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**AlanH Consulting LISP programs June 2023**

**General instructions**

To use the programs just save them to a directory that is included in your Autocad search path.

If you need more information how to do this see "Saving **AlanH Consulting** lisp files.doc".

These lisp programs are accessed via the following methods from within AutoCAD.

The majority of programs that you will use often have been set-up to load automatically from a menu or toolbar and run on 1st load, some can be ran again you need only type a short key sequence to re-use eg **"XP"**

**AlanH Consulting** can help making a menu, toolbar or ribbon to run the programs.

**Manual loading of program**

Type **Appload**,

Followed by choosing the lisp directory, where all the files are saved

Pick the required program,

Pick "Load" then "Close"

**How to use**

Some programs start straight away and you just follow the prompts or fill in user values. Others will give you a message on the required keyboard entry so program can be repeated again without reloading.

The programs below, names are indicated as well as their shorthand keystroke if available.

**Contents**

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The following program(s) are provided "as is" and with all faults.

Alan J. Houston DOES NOT warrant that the operation of the program(s) will be uninterrupted and/or error free. The author assumes you are an experienced Autocad, Briscad and Autolisp user and or programmer. AlanH Consulting can provide additional help and customisation but this service may require payment.

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Not responsible for errors due to changes with or without notice.

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**Research**

Information used for these programs was also obtained from the following resources:

www.cadtutor.net

www.augi.com

Lee-mac www.lee-mac.com

www.theswamp.org

Alan J. Thompson (alanjt) Contact: alanjt @ TheSwamp.org, CADTutor.net

www.autodesk.com

**Running the programs**

The majority of commands can be accessed from a pull down menu



Alternatively some options can be selected from a customised toolbar



Alanh Consulting can provide this service for you.

The majority of code uses DCL dialogue input so the user’s vision is kept on the screen rather than on the command line and when possible default values are pre defined so user can use mouse to pick rather than keyboard entry.

**2 Fillets**

Do 2 fillets to a tee line intersection



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**Allbylayer**

Change non complex objects to **Blayer** a simple routine that prompts to select objects to be changed. Note for simple objects only.

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**Add an attribute to block**

Add a block attribute to an existing block with or without attributes.

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**Add atts to att**

Add 2 block attributes and put the value as a field into the 3rd attribute.

**Add dimension values put result into mtext**

Adds selected dimensions reading measurement and sums them into a new mtext.

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**Add edge rectang**

Adds a new rectang from existing rectang selected side with a width.



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**Add holes to rectang**

Select a rectang and add holes.



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**Add layout next to existing**

Copy a layout and insert new one next to it, rather than at end.

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**Add to levels + Add to levels multi**

Add or subtract an amount from existing text values.

Single or multiple selection of text.

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**Add pits drain**

Add a circle to end of lines for import into the DRAINS software.



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**Alan excel Library**

Multiple functions for experienced lisp users to interact with Excel directly.

Examples, Open file, Get put & cells, Select range for import.

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**Alignment-pline**

Recreate Civ 3d Alignments as plines arcs and lines.

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**Alignment label-1**

Reads a Civ3D alignment and gets its properties.

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**Allbylayer**

A simple set objects to Bylayer.

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**Append text**

Adds a prefix to text.

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**Arc between 2 lines**

 Pick 2 lines and add an arc without erasing lines.

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**Arc-to chords**

Converts an arc to a equal length of chords, just enter how many chords required and pick arc's.



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**Arc-to multi arcs**

Converts an arc to an equal length of arcs, just enter how many arcs required and pick arc.

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**Arc ends to line**

Adds an arc to end of a line or pline.



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**Att on off**

Select a block attribute and turn the visibility to off.

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**Att to table cell**

Select a block attribute then select a cell in a table and place value as a field.

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**Autocad-to-word**

Advanced programming, select text and send to Word.

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**Batter ticks**

This inserts batter ticks between 2 plines using a predefined tick block.



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**Block count by layer**

As name implies counts blocks based on a selection and counted by layer name.

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**Block insert**

This is a simple insert all blocks in the current drawing, just enter a spacing and maximum number of rows. the blocks are inserted in a grid pattern.

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**Block-att-into table**

This is a more advanced version of counting blocks, it looks at the block name and attributes, it counts down to five levels of attributes. The block can have multiple attributes but only the 1st five are used in the counts.

"Door" "Black" "Silver handle" 5,

"Door" "Black" "Gold handle" 8

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**Block image into table**

You can pick a block for placement of the block in a table cell.



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**Block insert**

It is intended to be a library function and be either loaded using a simple defun or autoloaded on start up, if you have any questions please contact **AlanH Consulting** and we can assist. ..................................................................................................................

**Block shortcut insert**

This routine allows you to type "**B**" then block name rather than using" Insert", example **b0001** will insert block "**0001”**

It is intended to be a library function and be either loaded using a simple defun, menu option or autoloaded on start up, if you have any questions please contact **AlanH Consulting** and we can assist. Once loaded can be repeated as often as required.

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**Blockscale**

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Changes the global scale of blocks, enter the new scale and select blocks to be changed.

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**Blockscalexyz**

Changes the X Y and Z scale of blocks, enter the new scales and select blocks to be changed.



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**Box**

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Draw a simple box and dimensions it at the same time.

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**Box 4 holes dimensioned**

Draws a rectang with 4 holes based on variables.



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**Brg dist**

Draw continuous lines by entering distance and bearing.



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**Change hatch pat**

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This allows you pick a hatch pattern and change the properties of it for selected occurrences, including changing the actual pattern. During selection the "All" option can be used.

Useful where you want to change one hatch parameter but for all selected hatch's.

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**Carpark**

This is a simple car park, line marking and allows for various angles and bay widths.

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**Centroid**

Simple get centroid of a closed area.



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**Change 1 att all blocks**

Pick 1 attribute in a block and change all blocks of same name with new matching attribute value.

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**Change hatch pat-2**

Similar to Change hatch pat but it changes a hatch inside a block this will reflect in all instances of that block.

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**Changecontours**

This allows the changing of **CIV3D** surfaces style from a toolbar rather than using Toolspace, a more practical way.



It has multiple parts, lisp, icons and tool bar menu.

The instructions to use are in **Changecontours.zip**

**There is some minor user editing required of the surface style names being used by the end user, if not competent to make the changes to a menu file (text file) a screen shot of your surface styles can be sent to AlanH consulting and the changes will be made for you.**

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**Check text style height**

A library function to check if a text style has the height preset, used in lisp code as text can be created in two ways depending on if the height is set.

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**Chkbrk**

Used to check a lisp program for paired brackets it writes a copy file that can be opened and shows the number of open brackets, matched code will end with 0, useful in larger coded lisps.

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**Chainage on polyline**

Many versions available. At fixed spacing and or pick points.

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**Change att by position**

Change an attribute value in all blocks of same name, using creation order rather than by attribute tag name

 



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**Channel flow**

This gives flows using the Mannings formular for shapes such as pipes and open channels.

  

Open shapes are supported as well as box culverts.

 

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**Circle-to chords**

Similar to arc to chords pick circle and enter the number of chords.

  

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**Civ3d Change text style in labels**



As the name implies allows the changing of the text style to be used in the CIV3D styles. Just enter the new style name required.

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**Civ3D Changepointstyle**



Allows the changing of the CIV3D point style using a simple dialouge list box selection rather than using toolspace.

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**Civ3d create point**

This is an example of adding CIV3D points via lisp

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**CIV3d Import description keys**

You can export description keys from CIV3D this routine allows the i**mportation** of description keys, using a csv file that can be produced quickly and simply from Excel. Please contact AlanH consulting for further details.



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**Civ3d point edit desc**

You can change a CIV3D point description via its point number to a new description.

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**Civ3d pt ht**

Allows you to label a Civ3d point Z value as text, picking as many as required.

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**Civ3d rotate point**



Allows the user to rotate a CIV3D point by nominating an angle or picking two points for the angle, just enter a negative value for pick two points.

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**Contours to rl**

This is useful to convert 2d contours or lines that are on a layer that represents an elevation eg layer name 86. will move objects to elevation 86.0

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**Cogo point as text**

Pick a CIV3D Cogo point and write text with X Y Z .

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**Copy layout to another**



This allows you to copy a layout to another layout it moves the objects on the destination layout 1st, This is useful where 3rd party or custom routines create a layout, moving the content as an updated version to an existing layout avoiding a lot of editing.

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**Copy block atts down**

You can copy an existing block with attributes up or down a set distance, it attempts to increases the value of the 1st attribute, this would be useful for title block revisions. Entering a zero for shift will allow selection of two points for the move distance.

Contact AlanH cosulting for more details.

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**Copy atts block1 to block2**

You can copy an existing block with attributes to a similar block with attributes .

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**ColorByLayer**

Converts selected objects colour to be **Bylayer**

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**Circle end 2 lines**

This creates a circle on the end of two lines and trims or extends the lines as required.



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**Civilcad convert**

This takes the created dwg file from Civilcad or Magnet and carries out the following steps.

Objects to Bylayer

Adds EX\_ to all layer names to represent clearer that data is field survey

Removes point cross blocks but adds Autocad point as 3D point

Changes some Civilcad linetypes to Autocad line types, then removes the linetypes removing the link to the Civilcad shx that was produced. It is recommended to remove the Civilcad DOT linetype.

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**Draw driveway**

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It draws a layback into a kerb you pick left and right points and accept or enter a new width.

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**dd3x3**

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This is an example of how to create a selection dialouge a 3x3 images using Autocad slide images, there is also dd2x2, dd2x3, dd4x4 DCL source.

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**Drawxfall**



Allows the user to draw lines etc on an entered slope **%** See Draw1in also.

Just enter horizontal and vertical scale then **%** slope required use ortho on to draw square lines at this angle, when finished type "SNAPANG 0"

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**Draw a point by grade**

to be done

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**Draw Objects XlBricscad & Autocad**

Using an Excel macro example to draw objects in Autocad or Bricscad, 2 versions

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**Draw rectang curved sides**

As per image.



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**Draw X in rectangs**

As name implies pick a rectang and a X is added on the diagonals.

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**Dumpit**

Allows a list of all properties of an Autocad object. Used by programmers.

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**Dump cogo points by group**

Used with CIV3D to make a list XYZ of points by group name.

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**Dynamic block get put**

Mutiple dynamic block update methods set properties such as visibility and variable via a dcl interface. Export properties.

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**Ellispe formula**

Makes an ellipse based on X & Y values and draws as line segments useful for CNC cutting.

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**Feet to decimal**



It is possible to pass the answer as a command line input using transparent command option. Need pics

Use this line if conversion is required on the fly type **'fdec** when asked for input.

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**Feet to decimal2**

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This is a single line version

It is possible to pass the answer as a command line input using transparent command option

Use this line if conversion is required on the fly type **'fdec** when asked for input.

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**Fillet 3 lines**

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This fits a radius to 3 lines using the midpt of the second line as a base for solution.

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**Fillet via a corner pick**

Pick a corner of 2 lines or a pline and add a fillet by single pick.

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**Fillet rad**

This uses a reactor so you reduce a step in the fillet command rather than **Fillet** then **Rad** then a value you can type R100 the 100 will be recognised as the fillet radius any number is recognised, Decimals must use a "-" to separate so F100-5 would be a radius of 100.5 This technique is used in other similar modules, circle, offset, insert block, others can be added recognising the 1st character. It is best autoloaded at start of Autocad session.

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**Flipline**

As the name implies it rotates objects 180 deg useful for service line types.

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**Grid in layout**

Creates a grid of world co-ords using a layout viewport supports twisted viewports.



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**Goto-layout**

This is as it implies a **Goto a layou**t, like a page goto in other software. Just type goto and enter layout as a number, World is layout 0, if you enter a large number it will go to the last layout.

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**Hatch plines**

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A common request hatch multiple plines in one go.

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**Hop line**

Draw a hop over where 2 lines etc cross. Two choices



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**Hordist**

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Pick two points and grades, horizontal and vertical distances shown.

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**Insert image at text location**

Matches a text label to a corresponding image of same name. It is useful for parts or a office layout.

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**Lego block**

A bit of fun draws a lego block.

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**Line type dump**

This draws a series of lines for each linetype with a label next to it. Useful to see all current available linetypes.



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**Listbox-AH**

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This library routine allows you to pick one item from a dialogue list of items.

It can be used in most lisp code with just a couple of lines of code, compared to a hard coded solution of around 50+ lines repeated every time you want to use a dcl.

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**LUDR-pline**

Draw a pline by direction Up Down left or Right use upper or lowercase this version is a metric/decimal version, the option C closes or the option E ends the creation.

Version 2 depending on request will be an imperial version

   



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**MakeTable**

This is example code of how to make an Autocad table used in conjunction with Lisp code.

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**Make dxl XY**

This allows you to make dcl with slide images selecting object by image useful for insert block or calling another function.

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**Make furniture table**

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This is an example of how to make a simple object "**household table**" using multiple user input for sizes and producing a 3D object. Uses "Multi getvals" for inputs see below.

 

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**Model title to layout**

This makes layouts using title blocks from mspace this code is for metric and may need modification for imperial the code is hard coded for a A1 title block with a mview window of 800x500 ;the manual pick is to ensure layouts are created in correct order.

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**Move window to zero**

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Moves all layouts to lower left 0,0 Has an offset ability for edge marker offsets, used to move Title blocks to a fixed location for auto plotting.

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**Multiple pline offset with width and color**

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You have 3 choices enter a offset, enter a offset and width, or enter offset, width and color

30 30,4 30,4,32

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**Multi Getvals**

****

Multiple Getvals is a **library** routine that allows you to create as many lines of input as required (subject to Autocad limits) using a dialogue rather than the command line.

It can be used in most lisp code with just a couple of lines of code, compared to a hard coded solution of around 50+ lines repeated every time you want to use a dcl.

It only requires 2 lines of code in any lisp to use.

It will return a list of all the values you have entered. You can then assign the returned results to your variables.

There is examples in the top of the code how to use in your code.

For complete example look at "Make furniture table"

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**Multi horizontal lines**

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Allows you to create a box with ruled lines at a spacing.

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**Multi line fillet**

 

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**Multi line offsets**

Allows you to enter multiple offset values +ve and -ve offset is accepted as right and left offsets

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**Multi Radio Buttons**

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Multiple radio buttons is a **library** routine that allows you to create as many button selections as required (subject to Autocad limits) using a dialogue rather than the command line. It can be used as a replacement of INITGET.

It can be used for simple "Yes" or "No" type of question, or more complex "Left Right Up Down", .

It can be used in most lisp code with just a couple of lines of code, compared to a hard coded solution of around 50+ lines repeated every time you want to use radio button input.

It can be displayed horizontal or vertical. Picking a button will close the dialouge so no need to pick Ok.

It remembers the last picked so Ok can be chosen.

It only requires 3 lines of code in any lisp.

List of variables that can be chosen, check if already loaded else load, the picked button is returned in the ans variable , use V or H for dcl direction

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**Multi Toggles**

Allows for on / off choices, a Library function as many toggles as required.



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**Multi Getvals 2 col**

As name implies 2 columns of input values

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**Multi Radio 2col**

As name implies 2 columns of radio buttons.

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**Notch pline**

Adds a notch at the corner of a pline.

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**Objects to and from excel**

This has to many variations, AlanH Consulting can discuss solutions to meet your needs.

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**Perp to 2 pts**

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Perp to point draws a line perpendicular from a line made up of two points, so object does not need to exist. Useful when object is a polyline.

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**Perpline to end of line**

As the name implies you can draw a line and an additional line perpendicular to the last point, the options available for the new line are Left, Mid or Right.

The user is asked for the length of the "T" line. Once entered if repeated will be used as default value. It can be over ridden at any time.

  



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**Pipe ends**



Draws the end of a circular pipe in a standard two arc end style by picking two end points.

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**Pipe offsets**

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Pipe offset for different size pipes, replaces a single line with two lines at correct size of pipe equal to outside diameter.

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**Pit**

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This draws a typical stormwater pit but aligns to 2 points when created.

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**Pline co-ords2**

Example of Creating a list of points for a Pline 3or dpoly or Line.

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**Pline from list pts**

Simple example method of making a pline from a list of points.

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**Pline offset taper ends**

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Take a single pline and offset it both side and have tapered ends.

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**Pline co-ords**

Simple way to create a list of pline co-ords

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**Pline with tabs**

This takes a pline and adds tabs of a user width useful for sheet metal work.



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**Plot-titles-in-model**

This will plot all title blocks in model space using a known Block, it uses the block location to plot by window. It requires some modification to suit user block, AlanH consulting can advise further

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**PlotA3B-WRange**

**PlotA3colrange**

**PlotA3Pdfrange**

**PlotA4black-white**

**PlotA4JPG**

**Plot tiff**

Examples of plotting numerous layouts automatically, generally called from a menu for correct type and printer. Printer settings do need to be changed to match the end user printer names. Contact AlanH Consulting if you need assistance.

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**Pramcross1**



This draws a pram crossing in a typical kerb intersection, trims line work representing edge and back of kerb.

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**Pt num bubble**

**  **

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**Pt txt ht**

A simple label the Z value of an Autocad point, see also Civ3D pt ht

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**Rectang with holes**

Create a rectang and add corner holes.



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**Pline Rectang with chamfer corners**

Draw a rectang and chamfer the corners can do 1 -4 corners.



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**Replace block attribute multi block names**

Use this to pick multiple blocks and replace the 1st attribute

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**Reset block to defaults**

Allows the user to reset selected blocks to default attribute values

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**Set paths**

This is an example of how to set all the preferences when doing a new install or upgrade.It loads user menu's, user choice of toolbars that they would normally use. Need to run Tool bars 1st and save as say users name.

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**SETEDIT SETLPNO SETOUT SETOUBOX SETOUTPT**

These routines carry out various functions involving the setting out of field point, generally in civil construction, such as:

This allows the insertion of a block at a user chosen point and the entry of a point number (start number) it automatically increases the point number.

This routine exports the co-ordinates of the set out points created using the standard block pt\_no (see setoutpt)

This allows the insertion of tabulated box of co-ordinates with desired text height. It reads a comma separated file from either the setout routine or from other software such as excel. (see setout)

 Please contact AlanH Consulting to discuss your needs.

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**Simple pline - pt offset**

Pick a pline then pick a point gives a report of distance along pline and offset distance

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**Slot**

Draws a simple slot with round ends.



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**SurfaceRL**

Calculates the level of a picked point on a long section, drain or road cross section and updates a chosen text value. Useful where manual editing has been done and Rl needs to be labelled. Takes into account horizontal and vertical sc

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**Swap attributes in block**

This moves the attribute values in the block allowing rearranging.

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**Text Add num to txt**

Allows the addition or subtraction of an amount from existing text.

Either 1 at a time or multiple selection.





Select entities





To exit just press "Esc" or just pick any where on drawing.

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**Text Add prefix text**

This routine adds a prefix text to the chosen text. Just enter the prefix and select text.

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**Text Add suffix text**

This routine adds a suffix text to the chosen text. Just enter the suffix and select text.

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**Text Average**

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As the name implies pick text 1, pick text 2, pick text 3 and it is updated to the average of the two prior values.

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**Text in polygon**

An example of how to find text in multiple plines

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**Text to voice**

Example of you can have voice messages as part of your code.

"Please select again"

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**Text180**

Rotate selected text 180 update code

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**Text2line**

Rotates text to the same angle as a chosen line

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**Text2xyz**

Creates a 3D point based on numeric text values the point is located at the text insertion point. Useful for converting existing 2D plans to 3D where spot heights are shown as text.

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**Textarea-csv**

Pick text and it will return the enclosing poly boundary area, result can be written to a file.

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**Textrot**

Needs rewrite 2nd version of t155 reactor

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**Txt1-txt2-txt3**

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This allows you pick two text subtracting text1 from text2 then write answer to text3.

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**Txt2lay**

Searches for a key word in text and mtext and changes the layer.

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**Trimupcross**

A simple routine that repeats the Autocad commands to erase the extra right or left offset values and lines from cross sections that are created from some software.

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**Uppcase**

A simple convert selected text from lowercase to uppercase

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**Update sheet num, Update sheet revs, Update order**

These are used plus others to update title block attributes in layouts. Please contact AlanH Consulting to discuss your needs.

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**Waffle slabs**

Draws house waffle slabs within a pline shape.



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**Write-column-of-text**

Writes columns of text to an excel spreadsheet can be used to create setout points for the surveyors as the excel spreadsheet data can be saved as a comma separated file for uploading.

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**XFALL**

Writes the text value **1 in x** of an existing picked line or lines. Note will not work on polylines.

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**XFALLPER**

Writes the text value **x%** of an existing picked line or lines. Note will not work on polylines.

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**Zigzag**

An example of drawing a repeating pattern into a pline.

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**Zoomextentsall**

this is an example of zoom Extents in all layouts useful before a Save.

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**THE END**

This document is a work in progress as more functions are added, please check for updates.