Class new title: 'Aurora'
  subclassof: Object
  fields: 'source destination function figure ground transparentground constantregister spareone sparetwo sparethree'
  declare: 'DoverB auselloc DstoreB Setcolor CstoreB CoverB Conly AtransoverB AtransstoreB auwriteloc Donly pmscreenrect AstoreB Aonly Bonly aureadloc Noop AoverB ';
  asFollows

This class has not yet been commented

INIT
classInit
  ["specify i/o words"
   auselloc _ 0177410.
   auwriteloc _ 0177411.
   aureadloc _ 0177412.
   pmscreenrect _ (00) rect: (640480).
   memauselloc _ 014000.
   memauwriteloc _ 010.
   AstoreB _ 002117. "alto stream into pm"
   CstoreB _ 000117. "stores figure color block into pm"
   DstoreB _ 000517. "a/d output into pm"
   AoverB _ 002103. "alto stream over pm"
   CoverB _ 000103. "figure color block over pm"
   DoverB _ 000503. "a/d output over pm"
   AtransoverB _ 012103. "ground transparent"
   AtransstoreB _ 012117. "ground transparent"
   Noop _ 0.
  ]

ACCESS TO PARTS
destination: destination

figure: figure

function: function

ground: ground

source: source

PRIMITIVE ACCESS
disabledatatransfer
  [
   memauselloc _ 014000. "DDT"
   memauwriteloc _ 012.
doit "primitive call to Aurora"
[
"self waitverticalinterval: 1 ;
disabledatatransfer ;
setsourcewin ;
setrasterwin ;
setfigureground ;
setfunc ;
enabledatatransfer ;
waitverticalinterval: 1."
]

user croak
] primitive: 105
enabledatatransfer
[

memauselloc _ 014000. "EDT"
memauwriteloc _ 010.
memauselloc _ 0.
]

setconst
[
"sets the constant register "
memauselloc _ 014000. "WCR_{c}"
memauwriteloc _ 0263.
memauwriteloc _ 0400 + constantregister.
]

setfigureground
[
"sets the figure and ground registers "
memauselloc _ 014000. "set figure"
memauwriteloc _ 0263.
memauwriteloc _ 0400 + figure.

memauselloc _ 014000. "set ground"
memauwriteloc _ 0267.
memauwriteloc _ 0400 + ground.
]

setfunc
[
memauselloc _ 014000. "sets the inmode register "
memauwriteloc _ 0261.
memauwriteloc _ (function lshift: 0-8) + 0400.

memauselloc _ 014000. "sets the op register"
memauwriteloc _ 0262.
memauwriteloc _ (function land: 0377) + 0400.
]

setpmcolortable: colordef
[
"sets the color table in the picture memory.
self waitverticalinterval: 1.
self disabledatatransfer.
memauselloc _ 014000.
]
memauwriteloc _ 0271.
memauwriteloc _ 0400 + colordef value.
memauwriteloc _ 0400 + colordef red.
memauwriteloc _ 0400 + colordef green.
memauwriteloc _ 0400 + colordef blue.

self enabledatatransfer."

user croak
] primitive: 106
setrasterwin | r
  "sets the destination window"
  r _ destination intersect: pmscreenrect.
  r empty []
  memauselloc _ 010000.
  memauwriteloc _ r leftside +110.

  memauselloc _ 010002.
  memauwriteloc _ (r top)/2 + 21.

  memauselloc _ 010001.
  memauwriteloc _ r width.

  memauselloc _ 010003.
  memauwriteloc _ (r height)/2 - 1.
]
setsourcewin"set alto source window for aurora"
[
  memauselloc _ 020000.
  memauwriteloc _ mem066. "starting memory address of bit map BCA goes here"

  memauselloc _ 020001.
  memauwriteloc _ (user screenrect width +15 )/16. " bit maps width in words BMR".

  memauselloc _ 020002.
  memauwriteloc _ (source width +15) /16. " source width in words"

  memauselloc _ 020003.
  memauwriteloc _ source height.

  memauselloc _ 020010.
  memauwriteloc _ 0261." format ... wrap in both x and y and one bit per point."
]
waitverticalinterval: n | i"wait for n vertical intervals"
["for i to: n do
[  until ((memaureadloc) land: 1) = 1 do []
 UTILITIES
black | r c i
[
    self standardcolortable.
    r _ user screenrect. 
    user displayoffwhile [
        self source: r;
        destination: r;
        figure: 1;
        ground: 0;
        function: CstoreB;
        doit. self function: Noop ; doit.]
] 
set: vec | c
[
    c _ Colordef new.
    c value: (vec1) ; red: (vec2) ; green: (vec3) ; blue: (vec4).
    self setpmcolortable: c.
] 
standardcolortable | c i
[
    c _ Colordef new.
    self set: (0 255 255 255).
    self set: (1 0 0 0).
    self set: (2 255 0 0).
    self set: (3 192 0 64).
    self set: (4 128 0 128).
    self set: (5 64 0 192).
    self set: (6 0 0 255).
    self set: (7 0 64 192).
    self set: (8 0 128 128).
    self set: (9 0 192 64).
    self set: (10 0 255 0).
    self set: (11 64 192 0).
    self set: (12 128 128 0).
    self set: (13 192 64 0).

    for i from: (14 to: 255) do
        [c value: i ; red: i ; green: i ; blue: i.
        self setpmcolortable: c.]
] 
test | r c i
[
    r _ Rectangle new fromuser. 
    user displayoffwhile [
        self source: r;
        destination: r;
        figure: 1;
        ground: 0;
function: AstoreB;
doit. self function: Noop ; doit.]
]
white | r c i
[
 self standardcolortable.
r _ user screenrect.
 user displayoffwhile [
  self source: r ;
destination: r;
figure: 0;
ground: 0;
 function: CstoreB;
doit. self function: Noop ; doit.]
]

DEBUGGING

SystemOrganization classify: Aurora under: 'Aurora'.
Aurora classInit
Class new title: 'Colordef'
    subclassof: Object
    fields: 'value red green blue'
    declare: ''; 
asFollows

This class has not yet been commented

INIT
value: value red: red green: green blue: blue |
    [ ]

ACCESS
blue
    [ blue ]
blue: blue
green
    [ green ]
green: green
red
    [ red ]
red: red
value
    [ value ]
value: value

SystemOrganization classify: Colordef under: 'Aurora'.