



AutoCAD® Self-paced Learning Modules
AutoCAD Customization
Module 14
Menu Macros

Why is it **Important** for you to learn this task?

RATIONALE:

Menu macros allow you to enter AutoCAD commands and parameters with one pick on one of the menu devices available.

If you understand how menu macros function, you can create your own macros to suit your particular drawing requirements. Using your own macros in custom menus, will increase the speed and accuracy of your drawing.

Here is what you will be able to do when you complete each **Step** of this learning activity package:

OBJECTIVE(S):

1. Describe and write menu macros.
Describe and apply the command SELECT in a menu macro.

To show that you have **Mastered** this task, here is what you will be asked to do:

PERFORMANCE EVALUATION:

1. Complete Self-Test No. 1 with 100% accuracy.
2. Complete Lab Exercise L0890-01 with 100% accuracy.

OBJECTIVE NO. 1

When you complete this objective you will be able to:

1. Describe and write menu macros.
Describe and apply the command SELECT in a menu macro.

Complete each of the learning activities listed below.

LEARNING ACTIVITIES

DO the following things:

USE the following resources:

- | | |
|--|-------------------------------|
| 1. Read Information Sheet No. 1. | Pages 3 to 5 of this module |
| 2. Complete Self-Test No. 1. | Page 6 of this module. |
| 3. Check your answers to Self-Test No. 1 and correct any errors. | Page 9 of this module. |
| 4. Complete Lab Exercise L0890-01. | Pages 7 and 8 of this module. |
| 5. Check your answers to Lab Exercise L0890-01 and correct any errors. | Page 10 of this module. |

INFORMATION SHEET NO. 1

MENU MACROS

A *menu macro* is a menu item consisting of AutoCAD commands and parameters.

A simple menu macro may contain just one command with no parameters, a more complex one may contain a series of commands and parameters.

Menu macros can also contain AutoLISP functions.

SELECTING OBJECTS WITHIN A MENU MACRO

In a menu macro, a backslash (\) is used to pause for user input. In most cases each backslash is used up with one pick on the screen or one ENTER on the keyboard. This means, the full range of options at the Select objects: prompt, is not available when commands are executed from macros.

EXAMPLES

Example No. 1

```
[MOVE 2R]^C^CMOVE;\;0,0;2,0
```

{This example allows the user to select an object that is then moved horizontally, 2 units to the right. The single backslash allows only one object to be selected and therefore limits the use of this macro. Note: the semicolon after the backslash is the ENTER required to cancel the Select objects: prompt and continue the command.}

Example No. 2

```
[MOVE 2R]^C^CMOVE;W;\;0,0;2,0
```

{In this example, object selection is limited to one *window* option.}

AutoCAD Command - SELECT

DESCRIPTION

The SELECT command, when used in a menu macro, works differently than other commands that require object selection in that the backslash for user input is not used up until the ENTER key is pressed at the Select objects: prompt. This means the full range of options is available for selecting objects.

The selection set can be recalled in a subsequent command using the *P (previous)* option at the Select objects: prompt.

OPTIONS

None

EXAMPLES

Example No. 1

```
[MOVE 2R]^C^CSELECT;\MOVE;P;;0,0;2,0
```

{In this example, the SELECT command is used to make the selection set. The backslash will pause the macro until you press ENTER at the Select objects: prompt. This allows you to select as many objects using as many options as you want. In the MOVE command that follows, the selection set is recalled with the 'P' (*previous*) option. Note: the first semicolon after the 'P' enters the P, the second is the ENTER required to cancel the Select objects prompt.}

MENU MACRO EXAMPLES

The following examples illustrate how menu macros can be used to simplify command and parameter input.

Example No.1

```
[MOVE&ROT]^C^Cselect;\move;p;;\rotate;p;;@;
```

{This example allows the user to select objects which are moved and then rotated. The user inputs the base point and second point in the MOVE command and angle in the ROTATE command. The basepoint in the ROTATE command (@) is specified to be the same as the second point in the MOVE command.}

Example No.2

```
[COPY&ROT]^C^Cselect;\copy;p;;@\;move;p;;@\;redraw;rotate;p;;@;
```

{In this example, the selected objects are copied and then rotated. In order to allow the *previous* option to be used in the ROTATE command, the objects are first copied on top of themselves and then the selected objects are moved leaving the copies in the original location.}

Example No.3

```
[MoveText]^C^Cselect;\QText;on;move;p;;\QText;off;
```

{If you need to move large amounts of text, the redraw time can be minimized by using QTEXT. In this example QTEXT is turned on before the text is moved.}

Example No.4

```
[Both On]^C^CDimse1;off;Dimse2;off;  
[1st Only]^C^CDimse1;off;Dimse2;on;  
[2nd Only]^C^CDimse1;on;Dimse2;off;  
[Both Off]^C^CDimse1;on;Dimse2;on;
```

{The four macros in this example, can be used to selectively control extension line suppression when dimensioning.}

Example No.5

```
[OffsetL]^C^Coffset;\;\;chprop;L;;La;(getvar "clayer");
```

{This macro allows you to offset an object to the current layer. '(getvar "clayer")' is an AutoLISP function that returns the value of the system variable CLAYER (current layer).}

Example No.6

```
[SnapRot]^C^Cortho;off;snap;r;mid;\end;@;ortho;on;  
[SnapRset]^C^Csnap;r;0,0;1,0;
```

{The first macro in this example will rotate the snap grid, and therefore the orientation of the screen cursor and the orthomode, to the angle of an existing line. The second macro will reset the snap rotation back to zero degrees.}

Example No.7

```
[Refresh]^C^Clist;c;\^C
```

{In this example, the macro selects a window and redraws only the objects inside or crossing it. This is faster than REDRAWing a large drawing and is useful for restoring blackouts caused by STRETCH or MOVE commands.}

Example No.8

```
[ Update]^C^Cselect;\erase;p;;oops;
```

{After an existing block has been redefined, it is necessary to Regen the drawing to display the updated version. A quicker way is to ERASE them and then OOPS them back as shown in this example. If the blocks are spread around the drawing, window the whole drawing. Regenauto must be *Off* when the block is redefined or the drawing will automatically regenerate.}

Example No.9

```
[ VALVE2]^C^C-insert;valve2;near;\;\;
```

{This example allows you to insert the block 'valve2'. The two backslashes allow you to specify the insertion point and the X-scale factor. The default Y-scale factor is accepted by the macro. The macro will leave you at the Rotation angle: prompt. The OSNAP "near" means the block insertion point will be on an existing object.}

SELF-TEST NO. 1

DIRECTIONS

1. Answer the following questions.
2. Compare your answers to the enclosed answer key.
3. If you disagree with any of the answers, review the learning material and/or check with your instructor.
4. If no problems arise continue with the next step.

1. A menu macro is a menu item consisting of a number of AutoCAD _____ and _____.
2. A backslash is used to pause for _____. In most cases each backslash is used up with one _____ on the screen or by _____ on the keyboard.
3. Explain how, when used in a menu macro, the SELECT command works differently than other commands requiring object selection:

4. Write a menu macro that will insert a block named PART1 at the end of an existing line. The only user input is the insertion point, the X-scale factor and the rotation angle.
[PART1] _____
5. Write a menu macro that will allow the user to move and scale a specified number of objects. The user should select the objects to move, the first and second points for the move, and then the scale factor.
[MOV+SCAL] _____
6. Write a menu macro that will allow the user to load the standard AutoCAD linetypes and then set the current entity linetype. The only user input is the current entity linetype.
[LINE SET] _____
7. Write a menu macro that will allow the user to copy objects from one layer to another. The copies should be in the same location on the drawing as the originals. The user should specify the objects to be copied and the name of an existing layer where they are to be copied.
[COPY LAY] _____

LAB EXERCISE NO. 1

Lab Exercise L0890-01

Name: _____

Date: _____

Description

1. Write a menu macro program for each of the following:

- a) Command ARC, option CENTER, user inputs the center location, user inputs the start location, option INCLUDE ANGLE, user inputs the angle.

[ARC CSA] _____

- b) Allows the user to select objects, as many as required using any method or methods (pick, window). The objects are copied to another location on the drawing and then scaled using the SCALE command. The user must enter the scale factor and set the base point. This will allow the user to pick existing objects and make a detail at any scale.

[DETAIL] _____

- c) Command CIRCLE, set grid to .125, set snap .125, user inputs center point, option DIAMETER, user inputs diameter, Grid off, Snap off.

[CIRCLE D] _____

- d) Command UNITS, set architectural units to the nearest 1/16 inch, angles measured in degrees/minutes/seconds (to nearest second), angles from 0 degrees, rotated counterclockwise, make sure screen is set back to graphic screen.

[ARCHUNIT] _____

- e) Command LAYER, create a layer, user inputs name, layer color, and displays Image Tile LT to set linetype.

[NEW LAY] _____

- f) Set INTERSECTION as a running OSNAP, insert multiple circles. User sets radius of first circle and then picks location of center and centers of similar circles at intersections of existing construction lines. Hint: Use the CIRCLE command for the first circle and then the COPY command, option *Multiple*, for the remaining.

[MULTICIR] _____

2. Edit your menu file MENUADV.MNU and add the menu item "MACROS" to the root of the screen menu. Add the submenu MACRO containing your macros to the file.

a) SCREEN MENU

i) Submenu ROOT

```
MAIN
  SNAPMODE
  DRAW
  ZOOM
  EDIT
  MACROS      {blank line}
              {load screen submenu MACRO}
```

ii) Submenu MACRO

```
MACROS      {title, starts 4 down}
            {blank line}
ARC CSA     {macro}
DETAIL     {macro}
CIRCLE D   {macro}
ARCHUNIT   {macro}
NEW LAY    {macro}
MULTICIR   {macro}
```

3. Load the menu and test your macros. Edit the file and correct any errors.

ANSWER KEY

SELF-TEST # 1

1. A menu macro is a menu item consisting of a number of AutoCAD **commands** and **parameters**.
2. A backslash is used to pause for **user input**. In most cases each backslash is used up with one **pick** on the screen or by **pressing enter** on the keyboard.
3. Explain how, when used in a menu macro, the SELECT command works differently than other commands requiring object selection:

The user input is not used up until the ENTER key is pressed at the select objects: prompt.

4. Write a menu macro that will insert a block named PART1 at the end of an existing line. The only user input is the insertion point, the X-scale factor and the rotation angle.

```
[ PART1 ] ^C^C-insert;part1;end;\ \
```

5. Write a menu macro that will allow the user to move and scale a specified number of objects. The user should select the objects to move and then specify the first and second points for the move and the scale factor.

```
[MOV+SCAL] ^C^Cselect;\move;p;;\scale;p;;@ \
```

6. Write a menu macro that will allow the user to load the standard AutoCAD linetypes and then set the current entity linetype. The only user input is the current entity linetype.

```
[LINE SET] ^C^C-linetype;l*;s;\;
```

7. Write a menu macro that will allow the user to copy objects from one layer to another. The copies should be in the same location on the drawing as the originals. The user should specify the objects to be copied and the name of an existing layer where they are to be copied.

```
[COPY LAY] ^C^Cselect;\copy;p;;0,0;@\;chprop;p;;la \;
```

LAB EXERCISE No. 1 - L0890-01

1. Add the bottom two lines to your "root" submenu:

```
***screen
**root
[ MAIN ]$s=root
[SNAPMODE]$s=osnap

[ DRAW ]$s=draw
[ ZOOM ]$s=zoom ^c^czoom
[ EDIT ]$s=edit

[ MACROS ]$s=macro
```

Add the following screen submenu to your file:

```
**macro 4
[MACROS]

[ARC CSA]^c^carc;c;\a
[DETAIL]^c^cselect;\copy;p;;0,0;@\;move;p;\scale;p;;
[CIRCLE D]^c^cgrid;.125;snap;.125;circle;d;\^g^b
[ARCHUNIT]^c^c-units;4;16;2;4;0;;graphscr
[NEW LAY]^c^c-layer;m;\c;\$I=lt $I=*
[MULTICIR]^C^C-osnap;int;circle;\copy;l;;m;@;
```