press the Enter key to begin editing. Vector points will become visible for all shapes where you can make your edits at once, without having to individually select each shape to make your changes. Pressing the Command-A shortcut will select all the points within a shape, and pressing the Tab key will jump between points in the order they were placed. Moving Points With a point selected, you can move it around to modify your shape. When dragging a point around, you may see smart guides appear which allows you to align that point to other points, or the middle of the shape. This means that after you move a point, it will remain in the exact X, or Y position that it was before. This is also the case for handle control points. Holding down the Option key will display all handle control points within the shape â€" any of which can be moved regardless of what point you have selected. Aligning Points It is possible to use the distribute and align tools at the top of the Inspector when you have multiple points selected. Distribute will ensure three or more points will be an equal distance from each other, whilst align will make sure two or more points line up. Rounding Points Points may often snap to certain places when moving or inserting new points, and this is due to the Rounding option found in the Inspector, under the point type selection. You have the ability to round to full pixel edges, half pixels, or choose not to round at all. If inserting new points when zoomed in, you will see a point preview snap to full, or half pixels before placing it, without worrying about being too precise or editing it later. When you hover over a path segment between two points , it will appear blue along with a point preview that follows your cursor. If you click, you will insert a new point: Straight, on a straight line, and Asymmetric if the segment is already curved. If you click and drag to create a new point, the path will curve with an Asymmetric point. If you hold down the Shift key and click on a path between two points, Sketch will insert the new point exactly in the middle. You can also directly manipulate a path without inserting additional points. Holding Command, click and drag the path to begin bending it. Although not part of the vector editor, the Scissors tool can be used to open a path, and cut away a segment between two vector points. Closed vs Open A path can be either closed or open. When it is closed, all the paths between the points will be connected. When a path is open, it leaves a gap between the last point and the first. You can click the Finish Editing button, or press the Enter key to leave the editing mode to keep your path open. The next time you edit it, you can continue from where you left off and place your next point from either the first or last drawn point. Depending on your preferences, when editing an open path and clicking on the opposite end point, you can either close the path, or select the point to allow easy editing. Last modified on Oct 02, Was this article useful?

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To delete a path: Select the path by using the Path Selection tool and press the Backspace key. You can also select a point on the path by using the Direct Selection tool and pressing Backspace twice.

Click the Advanced System Settings link in the left column. In Windows 10, you may need to scroll down to the Related settings section and click the System info link. In the System window that opens, click the Advanced system settings link in the left column. In the System Properties window, click on the Advanced tab, then click the Environment Variables button near the bottom of that tab. In the Environment Variables window pictured below , highlight the Path variable in the "System variables" section and click the Edit button. Add or modify the path lines with the paths you want the computer to access. Each different directory is separated with a semicolon as shown below. You can edit other environment variables by highlighting the variable in the "System variables" section and clicking Edit. If you need to create a new environment variable, click New and enter the variable name and variable value. To view and set the path in the Windows command line, use the path command. If you need to create a new environment variable, click New and enter the Variable name and Variable value. To change the system environment variables, follow the steps below. From the Desktop , right-click My Computer and click Properties. In the System Properties window , click on the Advanced tab. In the "Advanced" section, click the Environment Variables button. Finally, in the Environment Variables window as shown below , highlight the Path variable in the Systems Variable section and click the Edit button. What is the default Windows Environment Path? The path is based on programs installed on the computer, so there is no "default path". However, the Windows minimum path is typically the path below. Keep in mind that as you install programs, the path is updated with the paths for the newly installed programs. So, if you have erased your path after installing other programs, those programs may be affected.

8: Drawing Shapes Using Bézier Paths

Auto Point, Smooth Point, Straight Point, and Corner Point are the various types of vertexes that help you to change the look of your Motion Paths. You can learn more about these various types of points in our Types of Points (Vertexes) tutorial.

You can edit your curve, you can paint with your curve, or even save, import, and export the curve. You can also use paths to create geometrical figures. Paths have their own dialog box: Activating the Tool You can get this tool in several ways: Key modifiers Defaults Note Help messages pop up at the bottom of the image window to help you about all these keys. Shift This key has several functions depending on context. See Options for more details. Ctrl ; Alt Three modes are available to work with the Paths tool: Ctrl key toggles between Design and Edit. Design Mode By default, this tool is in Design mode. You draw the path by clicking successively. You can move control points by clicking on them and dragging them. Between control points are segments. Numbers are steps to draw a two segments straight path. Curved segments are easily built by dragging a segment or a new node. Blue arrows indicate curve. Two little handles appear that you can drag to bend the curve. Tip To quickly close the curve, press Ctrl key and click on the initial control point. In previous versions, clicking inside a closed path converted it into Selection. Now, you can use the Create selection from path button or the Path to Selection button in the Path Dialog. Tip When you have two handles, they work symmetrically by default. Release the pressure on the mouse button to move handles individually. The Shift key will force the handles to be symmetrical again. Several functions are available with this mode: Add a new node: If the active node is on the path, the pointer is a square and you can create a new component to the path. This new component is independent from the other, but belongs to the path as you can see on the Path dialog. Pressing Shift forces the creation of a new component. Move one or several nodes: On a node, the mouse pointer becomes a 4-arrows cross. You can click and drag it. You can select several nodes by Shift and click and move them by click and drag. You have to Edit a node before. Drag it to bend the curve. Pressing Shift toggles to symmetric handles. When the mouse pointer goes over a segment, it turns to a 4-arrows cross. Click-and-drag it to bend the segment. As soon as you move, handles appear at both ends of the segment. Pressing Shift key toggles to symmetric handles. Edit Mode Edit performs functions which are not available in Design mode. With this mode, you can work only on the existing path. Outside, the pointer is a small crossed circle on the whole image if there is no path! Add a segment between two nodes: Click on a node at one end of the path to activate it. The pointer is like a union symbol. Click on an other node to link both nodes. This is useful when you have to link unclosed components. Remove a segment from a path: Pointer turns to -. Click to delete the segment. Add a node to a path: Click where you want to place the new control point. Click to delete the node. Add a handle to a node: Point to a node. Pointer turns to small hand. Remove a handle from a node: Click to delete the handle. Caution No warning before removing a node, a segment or a handle. Move Mode Move mode allows to move one or all components of a path. Simply click on the path and drag it. If you have several components, only the selected one is moved. If you click and drag outside the path, all components are moved. Pressing Shift key toggles to move all components also. Polygonal With this option, segments are linear only. Handles are not available and segments are not bent when moving them. Create selection from path This button allows creation of a selection that is based on the path in its present state. This selection is marked with the usual "marching ants". Note that the path is still present: If you change tool, the path becomes invisible, but it persists in Path Dialog and you can re-activate it. If the path is not closed, GIMP will close it with a straight line. As the help pop-up tells, pressing Shift when clicking on the button will add the new selection to an eventually pre-existent. Stroke path In previous versions, you could access to this command only by the Edit sub-menu in the Image Menu. Now you can access to it also via this button.

Windows 10 tip: Point and click to edit the system path variable. Adding a folder to the system path used to require manual editing, with the accompanying risk of mistyping.

Anchor points mark the end points of the path segments. On curved segments, each selected anchor point displays one or two direction lines, ending in direction points. The positions of direction lines and points determine the size and shape of a curved segment. Moving these elements reshapes the curves in a path. Unselected anchor point A path can be closed, with no beginning or end for example, a circle , or open, with distinct end points for example, a wavy line. Smooth curves are connected by anchor points called smooth points. Sharply curved paths are connected by corner points. Smooth point and corner point When you move a direction line on a smooth point, the curved segments on both sides of the point are adjusted simultaneously. By comparison, when you move a direction line on a corner point, only the curve on the same side of the point as the direction line is adjusted. Adjusting a smooth point and a corner point A path does not have to be one connected series of segments. It can contain more than one distinct and separate path component. Separate path components selected Select a path Selecting a path component or path segment displays all of the anchor points on the selected portion, including any direction lines and direction points if the selected segment is curved. Direction handles appear as filled circles, selected anchor points as filled squares, and unselected anchor points as hollow squares. Do one of the following: To select a path component including a shape in a shape layer , select the Path Selection tool , and click anywhere inside the path component. If a path consists of several path components, only the path component under the pointer is selected. Drag a marquee to select segments. To select additional path components or segments, select the Path Selection tool or the Direct Selection tool, and then hold down Shift while selecting additional paths or segments. Select multiple paths Photoshop CC You can select multiple paths on the same layer or across different layers. Shift-click to select contiguous paths. Select the Path Selection tool or the Direct Selection tool and do any of the following: Drag over the segments. To select additional path components or segments, select the Path Selection tool or the Direct Selection tool, and then hold down the Shift key while selecting additional paths or segments. You can choose to work with paths in the isolation mode. To isolate only the layer containing a path, with the path active, double-click using a selection tool. You can exit the isolation mode in several ways, such as: Turning off Layer Filtering Switching Layer Filtering to something other than Selected Double-clicking away from a path using the path selection tools Reorder paths You can reorder saved paths that are not Shape, Type, or Vector Mask paths in the Paths panel. In Photoshop CC, you can select and drag more than one path simultaneously. In Photoshop CC, you can select more than one path. Do any of the following: Alt-drag Windows or Option-drag the paths. Choose Duplicate Path from the panel menu. Specify path options You can define the color and thickness of path lines to suit your taste and for easier visibility. While creating a path—using the Pen tool, for example—click the gear icon in the Options bar. Now specify the color and thickness of path lines. Thickness and Color Adjust path segments You can edit a path segment at any time, but editing existing segments is slightly different from drawing them. Keep the following tips in mind when editing segments: If an anchor point connects two segments, moving that anchor point always changes both segments. When you initially draw a smooth point with the Pen tool, dragging the direction point changes the length of the direction line on both sides of the point. Move straight segments With the Direct Selection tool , select the segment you want to adjust. Drag the segment to its new position. Adjust the length or angle of straight segments With the Direct Selection tool select an anchor point on the segment you want to adjust. Drag the anchor point to the desired position. Adjust the position or shape of curved segments With the Direct Selection tool ,, select a curved segment, or an anchor point on either end of the curved segment. Direction lines appear, if any are present. Some curved segments use just one direction line. To adjust the position of the segment, drag the segment. Click to select the curve segment. Then drag to adjust. To adjust the shape of the segment on either side of a selected anchor point, drag the anchor point or the direction point. Drag the anchor point, or drag the direction point. Adjusting a path segment also adjusts the related segments, letting you

intuitively transform path shapes. To only edit segments between the selected anchor points, similar to earlier Photoshop versions, select Constrain Path Dragging in the options bar. You can also apply a transformation, such as scaling or rotating, to a segment or anchor point. Select the Direct Selection tool , and select the segment you want to delete. Pressing Backspace or Delete again erases the rest of the path. Delete the direction line of an anchor point Using the Convert Anchor Point tool, click the anchor point of the direction line. The smooth point becomes a corner point. For more information, see Convert between smooth points and corner points. Extend an open path Using the Pen tool, position the pointer over the endpoint of the open path you want to extend. To create a corner point, position the Pen tool where you want to end the new segment, and click. If you are extending a path that ends at a smooth point, the new segment will be curved by the existing direction line. To create a smooth point, position the Pen tool where you want to end the new curved segment, and drag. Connect two open paths Using the Pen tool, position the pointer over the endpoint of the open path that you want to connect to another path. To connect the path to another open path, click an endpoint on the other path. Click that endpoint when you see the small merge symbol that appears next to the pointer. Move or nudge anchor points or segments using the keyboard Select the anchor point or path segment. Click or hold down any of the arrow keys on the keyboard to move 1 pixel at a time in the direction of the arrow. Hold down the Shift key in addition to the arrow key to move 10 pixels at a time. Add or delete anchor points Adding anchor points can give you more control over a path or it can extend an open path. However try not to add more points than necessary. A path with fewer points is easier to edit, display, and print. You can reduce the complexity of a path by deleting unnecessary points. The toolbox contains three tools for adding or deleting points: By default, the Pen tool changes to the Add Anchor Point tool as you position it over a selected path, or to the Delete Anchor Point tool as you position it over an anchor point. You can select and edit multiple paths simultaneously. You can also reshape a path while adding anchor points by clicking and dragging as you add. These keys and commands delete the point and line segments that connect to that point. Add or delete anchor points Select the path you want to modify. To add an anchor point, position the pointer over a path segment and click. To delete an anchor point, position the pointer over an anchor point and click. Disable or temporarily override automatic Pen tool switching You can override automatic switching of the Pen tool to the Add Anchor Point tool or the Delete Anchor Point tool. This is useful when you want to start a new path on top of an existing path. Convert between smooth points and corner points Select the path you want to modify. Position the Convert Point tool over the anchor point you want to convert, and do one of the following: To convert a corner point to a smooth point, drag away from the corner point to make direction lines appear. Dragging a direction point out of a corner point to create a smooth point To convert a smooth point to a corner point without direction lines, click the smooth point. Clicking a smooth point to create a corner point To convert a corner point without direction lines to a corner point with independent direction lines, first drag a direction point out of a corner point making it a smooth point with direction lines. To convert a smooth point to a corner point with independent direction lines, drag either direction point. Converting a smooth point to a corner point Adjust path components You can reposition a path component including a shape in a shape layer anywhere within an image. You can copy components within an image or between two Photoshop images. Using the Path Selection tool, you can merge overlapping components into a single component. All vector objects, whether they are described by a saved path, work path, or vector mask, can be moved, reshaped, copied, or deleted. You can also use the Copy and Paste commands to duplicate vector objects between a Photoshop image and an image in another application, such as Adobe Illustrator. Change the overlap mode for the selected path component Using the Path Selection tool , drag a marquee to select existing path areas. Choose a shape area option from the Path Operations drop-down menu in the options bar: Combine Shapes Adds the path area to overlapping path areas. Subtract From Shape Area Removes the path area from overlapping path areas. Intersect Shape Areas Restricts the area to the intersection of the selected path area and overlapping path areas.

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