```
.* ILLEGAL LIST.
?20 PUT N
! ?
** "PUT" TYPE NOT SUPPORTED.
?20 TSO3038 LOGGED OFF TSO AT 22:01:06 ON APRIL 16, 1973+
SESSION CANCELLED
LOGOB#

EEE
HELLO 306
@@II  LL


@@DD  CC  EE

@E R

@L 70

LOGGER

 T R OPEN
MIT DYNAMODFROM MB1 03/29/73 13:04:57
 DYNAMIC MODELLING UP ON NETWORK FOR TELNET ONLY

MONIT.201
FROM JFH 04/16/73 19:20:00
  NEITHER LPT IS OPERATIONAL, SORRY, PLEASE
  DO NOT BLOAT TPL:... WAIT UNTIL A LPT IS WORKING TO PRINT.
FROM LICK 04/15/73 14:52:43
 NOTE TO 6.801 STUDENTS:  PLEASE READ THE LATEST NOTE TO CLASS
 (%%%NOT ETOCLA) AVAILABLE VIA THE MU DIRECTORY.  LICK.

FROM GFP 04/13/73 14:24:37
 BE SOCIALLY ACCEPTABLE AND USE NMUDDLE -- YOU'LL SHARE
 A PPRINT AND THE ROOT OBLIST.
FROM PDL 04/12/73 11:49:42
 CARE DIRECTORIES HAVE OFFICIALLY GONE AWAY.
FROM AV 04/12/73 09:15:40
    6.8 STUDENTS MAY OBTAIN A COPY OF THE NEW "A MUDDLE PRIMER?" MINUS
THE INDEX FROM SUE PITKIN IN ROOM 201.  IT IS NOT THAT WE DON'T WISH YOU
TO HAVE THE INDEX ; IT JUST HASN'T BEEN PRINTED YET.


;LOG RBA
FROM RBA 04/17/73 01:11:33
 HELLO RICK THIS IS (RBA) LIIK AT RICK3 OUTPUT SOMETHING WENT WRONG (UNDERSTATEM

 AND IT WAS THE FOLLOWING <DEFINE B (X Y)<LOG<ABS<*</<SIN .X><ABS .X>>
                                                  </<SIN .Y><ABS .Y>>>>>>$
 BUT IT RESULTED NOT IN THAT THING IN COLORFREED BUT WHAT YOU CAN SEE BY
 DSKIMAGE "RICK3" "OUTPUT" TRY IT YOU WON'T LIKE IT. SEE YOU LATER BYE.
                                  RICK AUGUST
 FROM RBA 04/17/73 01:10:57


;TYP NDR;OGRF >
<SETG CALCX
      <FUNCTION (X)
                <FIX <+ <* .X
                            </ <FLOAT <- .RBOUND .LBOUND>> <- .RIGHT .LEFT>>>
```

```
                    </ <FLOAT <- <* .LBOUND .RIGHT> <* .RBOUND .LEFT>>>
                       <- .RIGHT .LEFT>>>>>>

<SETG CALCY
      <FUNCTION (Y)
                <FIX <+ <* .Y
                           </ <FLOAT <- .TBOUND .BBOUND>> <- .TOP .BOTTOM>>>
                        </ <FLOAT <- <* .BBOUND .TOP> <* .TBOUND .BOTTOM>>>
                           <- .TOP .BOTTOM>>>>>>

<SETG CALC+REL+X
      <FUNCTION (X)
                <FIX <* .X </ <FLOAT <- .RBOUND .LBOUND>> <- .RIGHT .LEFT>>>>>>

<SETG CALC+REL+Y
      <FUNCTION (Y)
                <FIX <* .Y </ <FLOAT <- .TBOUND .BBOUND>> <- .TOP .BOTTOM>>>>>>

<SETG PUT+CHARS
      <FUNCTION (CONTROL+CHAR X Y "OPTIONAL" (INTENSIFY 0) (DOT 0))
                <IMAGE .CONTROL+CHAR>
                <CALC+CHAR .X .INTENSIFY>
                <CALC+CHAR .Y .DOT>
                <IMAGE .OUT+VECTOR+CHAR>
                DONE>>

<SETG CALC+CHAR
      <FUNCTION (N
                 FLAG
                 "AUX"
                 (ABSN <ABS .N>)
                 (SIGNN <COND (<L? .N 0> 1) (0)>)
                 (LOWN <MOD .ABSN 32>)
                 (HIGHN </ .ABSN 32>))
                <IMAGE <+ 64 <* .LOWN 2> .SIGNN>>
                <IMAGE <+ 64 <* .FLAG 32> .HIGHN>>>>

<SETG POSITION
      <FUNCTION (X Y "AUX" (REALX <CALCX .X>) (REALY <CALCY .Y>))
                <SET XPOS .REALX>
                <SET YPOS .REALY>
                <PUT+CHARS .SET+POINT+CHAR .REALX .REALY>
                DONE>>

<SETG LINE
      <FUNCTION (X
                 Y
                 "OPTIONAL"
                 (DOTTED 0)
                 "AUX"
                 (REALX <CALCX .X>)
                 (REALY <CALCY .Y>))
                <PUT+CHARS .LONG+VECTOR+CHAR
                           <- .REALX .XPOS>
                           <- .REALY .YPOS>
                           0
                           .DOTTED>
                <SET XPOS .REALX>
                <SET YPOS .REALY>
                DONE>>

<SETG REL+POSITION
      <FUNCTION (X
                 Y
                 "AUX"
                 (REALX <+ .XPOS <CALC+REL+X .X>>)
                 (REALY <+ .YPOS <CALC+REL+Y .Y>>))
                <SET XPOS .REALX>
                <SET YPOS .REALY>
                <PUT+CHARS .SET+POINT+CHAR .REALX .REALY>
                DONE>>
```

```
<SETG REL←LINE
      <FUNCTION (X
                 Y
                 "OPTIONAL"
                 (DOTTED 0)
                 "AUX"
                 (REALX <CALC←REL←X .X>)
                 (REALY <CALC←REL←Y .Y>))
                <SET XPOS <+ .XPOS .REALX>>
                <SET YPOS <+ .YPOS .REALY>>
                <PUT←CHARS .LONG←VECTOR←CHAR .REALX .REALY 0 .DOTTED>
                DONE>>

<SETG PLOT
      <FUNCTION (X Y)
                <COND (.PEN←DOWN <LINE .X .Y>)
                      (T <POSITION .X .Y> <SET PEN←DOWN T>)>
                DONE>>

<SETG LINE←SEG <FUNCTION (X1 Y1 X2 Y2) <POSITION .X1 .Y1> <LINE .X2 .Y2>>>

<SETG SCALE
      <FUNCTION (XMIN XMAX YMIN YMAX)
                <SET LEFT .XMIN>
                <SET RIGHT .XMAX>
                <SET BOTTOM .YMIN>
                <SET TOP .YMAX>
                DONE>>

<SETG WINDOW
      <FUNCTION ('TO←DISPLAY
                 "OPTIONAL"
                 (XMIN .LEFT)
                 (XMAX .RIGHT)
                 (YMIN .BOTTOM)
                 (YMAX .TOP)
                 "AUX"
                 (TEMP1 <CALCX .XMIN>)
                 (RBOUND <CALCX .XMAX>)
                 (LBOUND .TEMP1)
                 (TEMP2 <CALCY .YMIN>)
                 (TBOUND <CALCY .YMAX>)
                 (BBOUND .TEMP2)
                 (LEFT 0)
                 (RIGHT 1)
                 (BOTTOM 0)
                 (TOP 1)
                 (PEN←DOWN #FALSE ()))
                <POSITION 0 0>
                <EVAL <EVAL .TO←DISPLAY>>
                DONE>>

<SETG IMLAC←ERASE <FUNCTION () <IMAGE 22> DONE>>

<SETG ARDS←ERASE <FUNCTION () <SET LINE←NO 0> <IMAGE 12> DONE>>

<SETG IMLAC←READER
      <FUNCTION ()
                <IMAGE 1> <IMAGE 2> <IMAGE 1> <IMAGE 3>
                <REPEAT GRAPHIC←READER←ACTIVATION
                        ()
                        <EVAL (<IMAGE 1>
                               <IMAGE 4>
                               <SET PEN←DOWN #FALSE ()>
                               <READ>
                                <TERPRI>
                               <IMAGE 1>
                               <IMAGE 5>)>>>>
```

```
<SETG ARDS←READER
      <FUNCTION ()
                <ERASE←SCREEN>
                <REPEAT GRAPHIC←READER←ACTIVATION
                        ()
                        <EVAL (<POS←UP>
                               <SET PEN←DOWN #FALSE ()>
                               <READ>
                               <RE←POS>)>>
                <POS←UP>>>

<SETG LEAVE←READER <FUNCTION () <EXIT .GRAPHIC←READER←ACTIVATION DONE>>>

<SETG POS←UP
      <FUNCTION ()
                <ABS←POS -525 690>
                <REPEAT ((N .LINE←NO))
                        <COND (<G? .N 0> <SET N <- .N 1>> <TERPRI>)
                              (T <SET LINE←NO <+ 1 .LINE←NO>> <RETURN POOF>)>>>>


<SETG ABS←POS <FUNCTION (X Y) <PUT←CHARS .SET←POINT←CHAR .X .Y>>>

<SETG RE←POS <FUNCTION () <PUT←CHARS .SET←POINT←CHAR .XPOS .YPOS>>>

<SETG GRID
      <FUNCTION (XINC
                 YINC
                 "OPTIONAL"
                 (XCENTER 0)
                 (YCENTER 0)
                 (LENGTH .025000000)
                 "AUX"
                 (VL <* .LENGTH <- .TOP .BOTTOM>>)
                 (HL <* .LENGTH <- .RIGHT .LEFT>>)
                 (LT <MIN .TOP <+ .YCENTER .VL>>)
                 (LB <MAX .BOTTOM <- .YCENTER .VL>>)
                 (LR <MIN .RIGHT <+ .XCENTER .HL>>)
                 (LL <MAX .LEFT <- .XCENTER .HL>>))
                <LINE←SEG .LEFT .YCENTER .RIGHT .YCENTER>
                <LINE←SEG .XCENTER .TOP .XCENTER .BOTTOM>
                <REPEAT ((POS .XCENTER))
                        <LINE←SEG .POS .LT .POS .LB>
                        <COND (<G? <SET POS <+ .POS .XINC>> .RIGHT>
                               <RETURN DONE>)>>
                <REPEAT ((POS .XCENTER))
                        <COND (<L? <SET POS <- .POS .XINC>> .LEFT>
                               <RETURN DONE>)>
                        <LINE←SEG .POS .LT .POS .LB>>
                <REPEAT ((POS .YCENTER))
                        <LINE←SEG .LR .POS .LL .POS>
                        <COND (<G? <SET POS <+ .POS .YINC>> .TOP>
                               <RETURN DONE>)>>
                <REPEAT ((POS .YCENTER))
                        <COND (<L? <SET POS <- .POS .YINC>> .BOTTOM>
                               <RETURN DONE>)>
                        <LINE←SEG .LR .POS .LL .POS>>>>


<SETG GRID1
      <FUNCTION (XINC
                 YINC
                 "OPTIONAL"
                 (XCENTER 0)
                 (YCENTER 0)
                 (LENGTH .037500000)
                 "AUX"
                 (VL <* .LENGTH <- .TOP .BOTTOM>>)
                 (HL <* .LENGTH <- .RIGHT .LEFT>>)
                 (LT <MIN .TOP <+ .YCENTER .VL>>)
                 (LB <MAX .BOTTOM <- .YCENTER .VL>>)
```

```
                <HL <* .LENGTH <- .RIGHT .LEFT>>>
                <LT <MIN .TOP <+ .YCENTER .VL>>>
                <LB <MAX .BOTTOM <- .YCENTER .VL>>>
                <LR <MIN .RIGHT <+ .XCENTER .HL>>>
                <LL <MAX .LEFT <- .XCENTER .HL>>>>
               <TERPRI>
               <LINE+SEG .LEFT .YCENTER .RIGHT .YCENTER>
               <LINE+SEG .XCENTER .TOP .XCENTER .BOTTOM>
               <REPEAT ((POS .XCENTER))
                       <LINE+SEG .POS .LT .POS .LB>
                       <PRIN1 <FIX <+ .POS .5>>>
                       <COND (<G? <SET POS <+ .POS .XINC>> .RIGHT>
                              <RETURN DONE>)>>
               <REPEAT ((POS .XCENTER))
                       <COND (<L? <SET POS <- .POS .XINC>> .LEFT>
                              <RETURN DONE>)>
                       <LINE+SEG .POS .LT .POS .LB>
                       <PRIN1 <FIX <+ .5 .POS>>>>
               <TERPRI>
               <REPEAT ((POS .YCENTER))
                       <LINE+SEG .LR .POS .LL .POS>
                       <PRIN1 <FIX <+ .5 .POS>>>
                       <COND (<G? <SET POS <+ .POS .YINC>> .TOP>
                              <RETURN DONE>)>>
               <REPEAT ((POS .YCENTER))
                       <COND (<L? <SET POS <- .POS .YINC>> .BOTTOM>
                              <RETURN DONE>)>
                       <LINE+SEG .LR .POS .LL .POS>
                       <PRIN1 <FIX <+ .5 .POS>>>>
               <TERPRI>
               <POSITION .XCENTER .YCENTER>>>

<SET BOX '(<POSITION 0 0> <LINE 0 1> <LINE 1 1> <LINE 1 0> <LINE 0 0>)>

<SET TOWER
     '(<SCALE 0 64 0 64>
       <WINDOW .BOX 0 32 0 32>
       <WINDOW .BOX 0 16 32 48>
       <WINDOW .BOX 0 8 48 56>
       <WINDOW .BOX 0 4 56 60>
       <WINDOW .BOX 0 2 60 62>
       <WINDOW .BOX 0 1 62 63>)>

<SET CIRCLE
     <FUNCTION (INC "AUX" (DONE <+ .INC 6.2832000>))
               <REPEAT ((N 0))
                       <PLOT <SIN .N> <COS .N>>
                       <COND (<G? <SET N <+ .N .INC>> .DONE> <RETURN DONE>)>>>>

<SETG GRAPH
      <FUNCTION (FUNC
                 "OPTIONAL"
                 (XINC </ <- .RIGHT .LEFT> 50.0>)
                 (XMIN .LEFT)
                 (XMAX .RIGHT))
                <SET PEN+DOWN #FALSE()>
                <REPEAT ((X .XMIN))
                        <PLOT .X <.FUNC .X>>
                        <SET X <+ .X .XINC>>
                        <COND (<G? .X .XMAX> <RETURN DONE>)>>>>
<SET LEFT 0>
<SET RIGHT 1>
<SET BOTTOM 0>
<SET TOP 1>
<SET SET+POINT+CHAR 29>
<SET LONG+VECTOR+CHAR 30>
<SET OUT+VECTOR+CHAR 28>
<SET PEN+DOWN #FALSE()>

<SET YPOS <SET YPOS 0>>
```

```
<SET XPOS <SET YPOS 0>>
<PRINC "
IMLAC? ">
<COND (<=? <READ> Y>
       <SET LBOUND <SET BBOUND <- 0 <SET RBOUND <SET TBOUND 200>>>>>
       <SET GRAPHICS<READER ,IMLAC<READER>
       <SET RERASE<SCREEN ,IMLAC<ERASE>>
       (<SET LBOUND -525>
       <SET RBOUND 475>
       <SET TBOUND 310>
       <SET BBOUND -690>
       <SET GRAPHICS<READER ,ARDS<READER>
       <SET RERASE<SCREEN ,ARDS<ERASE>>>
<SETG ERASE<SCREEN <FUNCTION ()
       <SET FPLOT<LIST ()>
       <SET FAGAIN T>
       <RERASE<SCREEN>>>

<SET FPLOT<LIST ()>
<SET FAGAIN T>


<SETG SPIRO
      <FUNCTION (LOOPS
                 LFACT
                 "OPTIONAL"
                 (PEN<POS 1.0000000)
                 (ROT 0.0000000)
                 (POINTS <* 15 .LOOPS>>)
                 "AUX"
                 (MLEN </ <FLOAT <- .LOOPS .LFACT>> <* 2.0 .LOOPS>>>)
                 (SLEN <* </ <FLOAT .LFACT> <* 2.0 .LOOPS>> .PEN<POS>>)
                 (MINC </ <* .LFACT 6.2831852> .POINTS>>)
                 (SINC </ <* 6.2831852 <- .LOOPS .LFACT>> .POINTS>>)
                 (START </ <* .ROT 3.1415926> 180>>)
                <SET PEN<DOWN #FALSE ()>
                <REPEAT ((MA .START) (SA .START) (N 0))
                        <PLOT
                         <+ 0.5 <* .MLEN <COS .MA>> <* .SLEN <COS .SA>>>
                         <+ 0.5 <* .MLEN <SIN .MA>> <* .SLEN <SIN .SA>>>>

                        <SET MA <+ .MA .MINC>>
                        <SET SA <- .SA .SINC>>
                        <COND (<G? <SET N <+ 1 .N>> .POINTS> <RETURN DONE>)>>>>>

<SETG PGRAPH
      <FUNCTION (FUNCT
                 "OPTIONAL"
                 (START 0)
                 (STOP <* 2 3.1415926>>
                 (INC </ <- .STOP .START> 50>>)
                <SET PEN<DOWN #FALSE()>
                <REPEAT (R (THETA .START))
                        <SET R <.FUNCT .THETA>>
                        <PLOT <* .R <COS .THETA>> <* .R <SIN .THETA>>>
                        <COND (<L? .STOP <SET THETA <+ .THETA .INC>>>
                                   <RETURN DONE>)>>>>

;
```