SELECT TOOL

ACTIVITY DESCRIPTION

-> Selecting the required tools with Select tool
-> Selecting the required Geometry with Select tool

IMPORTENCE OF THE TOOL

-> Select tool is an basic tool Without the select tool we can not select the required geometries that we have to work on.

SELECTION AND USEAGE OF SELECT TOOL

SELECTION

-> we can select the Select tool from default tool bar
or
-> View → Tool Palettes → Large Tool Set → Select tool
or
-> Just hit space key to select the Select tool

USAGE

→ While modeling if you have to switch from an tool to another tool using default tool bar or large tool bar it is wise to switch
to select tool by clicking space key or else there is an chance of misclick will moving from work plane to tool bar which will result in
undesired geometry that you have to work on or erase from the model.

→ To select an line you just have to single click on the line and the selected line will get highlighted.

→ To select an face you just have to single just click on the face of the geometry and the selected face will get highlighted.

→ To select an face along with all the edges of the face you have to double click on the surface or you can just single click on any
edge of the geometry and the selected geometry will get highlighted.

→ To select an whole loose geometry then you have to Triple click on the geometry and the selected loose geometry will get highlighted.

→ To select an grouped geometry you just have to do an single click on it.

→ To add or remove an certain geometry from selected geometries you have to press and hold the shift Key and then click on geometry you
  want to add selection or click on preselected geometry to deselect it.

→ If you want to add more geometries to your selection without removing geometries from that selection you can click and hold ctrl key which will help
   you to add clicked geometries to the selection but you can not remove the perselected geometries from your selection by clicking on any selected geometry.

→ If you want to remove any geometries from your selection without adding geometries to that selection you can click and hold ctrl + Shift key which will help
   you to remove the perselected geometries from your selection but you can not add the geometries to your selection by clicking on any new geometry.

→ To select multiple geometries at once you can click,hold and drag which creates an box where all the geometries inside the box will get selected,if you drag
  from left to right the geometries which lies completely inside the box only will get selected, if you drag from right to left all the geometries inside it and
  geometries it touches will get selected, you can also use the above commands such as ctrl and ctrl + shift with this method.

APPLICATIONS

→ Select tool have lots of application because you can use most of the tools to modify the selected geometry like erasing,extruding,scaling up or down and many other
  applications is possible with Select tool.

TASKS

→ Use select tool for switching between tools.
→ Use select tool for selecting geometry.
→ Add geometries to selection using the ctrl key.
→ Remove geometries from selection using the ctrl + Shift key.
→ Add or remove geometries simultaneously using the shift Key.
→ Select multiple geometries at once by using click, hold and drag method.
→ Use ctrl and ctrl + shift commands with click, hold and drag method.

LINE TOOL

ACTIVITY DESCRIPTION

-> Creating straight lines in desired length angle and axis.
-> Creating free hand lines in desire length angle and axis.

IMPORTENCE OF THE TOOL

-> Line tool is an basic modeling tool which may be required in all model you work on.
-> Line tool can be used to create many simple or complex geometry in 2D or 3D such as rectangle, square,hexagon,polygon,etc..

SELECTION AND USEAGE OF LINE TOOL

SELECTION

-> we can select the Line tool from default tool bar
or
-> View → Tool Palettes → Large Tool Set → Line tool

-> If you click and hold on Line tool you can Switch between Line and Free hand line.

USAGE

→ After selecting the line tool you just have specify the start and end Point of the line.

→ First you have to select the starting Point of the line by left click and you can just move your mouse to the end point of the line
as you need based on length ,angle and axis then do an left click which will create the line.

→ You can also manually enter the length of the line after specifying the start point, angle and axis of the line by moving the mouse a bit and
after that you can just enter the required length of that line which also can create the line.

→ For Free hand line click and hold on line tool and select free hand line tool and then click and hold the left key in the mouse to specify the
start point and move the mouse as per the required line and release the left click which will create the free hand line.

→ If you enclose the lines for example if you created an rectangle using line tool an surface will automatically generated on the face of the rectangle.

APPLICATIONS

→ Line tool have lots of application because you create so many geometries with the help of line tool which you may need in your model.

TASKS

→ Use line tool to create three straight lines in x,y and z axis with length about 10 m.
→ Use line tool to create Straight with length 5 m and angle of about 40' from x axis.
→ Use line tool and create the geometries such as rectangle, Square, polygon, hexagon in both 2D and 3D.
→ Use line tool to create a free hand line.

RECTANGLE TOOL

ACTIVITY DESCRIPTION

→ Drawing Rectangle from corner to corner and from the centre of the rectangle.
→ creating Rectangle in blue, green and red axis.

IMPORTENCE OF THE TOOL

→ Modeling an rectangle is very easy with rectangle tool when compared to line tool for creating a rectangle.

SELECTION AND USEAGE OF ---- TOOL

SELECTION

→ we can select the Rectangle tool from default tool bar
or
→ View → Tool Palettes → Large Tool Set → Rectangle tool
or
→ Just hit R key to select the Rectangle tool

USAGE

→ With the Rectangle tool you just have to pick two points for Drawing an Rectangle or square.

→ Select the Rectangle tool and pick first corner by left click and then move the cursor as per required length and width for your
  rectangle and again do an left click which will create an rectangle.

→ We can also manually enter the length and width for our rectangle, After specifying the first corner and moving the cursor a bit
  in direction you have to create the rectangle you can simply enter the length and width in the following format (length,width)
  which will create an rectangle.

→ For example if want to create an rectangle with length 1000 and width 400 you just have enter 1000,400 after specifying the first
  corner and moving the cursor a bit in direction you have to create the rectangle
.

→ After selecting the rectangle tool if you hit left arrow key you can draw the rectangle in green axis, if you hit right arrow key
  you can draw the rectangle in red axis and if you hit up arrow key you can draw the rectangle in blue axis this feature will let
  you to draw 3D geometries with rectangle tool.

→ We can also draw rectangle from its centre rather from it's corner by clicking ctrl key after selecting the rectangle tool.

APPLICATIONS

→ Rectangle can be used to create many geometry which you need in your model like column, beam, etc..

TASKS

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ERASER TOOL

ACTIVITY DESCRIPTION

→ Erasing unwanted geometries with eraser tool
→ Erasing face without erasing it's edges.

→ Hiding or smoothing edges of an face with eraser tool

IMPORTENCE OF THE TOOL

→ It is very easy to erase unwanted geometries with erase tool and it also provides several option for erasing.

SELECTION AND USEAGE OF ERASER TOOL

SELECTION

→ we can select the Eraser tool from default tool bar which has pink color eraser icon
or
→ Tool Palettes → Large Tool Set → Eraser tool
or
→ Just hit the key E to select the Eraser tool

USAGE

→ First select the erase tool then do a left click and hold it and then drag the cursor over the geometries which you want erase
all the selected geometries will get highlighted and all the highlighted will get erased right after you release the left click.

→ If you dragged the eraser tool over the geometry you do not want to erase along with geometries you want erase you can hit alt key
and drag over the geometry you do not want to erase this will exclude that geometry from getting erased.

→ If you want to erase a face you have to select the face and hit delete or do an right click and click on erase that's the
only way to erase a face without erasing it's edges.

→ You can erase the edges of an geometry without erasing the face, for that select the erase tool hold the shift key and drag over the edges
of the face it will hide the edges of the face, you can also smooth the edges by holding the ctrl key and dragging over the edges.

APPLICATIONS

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TASKS

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POLYGON TOOL

ACTIVITY DESCRIPTION

→ Generating polygon with reference to inner and outer radius of polygon with the polygon tool.
→ Changing the number of sides of polygon and creating the polygon with increased or decreased number of sides.

IMPORTENCE OF THE TOOL

→ Modeling of polygon is quick and easy with polygon tool so it reduces our modeling time significantly.

SELECTION AND USEAGE OF POLYGON TOOL

SELECTION

→ In default tool bar if you click and hold on Rectangle tool you can switch to few other tools polygon tool is one of them.

or

→ View → Tool Palettes → Large Tool Set → polygon tool

USAGE

→ After selecting the Polygon tool you have specify the origin point for the polygon by doing left click then you have to move the cursor to
  required radius and do a left click again or you can manually enter the radius to generate an polygon.

→ While drawing the polygon we can see an doted circle inside the polygon which indicates we creating the polygon by its inner radius we can also
  create the polygon by its outer radius. To switch between inner and outer radius we have to hit shift key.

→ Apart from these we can also increase or decrease number of sides in the polygon by hitting shift and + or shift and - , where clicking shift and + will increase the number of sides and clicking shift and - will decrease the number of sides of the polygon.

→ We can edit the number of sides and radius of the polygon even after we drawn it by selecting polygon, entering entity info and modifying the radius and number of sides.

→ If you want to make the polygon to individual line you have to select the polygon, do a left click and click on explode curve this will change the polygon from a group to loose geometry.

APPLICATIONS

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TASKS

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CIRCLE TOOL

ACTIVITY DESCRIPTION

→ Creating an Circle with help of circle tool.
→ Altering the number of sides of circle.

IMPORTENCE OF THE TOOL

→ Modeling circle with circle tool is quite easy without circle tool it will consume bit more time to create a circle.

SELECTION AND USEAGE OF CIRCLE TOOL

SELECTION

→ In default tool bar if you click and hold on Rectangle tool you can see few other tools Circle tool is also one of them.

or

→ View → Tool Palettes → Large Tool Set → Circle tool

or

→ Just hit c key to select the Circle tool

USAGE

→ Generating a circle from circle tool is quite easy, you have to specify the mid point of the circle and then you have specify the radius of the circle by entering it manually or by moving the cursor to required radius.

→ You can change the number of sides of the circle by selecting the circle from outside, then click on entity info and then enter the number of sides for the circle as you want.

→ The Default number of sides for circle is 24. increasing the number of sides of circle make the circle look smooth but it makes the geometry complex to work on.

→ We can change the number of sides of circle right after selecting the circle tool by entering the number of sides manually before specifying the mid point of the circle.

→ Like wise we can also change the number of sides after specifying mid point of the circle by hitting + or - key, hitting + will increase the number of sides of circle wherever hitting - will decrease the number of sides of circle

APPLICATIONS

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TASKS

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ROTATE TOOL

ACTIVITY DESCRIPTION

→ Rotating an geometry to required angle

→ Rotating copies of geometry.

IMPORTENCE OF THE TOOL

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SELECTION AND USEAGE OF ROTATE TOOL

SELECTION

-> we can select the Rotate tool from default tool bar
or
-> View → Tool Palettes → Large Tool Set → Rotate tool
or
-> Just hit the key Q to select the Rotate tool

USAGE

→ For rotating we have to preselect geometry and we have to select the rotate tool and then we have do the three following steps.
1- select the origin point from where we want to rotate from.
2- select the end point from where we are going rotate the geometry.
3- Drag the end point to rotate the geometry to required angle or just enter angle to rotate.

→ We rotate an whole loose or a part of loose geometry with rotate tool.

→ It is not necessary that both the origin and end points has to be connected to the geometry that we are going to rotate.

→ After selecting geometry you can hit right arrow key which will lock you to red axes and you can only able to rotate the geometry in x axis.

→ Like wise hitting left arrow key will lock you to green axes and up arrow kill will lock you in blue axes.

→ While Rotating if you move your geometry over any other geometry and hit down arrow key it will lock your rotation axes parallel to that geometry
and if you hit down arrow key again it will lock your rotation axes perpendicular to that geometry .

→ If we click control key we can rotate an copy of the geometry where the orginal geometry will stay in it's actual place after that we can enter
  the number copies we want to generate more copies with the same angle between orginal the first copy of the geometry.example: for five copies we have enter 5x .

→ To generate copies in between original and first copy we have use / symbol before the number. example: /5

APPLICATIONS

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TASKS

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MOVE TOOL

ACTIVITY DESCRIPTION

→ Moving an geometry to required distance and angle with move tool.

→ Moving copies of geometry using move tool.

IMPORTENCE OF THE TOOL

→ Move tool is very useful in generating copies of geometries and we can move a misplaced to required position easily.

SELECTION AND USEAGE OF ROTATE TOOL

SELECTION

-> we can select the Move tool from default tool bar
                or
-> View → Tool Palettes → Large Tool Set → Move tool

USAGE

→ After selecting the move tool you can select the geometry which you want to move, the selected geometry will get highlighted now you can drag
  and move the geometry as you want.

→ You can also preselect the geometry you have to move then select the move tool and pick the point where you want to move from after that you can
  manually enter the distance and angle or select second point where you want to move to with the cursor.

→ The two points we are specifying to move the geometry does not have to be connected with the geometry we moving.

→ After selecting geometry you can hit right arrow key which will lock you to red axes and you can only able to move in x axis.

→ Like wise hitting left arrow key will lock you to green axes and up arrow kill will lock you in blue axis.

→ While moving if you move your geometry over any other geometry and hit down arrow key it will lock your movement parallel to that geometryand if you hit down
  arrow key again it will lock your movement axes perpendicular to that geometry .

→ We can also use move tool to copy as like as rotate tool with control key.

→ After specifying the first point click the ctrl key and enter the distance and angle or specify the second point with the cursor this will make
  an copy of the geometry with specified distance from original geometry.

→ Right after doing it we can enter the number of copies we want (example : 5x), it will generate five copies of the geometry where each copy will
   have same specified distance with the geometry before it.

→ To generate copies in between the original geometry and first copy we have to enter an forward slash / followed by the number of copies. (example : /5)

APPLICATIONS

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TASKS

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PROTRACTOR TOOL

ACTIVITY DESCRIPTION

→ Using Protractor tool to measure angle.
→ Generating guide lines using Protractor tool.

IMPORTENCE OF THE TOOL

→ Protractor tool useful in measuring the angles and to generate guide line which can be used as reference during modeling the geometry.

SELECTION AND USEAGE OF PROTRACTOR TOOL

SELECTION

-> View → Tool Palettes → Large Tool Set → Protractor tool.

-> Protractor tool is not available in default tool bar.

USAGE

→ After selecting protractor tool we have to select the origin point of the geometry then we have to select the axis and the we have to specify an another point on the geometry away from the origin point this will show you the angle.

→ We can also measure angle between two lines by selecting origin point followed by selecting the first line and then second line this will show the angle between those two lines.

→ To generate the guide line we have to pick the origin and end point of any line and then we can drag the cursor to required angle or we can simply enter the required angle this will generate the guide line.

APPLICATIONS

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TASKS

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PUSH PULL TOOL

ACTIVITY DESCRIPTION

→ Extruding 2D geometry into 3D 3D geometry.
→ Pushing and pulling 3D geometry over an 3D geometry.

IMPORTENCE OF THE TOOL

→ Generating 3D geometry is very easy with the push pull tool.

SELECTION AND USEAGE OF PUSH PULL TOOL

SELECTION

-> we can select the Push Pull tool from default tool bar
or
-> View → Tool Palettes → Large Tool Set → Push Pull
or
-> Just hit key 'P' to select the Push Pull tool

USAGE

→ We can preselect the face you want to extrude or you select it even after selecting the push pull tool.

→ First click on the face you want to extrude and then drag to required length of extrusion or enter the length of extrusion.

→ Push pull tool can also be used over surface of 3D geometries.

→ If you push the geometry over an 3D geometry to the outer side of that 3D geometry it will generate an geometry over it, If you pull it into

the 3D geometry it will punch a hole into the 3D geometry .

→ In Push Pull if the face you going to extrude is separated by a line you can preselect both the faces to extrude them at a time.

→ We double click an new face right after extruding any geometry to extrude that double clicked geometry similar to the previous extrusion.

→ If you hit ctrl key and extrude an face of an 3D geometry it create an another 3D geometry over instead of just extruding it.

APPLICATIONS

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TASKS

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TAG TOOL

ACTIVITY DESCRIPTION

→ Providing tags to the geometries.
→ Using Tag toolbar to modify the tagged geometries.

IMPORTENCE OF THE TOOL

→ With Tag tool we can easily manage large number of geometries in a single model.

SELECTION AND USEAGE OF TAG TOOL

SELECTION

-> Tag tool is available under the tools.
-> View → Tool Palettes → Large Tool Set → Tag tool

USAGE

→ If you work with different geometries such as sphere, Box, cylinders, etc.. you can provide tag name to then based on their shape.

→ Right after you click on the tag tool it's window will show up, you have to select the shape you want to tag, for example if you want to give
  circle tag to all circles in your model you have to click on circle in tag tool window then you can click on all the circle geometries in your model
  this will provide circle tag to all selected geometries.

→ You can also add new shapes in tag windows with an little + icon in top left corner, tag is not limited to shapes you can use tag to differentiate geometries
  in your model with different tags you want .

→ After providing tags to your geometries you can modify the tagged geometries from tag toolbar.

→ You change type of the line of the tagged geometries by clicking on word default near that tag and then you can select the type of line you want.

→ You can toggle on and off the visibility of tagged geometries by clicking on the eye icon near that tag.

→ We can also create folders in tag toolbar by clicking on folder icon on top left corner and we can put one more tags in that folder and then we can modify
   all the tags under the folder at once.

→ If we click on arrow like icon on top right corner of the tag toolbar we can get an option color by tag if you click on it the geometries will be colored
  based on the default color it's tag. We can change color for each tag as we want in tag toolbar.

→ We can also delete the tags by doing right click on tag in tag toolbar then by clicking on delete, After doing that we will get two option such as assign another
  tag and delete all entities, if we click on assign another tag we can assign all the geometries under this tag to any other tag and delete the tag without deleting
  all the geometries under that tag or if we can click on delete all entities both the tag and geometries under those will get deleted.

APPLICATIONS

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TASKS

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DIMENSION TOOL

ACTIVITY DESCRIPTION

→ Adding Dimensional information to the model.
→ Editing the Dimension format as as we like.

IMPORTENCE OF THE TOOL

→ Dimension tool is used to add Dimensional info to the geometry which will let you or client to understand the model easily.
→ Dimension tool mostly preferred
 to present model so anyone can understand the model quite easily.

SELECTION AND USEAGE OF DIMENSION TOOL

SELECTION

-> Dimension tool is available under the tools.
-> View → Tool Palettes → Large Tool Set → Dimension tool

USAGE

→ After selecting the dimension tool you have to select start and end point of a line or just click on a line and then drag
  it to a distance where you want place the dimension and do an another click to place it there.

→ Not only Dimension of the lines we can use dimension tool to mark Diagonal distance, Diameter, Radius etc.

→ If you don't like the default dimension setup you can click on windows → Model info → Dimension, this will open a tool box where you can
  change Font, colour, size and end point type of the dimension as you like.

→ Or else you can click on any this will also open that tool box, you do all the

changes you want there click on update to apply changes to that specific dimension. if want to apply the changes to all the dimensions you click on select all option before clicking on the update button.

→ There is also another option called Align to screen or Align to dimensions line avalible in there, if you click on Align to screen the dimensions move as per view or if you click on Align to dimensions line the dimensions will get aligned to the line and does not mover our view.

APPLICATIONS

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TASKS

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LASSO SELECT TOOL

ACTIVITY DESCRIPTION

→ Select Multiple geometries with Lasso select.
→ Add and Remove geometries from preslected geometries with Lasso select.

IMPORTENCE OF THE TOOL

→ Helps us to select multiple geometries even if geometries in our model located densely.

SELECTION AND USEAGE OF LASSO SELECT TOOL

SELECTION

→ Lasso Select is nested under select tool in default tool bar, if you click and hold on select tool you can switch to Lasso select.

or

→ View → Tool Palettes → Large Tool Set → Lasso select

USAGE

→ Lasso select is only available for the version sketch up pro 2022 and it is not available in lower versions of it.

→ After selecting the Lasso select tool you have to click and hold on a point and you have to move the cursor around the geometries you want to select, this will create an nonlinear line around the geometries and the geometries inside it will get selected.

→ If drag from left to right the geometries inside the line will get selected, if drag from right to left the geometries inside the line along with the geometries touched by the line will get selected.

→ If you click Alt key before selecting you can add geometries to the preselected geometries.

→ If you click Shift + Alt before selecting you can remove geometries from the preselected geometries.

APPLICATIONS

→ Lasso Select tool have lots of application because you can use most of the tools to modify the selected geometry like erasing,extruding,scaling up or down and many other applications is possible with Select tool.

TASKS

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AXES TOOL

ACTIVITY DESCRIPTION

→ Using the axes tool to create a new working plane.
→ Working with the axes options.

IMPORTENCE OF THE TOOL

→ Axes tool help us generate in axes any surface and let us to work in that plane this will reduce a lot of influencing work.

SELECTION AND USEAGE OF AXES TOOL

SELECTION

-> Axes tool is available under the tools.
or
-> View → Tool Palettes → Large Tool Set → Axes tool.
or
-> Right click on axes click the place option.

USAGE

→ The axes tool is used to convert any face of an geometry into an working plane.

→ After selecting the axes tool we have pick an origin point for the axes after that we have specify the red axes by an left click on any line in the face which we want to be red axes and then we have specify green axes with another left click on the line which we want to be green axes, after that it will switch to the new plane that we made and we can work on that axes.

→ After we pick an origin point for the axes we can click Alt key which will let us to switch to the next axes without specifying the previous axes, with this we can specify any two axes in any order as we want.

→ If you do an right click on the axis we can see options such as move, align view, place and reset.

→ Where align view will align the axes to the top of the blue axis which is basically top view of the plane.

→ Place is an shortcut to access the axes tool.

→ Move will let us to move or rotate any axes by entering the required distance or angle.

→ Reset will let us switch into default axes.

APPLICATIONS

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TASKS

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SHADOW TOOL

ACTIVITY DESCRIPTION

→ Adding shadows to the model.
→ Working with the options in shadows window to manipulate the shadow.

IMPORTENCE OF THE TOOL

→ Shadow tool is used to add shadow to the model which will make the model to look realistic.

ACCESS AND USEAGE OF SHADOW TOOL

ACCESS

→ We can access the Shadow window from floating tool bar on the right hand side.

→ If it is not available go to Windows -> Shadow , this will add Shadow to floating tool bar.

→ if We click on the Shadow in that tool bar the Shadow window will open up.

USAGE

→ If click on shadow in the tool bar it will expand and we can see an shadow icon which is used to toggle on and off the shadows in
  your model.

→ We can stimulate shadows in our model which will completely match with real life shadow if model is actually build in real life,
  To genrate accurate shadow we have to use the following options.

→ We can switch to any Time standards based on our location and after that we can set the actual time.

→ Not only that we can also set the Date and Month which will make the shadow more accurate.

→ For example if we set the time as 6.00 am the shadows will fall on left side because in actual the sun will be in east at 6.00 am and
  the shadows will be casted on west which is left side in our model.

→ Specifying month and date will add some accuracy because the rise and fall time of sun differs based on months.

→ Along with these some other options available such as On faces , On Ground and From edges.

→ If you want the shadows to fall on faces of geometries, you have to turn on the On faces option if you don not the shadows to fall on faces
  you have to turn it off.

→ If you want the shadows to fall on working plane you can turn on the On Ground option and if you can turn it off the shadow will only
  fall on your model.

→ You can also toggle on and off the shadows which falls from edges in your model with help of From edges option.

→ We can also increase or decrease the intensity of the shadow by increasing or decreasing the value of light and darkness.

APPLICATIONS

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TASKS

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PAINT BUCKET TOOL

ACTIVITY DESCRIPTION

→ Painting geometries with Paint Bucket tool.
→ Picking color from the geometry already painted.

IMPORTENCE OF THE TOOL

→ With paint bucket we can differentiate geometries based the material used, which will help every one to understand the geometry easily.

SELECTION AND USEAGE OF PAINT BUCKET TOOL

SELECTION

-> we can select the Push Paint Bucket tool from default tool bar
or
-> View → Tool Palettes → Large Tool Set → Paint Bucket

USAGE

→ After selecting the Paint Bucket Pick any color you want and do an click on any face you want to paint with the color you selected.

→ You can also preselect many faces or geometries that you want to paint with same color and then switch to the Paint bucket tool then pick the color
and do an click on the selection to paint all the selected geometry at once.

→ You pick the color from a geometry by clicking and holding crtl key on that geometry. The color we picked from that geometry can be used to color
other geometries.

APPLICATIONS

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TASKS

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OUTLINER

ACTIVITY DESCRIPTION

→ Manage groups and components.
→ Toggle on and off the visibility of the groups and components from outliner

IMPORTENCE OF THE TOOL

→ Outliner is used to easily manage models with large numbers of groups or components.

ACCESS AND USEAGE OF OUTLINER

ACCESS

→ We can access the Outliner from floating tool bar on the right hand side.

→ If it is not available go to Windows -> outliner , this will add Outliner to floating tool bar.

→ if We click on the outliner in that tool bar the outliner window will open up.

USAGE

→ If you click on outliner it will expand and all the groups and components will be listed in it.

→ We can use it to manage the all the groups and components from there.

→ We can toggle on and off the visibility of the groups and components from outliner.

→ We can also maintain the the hierarchy of the model in outliner.

→ Outliner is generally used to manage models if it have large numbers of groups or components.

APPLICATIONS

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TASKS

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MOVING THROUGH MODEL

ACTIVITY DESCRIPTION

→ Using Position Camera, Look Around and Walk to look around the model in actual scale.

IMPORTENCE OF THE TOOL

→ It helps us look the actual view of an model by looking and walking around on model itself.

ACCESS AND USEAGE OF MOVING THROUGH MODEL

ACCESS

→ For Moving Through Model we are going use tools available under the camera such as
  → Position Camera,
  → Look Around and
  → Walk

USAGE

→ After selecting the Position Camera tool we have pick a point on the model from we going to look around or walk from, after Positioning we
  can also enter our height to get accurate view.

→ After Positioning the camera we can select Look Around tool to look around the model from the specified point by moving mouse in the

required direction.

→ After Positioning the camera we can select Walk tool to move around the model by clicking and holding left key in mouse along with moving
it in desired direction we want to move.

→ In default we can not move through the solid geometry or faces if you want to do that you have to hit ctrl key.

APPLICATIONS

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TASKS

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SOFTEN AND SMOOTH EDGES

ACTIVITY DESCRIPTION

→ Soften and Smooth Edges of the geometry with help of Soften and Smooth Edges window.

IMPORTENCE OF THE TOOL

→ We can perform soft or smooth operation seperatly only with the Soften and Smooth Edges window.

ACCESS AND USEAGE OF SOFTEN AND SMOOTH EDGES

ACCESS

→ We can access the Soften and Smooth Edges window from floating tool bar on the right hand side.

→ If it is not available go to Windows -> Soften and Smooth Edges, this will add Soften and Smooth Edges to floating tool bar.

→ if We click on the Soften and Smooth Edges in that tool bar the Soften and Smooth Edges window will open up.

USAGE

→ we can Soften and Smooth Edges with help of Erasser tool but with the help of Soften or Smooth Edges seprately and we can also
  change the angle between normals to get exact Smoothness we want.

→ We have scale to increase or decerease the angle and two check boxes such as Soft Edges and Smooth Edges.

→ At first we have to select the geometry and then we have to enable any one of the check boxes or both of them as per need, after can change
  the angle from the scale to get exact smoothness.

→ If you only enabled the soft edge the edges will get softened but the lines will be visible.

→ If you only enabled the Smooth edge the lines will be hidden but the edges will be visible

→ If you enabled them both both the edges and lines will be smoothed.

APPLICATIONS

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TASKS

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COMPONENTS

ACTIVITY DESCRIPTION

→ Creating an component for repeatedly occurring geometries and using them in the model.

IMPORTENCE OF COMPONENTS

→ Components are basically a group geometry which occurs more than one time in the model and if you edit any one component in your model
  all the similar components will be updated with the changes that we do to that single component.

SELECTION AND USEAGE OF COMPONENTS

SELECTION

→ To make a geometry into Component we to select that geometry at first, then we have to do an right click and click on Make Component.

USAGE

→ After clicking on Make Component an tool bar will open from that tool bar we have to give dentition for that component the dentition
  must have to be unique.

→ We can also give description to the Component but it is not necessary.

→ If you copy an component all the copied components will share the same definition and instance.

→ If you change the definition of a component all the definition of all the occurrence of that component will be changed.

→ But you can give different instances to occurrence of the components separately.

→ After that we have an option called Glue To which let as to select which face has to attached to cursor such as vertical, horizontal or inclined
  while placing that component into model in future from the components window.

→ Next to it we have an option called Set component axis which will let us to set the component axis to the component.

→ Along with these we have three check boxes in the tool bar such as Cut Opening , Always face camera and Shadow face sun.

→ If Cut Opening is turned on the component will cut opening to the geometry it stick to.

→ If we turn on Always face camera the component will always face the camera even we move around the model.

→ If Shadow face sun is turned on shadows will be casted only based the main alignment of the component.

→ If Shadow face sun and Always face camera is turned on the shadows will move based on the view.

→ After that we can copy the component and place it in all the required places in our model and if we want change any dimension in all those
  components we can change it in any one of those component and all other component will get updated with that changes.

APPLICATIONS

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TASKS

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COMPONENTS WINDOW

ACTIVITY DESCRIPTION

→ Managing, Adding and Editing components from the Components window.

IMPORTENCE OF THE TOOLBAR

→ With Help of components window we are able to easily manage the geometries which reoccurs in our model a lot.

ACCESS AND USEAGE OF COMPONENTS WINDOW

ACCESS

→ We can access the Components window from floating tool bar on the right hand side.

→ If it is not available go to Windows -> Components, this will add Components to floating tool bar.

→ if We click on the Components in that tool bar the Components window will open up.

USAGE

→ If you click on component window from floating tool it will expand and show the components which are available along options like Edit, Select and Statics.

→ The Select option will help you to Select the component and we can place the selected component in our model.

→ The Edit will help you to edit the component.

→ The Statics will let you to see the info about the component.

→ If you click on the home icon in the component window you see the list of components used in your model.

→ You can click on the down icon available in the component window to get all the components you have in your system.

APPLICATIONS

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TASKS

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EDGES AND FACE STYLES

ACTIVITY DESCRIPTION

→ Modifying the Edge styles.
→ Modifying the Face styles.

IMPORTENCE OF

→ It helps us switch between Edges and Face styles that we are comfortable to work with and let as present our model with different
styles as per need.

ACCESS AND USEAGE OF EDGES AND FACE STYLES

ACCESS

→ For changing Edges styles we are going use options available under the view → Edge Style, such as
- → Edges,
- → Back Edges,
- → Profiles,
- → Depth cue and
- → Extensions.

→ To Modify Face styles we are going use options available under the view → Face Style, such as
- → X-Ray,
- → Wire frame,
- → Hidden line,
- → Shaded,
- → Shaded with textures and
- → Monochrome.

USAGE

Edge Style

→ If you want to turn hide the edges of the geometry you can turn off the Edge.

→ By turning on the Back Edges we can make the edges hidden under the face to visible in doted line.

→ To hide the Outline of the geometry you have to turn of the profile.

→ If you turn on the Depth cue the lines and edges near the point of view will get darker and the darkness fades away if the lines and edges located
away from point of view.

→ If extension is turned on all the lines will get extended a bit at it end point.

Face Style

→ X-Ray option will make the geometries translucent and let you to see through model.

→ Wire frame is used to turn off all faces in your geometry.

→ Hidden line will turn the geometry color into the ground color.

→ Shaded will make all the faces with texture into shaded color.

→ Shaded with textures will let you to bring back the texture to the face.

→ Monochrome will make all the front faces into white and faces which face backside into gray.

APPLICATIONS

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TASKS

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LOCKING GEOMETRY

ACTIVITY DESCRIPTION

→ Locking geometry.

IMPORTENCE OF LOCKING GEOMETRY

→ Locking an geometry will make the geometry uneditable so we can lock any finished geometry in our model so it will not be disturbed during further modeling.

SELECTION AND USEAGE OF LOCK TOOL

SELECTION

-> Right click → lock
        (for Groups)
-> Select the group → Entity info -> lock icon

USAGE

→ Select the geometry you want lock and do an right click and click on lock.

→ Once a geometry is locked we can not edit it until the geometry is unlocked if you click on locked geometry an red box will appear to indicate that the
  geometry is locked.

→ To unlock the geometry do a right click on the locked geometry and click unlock.

→ To lock and unlock group you have select the group and go to entity info and toggle on and off the lock icon in there.

APPLICATIONS

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TASKS

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MATERIAL WINDOW

ACTIVITY DESCRIPTION

→ Accessing, Creating and Editing Material colors from the Material window.

IMPORTENCE OF THE TOOLBAR

→ With Help of Material window we are able to easily manage the Material colors.

ACCESS AND USEAGE OF MATERIAL WINDOW

ACCESS

→ We can access the Material window from floating tool bar on the right hand side.

→ If it is not available go to Windows -> Material, this will add Material to floating tool bar.

→ if We click on the Material in that tool bar the Material window will open up.

USAGE

→ If you click on Material window from floating tool it will expand and show the material colors used in the model.

→ We can such from In Model to access many other material colors.

→ Above the In Model drop down we have edit which can used to edit the available material colors as per our need.

→ In Material window we can see square with '+' which if you click on it you can create an material color from scratch.

APPLICATIONS

→ Creating and Editing material colors for presenting our model with accurate colors.

TASKS

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ENTITY INFO WINDOW

ACTIVITY DESCRIPTION

→ Accessing the information of the geometries.
→ Editing geometry from Entity Info window.

IMPORTENCE OF THE TOOLBAR

→ Entity Info window is helps to access the information of any selected geometry and we can do some few modeling from Entity Info window.

ACCESS AND USEAGE OF ENTITY INFO WINDOW

ACCESS

→ We can access the Entity Info window from floating tool bar on the right hand side.
→ if We click on the Entity Info in that tool bar the Entity Info window will open up.

USAGE

→ After expanding the Entity info window in tool bar we have to select a geometry.

→ The Entity info will have soft and smooth check boxes which we can use to soft and smooth lines or edges.

→ The Entity info will also have toggles such as Hide, Lock, Receive shadow and Cast shadow.

→ A small eye icon in the Entity info window is the toggle to hide and unhide the selected geometry.

→ Lock icon in it is the toggle to lock and unlock selected group or component.

→ Next to lock icon we have icon to toggle on and off to decide if the selected geometry can receive shadow on it from other geometry.

→ After that we have small shadow icon to toggle on and off whether the selected geometry can cast shadow or not.

→ If we select an line or an edge from our model we can see what tag is it under and also the length of that line or edge that we selected.
  we can also change the length of the selected line or edge from Entity info window itself.

→ If you select more than one line we can see the cumulative length of those lines but we can not edit cumulative length.

→ When you select an face we can see the tag it is under and area of that face. If we select more than one face we can see the cumulative area of
  the selected faces.

→ If you select an lose geometry like box something which is not made into a group you can only get tag details of it and you can only perform
  operations like Hide, Receive shadow and Cast shadow from the entity info window.

→ If group is selected we can see and edit instance and Type of that group along with other things we saw before.We can also see the volume of
  selected group if it is a solid geometry.

→ For a component We have definition instead of type and we also have advanced attributes as extra everything else is similar as group.

→ We can provide additional info to the components if we expand the advanced attributes.

APPLICATIONS

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TASKS

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FOG WINDOW

ACTIVITY DESCRIPTION

→ Generating Fog in our Model.

IMPORTENCE OF THE TOOLBAR

→ With Help of Fog window we are able to add fog in our model which will present our model more realistic.

ACCESS AND USEAGE OF FOG WINDOW

ACCESS

→ We can access the Fog window from floating tool bar on the right hand side.

→ If it is not available go to Windows -> Fog , this will add Fog to floating tool

bar.

→ if We click on the Fog the fog window will open up.

USAGE

→ In Fog window we have an check box called Display fog, we can use it to turn on or off the fog in our model.

→ We have an Distance scale in Fog window which indicates the distance from the view point and it ranges between zero to infinity.

→ The scale have two pointers in it. The pointer at the top is used set the distance from the view point where the fog have to begin.

→ The bottom pointer is used set the distance from the view point where have to completely hide the geometry.

→ The Fog will begin in our model from point we specified in top pointer and it will start to increase gradually from there and
  it completely hide the geometry from point specified with bottom pointer.

→ We can also change the color of fog from the Fog window.

APPLICATIONS

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TASKS

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INFERENCING WHILE DRAWING LINES

ACTIVITY DESCRIPTION

→ Drawing lines with help of Inferencing.

IMPORTENCE OF INFERENCING

→ Inferencing will let you to draw with reference to axes or other geometries.

COMMON INFERANCES

→ Green dot indicates the end point of the line.

→ Sky blue color dot indicates the mid point of the line.

→ Edges will be indicated with red squared dot.

→ Faces will be indicated with blue diamond shaped dot.

→ Red cross symbol indicates Intersection in our model.

→ Axes will be indicated by the color of axes you working on.

USAGE

→ While drawing if the line parallel is to any axes the line will change to that axes color until the line is finished this indicates the axes in which the line is drawn.

→ After specifying the origin point of the line if you click on right arrow key the line will lock to red axe and you only can draw in that axes.

→ Like that if you hit left arrow key while drawing the line it will lock you on green axis and you can only draw in that axes.

→ If you hit up arrow key while drawing the line it will lock you on blue axis and you can only draw in that axes.

→ While drawing line over any line or edge you can click down arrow key which will lock you parallel to axes of that line.

APPLICATIONS

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TASKS

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INSTRUCTOR WINDOW

ACTIVITY DESCRIPTION

→ Using Instructor window to understand the Usage of different tools.

IMPORTENCE OF THE TOOLBAR

→ Instructor window will be more helpful if you are new to sketch up, it will let you understand the basics of all tool.

ACCESS AND USEAGE OF INSTRUCTOR WINDOW

ACCESS

→ We can access the Instructor window from floating tool bar on the right hand side.

→ If it is not available go to Windows -> Instructor, this will add Instructor to floating tool bar.

→ if We click on the Instructor in that tool bar the Instructor window will open up.

USAGE

→ After opening the instructor window you can click on any tool and see the basic usage of that tool displayed as animation in instructor window along with commands available
for that tool.

→ The instructor can switch to any tool that you switch to.

→ The instructor window is mostly used by users who are new to sketch up,.

APPLICATIONS

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TASKS

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INTERSECTING FACES

ACTIVITY DESCRIPTION

→ Intersecting faces of geometries.

IMPORTENCE OF INTERSECTION

→ It will help us to cut openigs into geometries easily.

SELECTION AND USEAGE OF INTERSECTING FACES

SELECTION

-> Right click → Intersecting Faces → with model
or
-> Right click → Intersecting Faces → with selection

USAGE

→ For Intersecting faces we first have to select the geometries which are intersecting and then ight click → Intersecting Faces → with model or with selection.

→ If the geometries we are intersecting are groups both the with model and with selection will do the same function, it will generate an edge at at the point Intercetion but the edge will not be connected those geometries and it will not cut those geometries at the point of intersection.

→ If one the intersecting is group and another one is lose geometry again with model and with selection will do the same function,it will generate an edge at at the point Intercetion and it will cut the loose geometry at the point of intersection.

→ If both the intersecting geometries are loose geometry and if you select one of the geometry and click on in model it it will generate an edge at Intercetion

and it will cut only the geometry at the point of intersection. If select both of the intersecting geometries and click on with selection it it will generate an edge at the point Intercetion and it will cut both the geometries at the point of intersection.

APPLICATIONS

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TASKS

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HIDE

ACTIVITY DESCRIPTION

→ Hiding geometries.
→ Hiding groups and components.

IMPORTENCE OF HIDE

→ Hiding geometries will help you to create an new geometry in your model without other geometries interfering your view while modeling it.

SELECTION AND USEAGE OF HIDE TOOL

SELECTION

-> Right click → Hide
or
-> Entity info → Hide
or
→ Tag or Outliner Window → Hide (for group and components)

USAGE

→ First we have to select the geometry we want hide then we have do a right click and click on Hide this will hide the selected geometry.

→ After selecting the geometry we can also go entity info window an click on eye icon to hide and unhide geometry.

→ To unhide Edit → Unhide → last , this only unhide the last hidden geometry.

→ For unhiding all geometries View → Hidden Geometry , this make all the hidden geometry visible as dotted geometry after that you can select all
  those geometry and do right click → unhide.

→ To Hide and Unhide groups and components we can go to Tag or Outliner window , in there all the components and groups will be listed and each of them
  will have the Eye icon which can be used to hide and unhide them.

APPLICATIONS

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TASKS

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FOLLOW ME

ACTIVITY DESCRIPTION

→ Generating 3D geometry over a line or Edge.

IMPORTENCE OF FOLLOW ME

→ Follow is useful to generate complex 3D geometry easily.

SELECTION AND USEAGE OF FOLLOW ME TOOL

SELECTION

-> Tools → Follow Me

USAGE

→ First we have to create a profile on a line or Edge that we want to be followed over the line.

→ Next to that we have to select the line then go to Tools and click on follow up.

→ After that click on the face of your profile then do a right click and click on Edit group followed by clicking on your profile.

→ This will extrude that profile along the line to create a 3D geometry on it.

→ If you do not want that line or edge we use do follow up with our 3D geometry we can do a right click and click on Close group before leaving the
follow up tool.

APPLICATIONS

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TASKS

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CRAETING AND MODELING MESHES WITH SAND BOX TOOL

ACTIVITY DESCRIPTION

→ Generate mesh with counter tool.
→ Create mesh with ordered mesh tool.
→ Add details to mesh with Smoove tool.
→ Use Detail tool to add detail to mesh.
→ Use smoove tool to pull up or crave an geometry over mesh.
→ With the help of Drape tool place an geometry over mesh without deforming the mesh.

IMPORTENCE OF

→ Sand Box tool help us to easily generate and edit meshes to make any complex surface that we need.

SELECTION AND USEAGE OF SAND BOX TOOLS

SELECTION

-> View → Tool Pallets → Sand Box

-> This will provide a small toolbar with following tools

→ Contour
→ Ordered Mesh
→ Smoove
→ Detail
→ Stamping
→ Drape

USAGE

CONTOUR AND ORDERED MESH

→ Contour and Ordered Mesh are tools in Sand box which is used to generate a mesh.

→ Contour is the first tool in sand box tool bar for using contour tool we need a series or linear or nonlinear lines as a contour.

→ First we have to select the contour lines and the we have to click on contour tool, this will create a mesh as per the contour lines.

→ In contour the edges of the near by lines are stitched randomly to generate the mesh you can see it if unhide the hidden geometry.

→ After Generating the mesh we can separate the contour line from the mesh we can delete contour if we do not need it.

→ Ordered Mesh is the second tool in sand box tool. In Ordered Mesh we do not need contour lines for creating mesh.

→ After selecting Ordered Mesh we can enter the grid size we want, then we have specify the origin point of the mesh along height and length of the mesh.
we can specify height and length by entering it or with by left click with mouse in our model for both height and length.

→ This will generate an ordered mesh with the length and height we specified.

SMOOVE

→ Smoove is Third tool in sand box tool bar it is used to edit an mesh.

→ At first we have to double click on the mesh to select it along with access lines the mesh is made off. After that we have click on smoove tool
right after selecting the smoove tool a circle will get attached to our cursor we can change the size of the circle by entering the required radius.

→ After that we have click on the mesh which will highlight all edges inside the circle, the dots in the center will be big and it gets smaller gradually
through out the end.

→ After that you can drag the cursor to required height or we can simply enter the height, the edges with biggest dot at the center will move to exact
height specified while height reduces as size of the dot.

→ In default the smoove only let you to move vertically, if your mesh is inclined and you want move your mesh perpendicularly you can hit shift that
will let you to move your mesh perpendicularly.

→ You can also select few grids from the mesh, then you can select the smoove tool and enter the required height to move the all selected grids to
same height.

DETAIL

→ Detail is the sixth tool in sand box tool bar it is also used to edit the mesh.

→ At first we have to double click on the mesh, then we have to select the detail tool and then select any end point, edge or face from the mesh and
drag it to the required height or enter the height you need

STAMPING

→ Stamping is fourth tool in sand box tool bar, it is used to pull up or cut down a mesh with an geometry.

→ After selecting the stamping tool we have to select the geometry we are going to stamp on the mesh, then we have select the mesh.

→ Next we can push the geometry up to crave that geometry over the mesh or pull it down to cut the mesh with that geometry.

DRAPE

→ Drape is fifth tool in sand box tool bar, it is used to put an geometry over an mesh without deforming the mesh.

→ First select the Drape tool and click on the geometry then click on the mesh.

→ This will place the geometry over the mesh and deforms the geometry as per the shape of the mesh.

APPLICATIONS

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TASKS

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CRAETING AND MODELING MESHES WITH SAND BOX TOOL

ACTIVITY DESCRIPTION

→ Generate mesh with counter tool.
→ Create mesh with ordered mesh tool.
→ Add details to mesh with Smoove tool.
→ Use Detail tool to add detail to mesh.
→ Use smoove tool to pull up or crave an geometry over mesh.
→ With the help of Drape tool place an geometry over mesh without deforming the mesh.

IMPORTENCE OF

→ Sand Box tool help us to easily generate and edit meshes to make any complex surface that we need.

SELECTION AND USEAGE OF SAND BOX TOOLS

SELECTION

-> View → Tool Pallets → Sand Box

-> This will provide a small toolbar with following tools

→ Contour
→ Ordered Mesh
→ Smoove
→ Detail
→ Stamping
→ Drape

USAGE

CONTOUR AND ORDERED MESH

→ Contour and Ordered Mesh are tools in Sand box which is used to generate a mesh.

→ Contour is the first tool in sand box tool bar for using contour tool we need a series of linear or nonlinear lines as a contour.

→ First we have to select the contour lines and the we have to click on contour tool, this will create a mesh as per the contour lines.

→ In contour tool the edges of the near by lines are stitched randomly to generate the mesh, you can see it if you unhide the hidden geometry.

→ After Generating the mesh we can separate the contour line from the mesh and we can also delete contour if we do not need it.

→ Ordered Mesh is the second tool in sand box tool. In Ordered Mesh we do not need contour lines for creating mesh.

→ After selecting Ordered Mesh we can enter the grid size we want, then we have specify the origin point of the mesh along height and length of the mesh.
we can specify height and length by entering it or by left click with mouse in our model for both height and length.

→ This will generate an ordered mesh with the length and height we specified.

SMOOVE

→ Smoove is the Third tool in sand box tool bar it is used to edit an mesh.

→ At first we have to double click on the mesh to select it along with the lines the mesh is made off. After that we have click on smoove tool

right after selecting the smoove tool a circle will get attached to our cursor we can change the size of the circle by entering the required radius.

→ After that we have to click on the mesh which will highlight all edges inside the circle with dots, the dots in the center will be big and it gets smaller gradually through out the end.

→ After that you can drag the cursor to required height or we can simply enter the height, the edges with biggest dot at the center will move to exact height specified while height reduces as per the size of the dot .

→ In default the smoove only let you to move vertically, if your mesh is inclined and you want move your mesh perpendicularly you can hit shift that will let you to move your mesh perpendicularly.

→ You can also select few grids from the mesh, then you can select the smoove tool and enter the required height to move all the selected grids to same height.

DETAIL

→ Detail is the sixth tool in sand box tool bar it is also used to edit the mesh.

→ At first we have to double click on the mesh, then we have to select the detail tool and then select any end point, edge or face from the mesh and drag it to the required height or enter the height you need.

STAMPING

→ Stamping is the fourth tool in sand box tool bar, it is used to pull up or cut down a mesh with an geometry.

→ After selecting the stamping tool we have to select the geometry we are going to stamp on the mesh, then we have to select the mesh.

→ Next we can push the geometry up to crave that geometry over the mesh or pull it down to cut the mesh with that geometry.

DRAPE

→ Drape is the fifth tool in sand box tool bar, it is used to put an geometry over an mesh without deforming the mesh.

→ First select the Drape tool and click on the geometry then click on the mesh.

→ This will place the geometry over the mesh and deforms the geometry as per the

shape of the mesh.

APPLICATIONS

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TASKS

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DEFORMING GEOMETRY WITH PINS

ACTIVITY DESCRIPTION

→ Importing image as a texture and deforming it with the help of pins.

IMPORTENCE

→ With the help of Pins we can deform any image and use it as an texture.

SELECTION AND USEAGE OF ---- TOOL

SELECTION

-> Right click on image → Texture → Position

USAGE

→ First we have to create an face to place the image.

→ Then go to file -> Import -> Select an Image -> Use as Texture -> Import then place the image over the surface.

→ After that right click on the image -> Texture -> Position.

→ Now pins will appear over the end point of the image then right click on the pins and then turn fixed pins.

→ Then hold on a pin and drag it in or out to scale up or scale down the image.

→ You can also stretch the image by dragging the pins if you turn of the fixed pins.

→ You can also move the pins and place it anywhere by another click.

APPLICATIONS

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TASKS

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SEARCH TOOL

ACTIVITY DESCRIPTION

→ Use search tool to find any tool.

IMPORTENCE OF SEARCH TOOL

→ Search tool lets you to easily access any tool if you new to sketchup.

SELECTION AND USEAGE OF SEARCH TOOL

SELECTION

→ Search tool is available in Main tool bar.

USAGE

→ After You click on search tool an floating text box in open up you where you can

search any tool.

→ If you forgot the actual name of any tool you can use any relative word to search that tool , for example you can search like extrude
  which will list you tools like push pull and follow me.

→ You can access any tool from the search tool bar if you do not where tool is available.

APPLICATIONS

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TASKS

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STYLES WINDOW

ACTIVITY DESCRIPTION

→ Selecting and Editing different styles from the styles window.

IMPORTENCE OF THE TOOLBAR

→ With Help of styles window we are able to easily select or edit any style which is available in our system.
ACCESS AND USEAGE OF COMPONENTS WINDOW

ACCESS

→ We can access the Styles window from floating tool bar on the right hand side.

→ If it is not available go to Windows -> Styles, this will add Components to floating tool bar.

→ if We click on the Styles in that tool bar the Styles window will open up.

USAGE

→ Styles in sketch up is about how the information in your model is displayed.

→ In styles window you can see the style used in our model along with options like select, Edit, Mix.

→ The Select option will let you to select any available styles in your system.

→ While selecting you can see styles with small green stop watch icon those styles are quick styles.

→ You can switch to so many different styles along different color style sets.

→ Edit option lets you to edit any available style with so many options.

→ The Mix option lets you mix two or more styles to get the required style.

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APPLICATIONS

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TASKS

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3D WAREHOUSE

ACTIVITY DESCRIPTION

→ Downloading model from 3D warehouse.

IMPORTENCE OF 3D WAREHOUSE

→ The 3D warehouse is an online store from where you access lots of models which can be downloaded and used in your model.

SELECTION AND USEAGE OF 3D WAREHOUSE TOOL

SELECTION

→ 3D Warehouse tool is available in default tool bar.

USAGE

→ If you click on 3D Warehouse an website will open up and you see lots models and geometries in it.

→ You can search for any model you want with the search tool box and you can also sort your search result.

→ Models under the product are uploaded by the manufacturers.

→ Models which are under the model are uploaded by sketch up users.

→ Models under the Collections are uploaded by the members of 3D warehouse itself.

→ If you click on any model you will get options like Add to favourite, save to folder and download.

→ If you click on download an small popup will appear and ask you to load the model into your working plane, if you click yes the model will
be loaded into the working plane, if you click no the model will be saved into your system.

APPLICATIONS

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TASKS

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IMPORTING 2D AND 3D FILES

ACTIVITY DESCRIPTION

→ Importing 2D and 3D geometries into our model from the system.

IMPORTENCE OF IMPORTING 2D AND 3D FILES

→ With Import tool we can import and use 2D or 3D geometries from our system into our model which will reduce a lots of time.

SELECTION AND USEAGE OF IMPORTING 2D AND 3D FILES TOOL

SELECTION

-> File → Import.

USAGE

→ After clicking Import an window will popup with list of models you have in your system.

→ For importing first we have to specify the format of the file we are going to import, there are several formats available for 2D and 3D files.

→ After specifying a format you can only select those models under that format.

→ If you are importing 3D file you can configure many options which is used to specify how to import your file.

→ You can import 2D file as an image, as an texture or as an new matched photo.

→ After selecting the required options and format click on the import which will load the file into your model.

APPLICATIONS

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TASKS

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GEO LOCATION

ACTIVITY DESCRIPTION

→ Importing Geo location into our model.

IMPORTENCE OF GEO LOCATION

→ With the help of Geo Location we can easily import any actual location into your model and you can work with it.

SELECTION AND USEAGE OF GEO LOCATION TOOL

SELECTION

-> File → Geo Location → Add Location.

-> File → Geo Location → Add More Imagery.

USAGE

→ After clicking on Add location an window with satellite map of earth will open up.

→ We can search any required place or move through the map to get the required place.

→ Zoom in and Zoom out options are available to select the exact location you want. you can see an square box while zooming in or out, the location
  inside the box is the selected area and the area which are highlighted with blue color are areas with high resolution.

→ After setting the correct region you have to click on select region,then select the provider you want digital globe is free and HI-RES Naermap is paid provider.

→ Right after selecting provider you have to click on import.

→ The location will be imported into our model after that but it will locked, if you want to edit it you have unlock it.

→ You can also change the imported model into terrain by File -> Geo Location -> Show Terrain

→ You also add another location into your model with reference to previously

imported location.

→ After clicking on Add More Imagery the window with satellite map of earth will open up with the previous imported location, you can move and
  select near by location you want to import and click on import.

→ The location you selected will be adjusted and overlapped with the previous imported one to get the exact location.

APPLICATIONS

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TASKS

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EXPORTING

ACTIVITY DESCRIPTION

→ Exporting your model as 2D.
→ Exporting your model as 3D.

IMPORTENCE OF EXPORTING

→ Exporting helps you export you model in 2D or 3D file and use them in any other models by importing it in that model.

SELECTION AND USEAGE OF EXPORTING TOOL

SELECTION

-> File → Export → 2D
-> File → Export → 3D

USAGE

→ We can export our model in 2D or 3D as we need.

→ With 2D export you can export model as simple picture, where in 3D you can export your model as 3D with all the information of the model with
the file itself.

→ For exporting your model in 2D you have to set the camera view for model first.

→ Then click File → Export → 2D, this will open up an export window where you can specify location, name and format for exporting your model.

→ Each format will have different set of options.

→ After specifying all above things click on export.

→ Exporting model in 3D does not need any camera view set up you can directly go to File → Export → 3D, this will also open an export window
where you can specify location, name and 3D format for exporting your model.

→ Each 3D format will have different set of options.

→ After specifying all above things click on export.

→ We can export our model in any format we want but we have to use the same format settings will importing it.

APPLICATIONS

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TASKS

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ANIMATION BASICS AND IMPORTING

ACTIVITY DESCRIPTION

→ Creating and Exporting animation.

IMPORTENCE OF ANIMATION

→ Animation lets you to present your model as animation so normal people can easily understand the model.

SELECTION AND USEAGE OF ANIMATION AND Export TOOL

SELECTION

ANIMATION

-> View → Animation
- → Add Scene
- → Update Scene
- → Previous Scene
- → Next Scene
- → play
- → Settings
- → Delete Scene

IMPORTING ANIMATION

-> File → Export → Animation

USAGE

→ First we have to set the camera angle to get exact view we want then we have to go to view → Animation and click on Add Scene, this will be added as scene 1 we can see it in under default tool bar or in floating tool bar under scenes.

→ We can add as many as scenes we need with many different camera angles for our animation.

→ After that go to View → Animation and click on Play, this will play an animation with the scenes we added one by one.

→ We can Update any scene we added by going to that scene by clicking on it from default tool bar and go to View → Animation and click on Update scene this will let you to make changes to that scene.

→ Previous scene and Next Scene in Animation lets you to go to previous and next scenes respectively.

→ To Delete any scene select the scene go to View → Animation and click on Delete scene to delete that scene.

→ We can also remove an scene from animation with out deleting from scenes window, in scenes window click on the + icon with down arrow symbol on right side
  and uncheck the include in animation checkbox.

→ Settings in Animation let you to change the transition time between scenes, remove transition time and change the play time of scenes.

→ We can also export the animation we created by going to File → Export → Animation.

→ After clicking on the animation an window will popup where you can specify location for exporting the animation, format for the animation such as Mp4,
  jpeg, png or gif, width and height of pixels, frame rate, etc..

→ After specifying all the required things click on export to export the animation.

APPLICATIONS

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TASKS

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