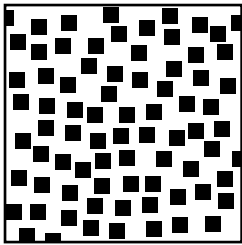
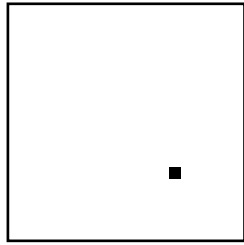


problem 1 transition

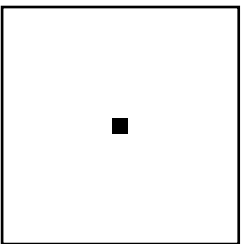
not frightened



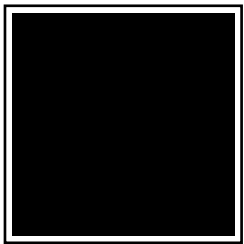
frightened



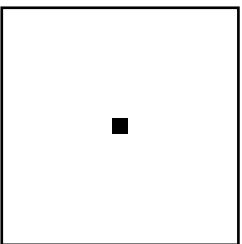
not angry



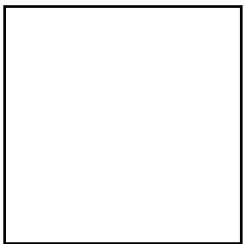
angry



not happy



happy



description
above are three transitions of a dbn square.

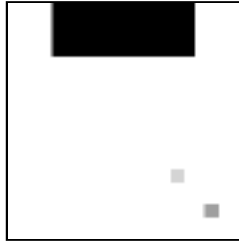
the top transition demonstrates a frightened square without its family.

the middle transition demonstrates an angry square which swells with malice.

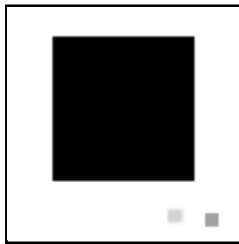
the bottom transition demonstrates a happy square which has escaped the box.

problem 2 movement

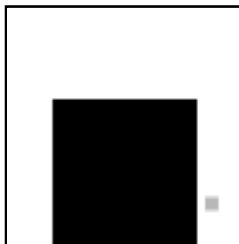
1 of 3



2 of 3



3 of 3



description
three squares are at play in the above sequence.

one moves with linear motion
one with quadratic motion
and one with sinusoidal motion.

the full animation can be seen on the mas110 website.

to the left is the dbn code.

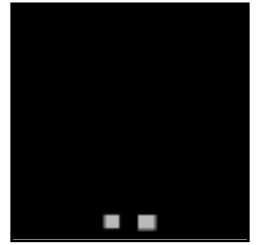
```

dbn code (prob 2)
//three squares in play
//sine approx (dbn book)
number sine n
{
  smaller? n 75
  {
    smaller? n 50
    {
      smaller? n 25
      {
        value (50+(n*2))
      }
      notsmaller? n 25
      {
        value (50+(2*(50-n)))
      }
    }
    notsmaller? n 50
    {
      value (2*(75-n))
    }
  }
  notsmaller? n 75
  {
    value (2*(n-75))
  }
}
//set variables
set x 120
set y 0
set z 50
set a 50
set b 0
//loop
forever
{
  //big square
  field 20 x 80 (x+60) 100
  //little square
  field 70 z 75 (z+5) 10
  //linear motion
  set x (x-1)
  //quadratic motion
  set y (y+1)
  set z (y*y)
  //small square limit
  notsmaller? z (x-20)
  {
    set y 0
  }
}
//the end
smaller? x (z+10)
{
  set x 0
  set z -6
}
//sine motion
field 85 a 90 (a+5) 40
set a (<sine b>/5)
set b (b+10)
notsmaller? b 100
{
  set b 0
}
}
pause 10
paper 0
}

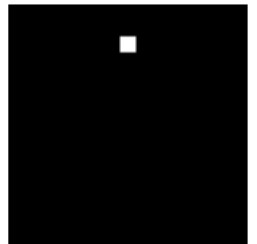
```

problem 3 living

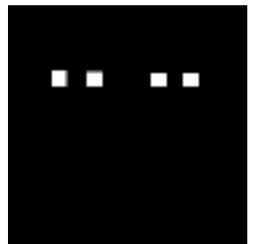
1 of 3 reproduction



2 of 3 development



3 of 3 death



description
the above sequence shows the lifecycle of a dbn square.

frame 1 shows two squares coming together.

frame 2 shows a new square emerging

frame 3 shows the new square destroyed

the full animation and dbn code can be seen on the mas110 website.