

# Something About CAD

---

## 參考網址

<https://help.autodesk.com/view/OARX/2018/CHS/?pl=ENU>

<https://autocadtips1.com/>

[https://space.bilibili.com/34873054/channel/seriesdetail?sid=1403894\](https://space.bilibili.com/34873054/channel/seriesdetail?sid=1403894)

## 基本變量

```
1.23      ;;實數
'(1 2 3)   ;;(實數的集合)
(list 1 2 3) ;;(實數的集合)
```

## 獲取命令

```
(getreal "[提示]") ;; 輸入實數
(getpoint "[提示]") ;; 輸入點
(ssget) ;;多選
(ssname (ssget) 0) ;;第一圖元名
(entget (ssname (ssget) 0)) ;;圖元信息(獲取表)
```

## 變量賦值

```
(setq a (getpoint "第一點") b (getpoint "第二點")) ;; 輸入點
(setq a (entget (ssname (ssget) 0))) ;;圖元信息(獲取表)
```

## 基本繪製

```
(vl-cmdf "line" a b "") ;;直線
(vl-cmdf "circle" c 20) ;;圓
(vl-cmdf "text" "j" "m" (getpoint "中心點") 3 0 "文本") ;;文本
```

## 基本操作

```
(vl-cmdf "break" (ssget) (setq a (getpoint "打斷點"))) a) ;;一點打斷
```

## 基本運算

```
(+ 3 2)    ;;加
(- 3 2)    ;;減
(* 3 2)    ;;乘
(/ 3 2)    ;;除
```

## 基本函數定義

圖形的本質是表

```
(defun getD(a n)(entget (ssname a n)))    ;; 獲取表

(defun newD(a n b / ) (setq b2 (cdr (assoc n a))) (subst (cons n b) (assoc n a)
a))    ;; 更新表

(defun dealDex(a b) (vl-remove-if-not '(lambda (buf) (member (car buf) b ) ) a ))
;; 篩選表(保留)

(defun dealDex2(a b) (vl-remove-if '(lambda (buf) (member (car buf) b ) ) a ))
;; 篩選表(去除)

(entmod a) ;;更新圖

(entmakex a) ;;新建圖
```

## 點運算封裝

```
(apply '+ '(1 2 3))    ;; 累加
(mapcar '+ a b)    ;; 對應相加
(mapcar 'sub2 (mapcar '+ a b) )    ;; 對應相加再除以2(計算中點)
(defun sub2( a / ) (/ a 2) )    ;;固定除以2
(defun unNum(a / ) (- a))    ;;取反
(defun sign( a / re) (if (= 0 a) (setq re 0) (if (< 0 a) (setq re 1) (setq re -1)
))    ;;符號函數
(defun vert( a / re) (if (or (= 0 (car a)) (= 0 (cadr a)) ) (setq a (mapcar
'sign a))) (setq re (list (nth 1 a) (- (nth 0 a) 0)))    ;;獲取向量垂直向量
(defun pointadd (a b) (mapcar '+ a b))    ;; 加
(defun pointsub (a b) (mapcar '- a b))    ;; 減
(defun pointun(a) (mapcar 'unNum a))    ;; 點(向量)取反
```

## 邏輯判斷

```
(if (not (= nil (setq r (getreal "輸入半徑")))) (vl-cmdf "circle" c r ) )    ;;if
```

## 循環獲取,繪製

```
(while (not (= nil (setq r (getreal "輸入半徑")))) (vl-cmdf "circle" c r ) )  
;;while  
  
(while (not (= nil (and (setq a (getpoint "第一點")) (setq b (getpoint "第二點"))  
))) (vl-cmdf "line" a b "") ) ;;while  
  
(repeat 6 (if (= nil a) (setq a (getpoint "中心點")) (setq a (mapcar '+ a '(0 -7  
0))) ) (vl-cmdf "text" "j" "m" a 3 0 "文本")) ;;repeat 一列6文本
```