Goal of the Game is to have tom capture jerry by having his image overlap jerry while jerry is trying to run away
Creating the Characters

We Used Microsoft Pain to remove Our Heads from a picture and placing them over Tom and Jerry
How to move your character?

Change the values of C and R using the switches to change vbp and hbp
We Use the Matlab code to create the COE file For the Chosen Image

- % Read the image
  - img = imread(imgfile);
- h = size(img, 1); w = size(img, 2);
- % Open the .coe file
  - s = fopen(outfile,'W');
- % Print header
  - fprintf(s,'%s
','; VGA Memory Map ');
  - fprintf(s,'%s
','; .COE file with hex coefficients ');
  - fprintf(s,'; Height: %d, Width: %d

- % Convert color channels to binary
  - R = dec2bin(img(:,:,1)',8);
  - G = dec2bin(img(:,:,2)',8);
  - B = dec2bin(img(:,:,3)',8);
- % Stitch together the output words
  - out = bin2dec([ R(:,1:4) G(:,1:4) B(:,1:4) ]); 
  - img2 = img;
  - for i=1:h-1
    - sol = i*w-w+1; % Start of line
    - eol = i*w; % End of line
    - % Print out words
      - fprintf(s,'%03X,',out(sol:eol,:));
      - fprintf(s,'
');
    - % Save new image
      - img2(i,:,1) = bin2dec(R(sol:eol,1:4)'*2^4';
      - img2(i,:,2) = bin2dec(G(sol:eol,1:4)'*2^4';
      - img2(i,:,3) = bin2dec(B(sol:eol,1:4)'*2^4';
  - end
  - % Print out the last row
    - fprintf(s,'%02X,',out(h*w-w+1:end-1,:));
  - fprintf(s,'%02X',out( mend,:));
  - img2(h,:,1) = bin2dec(R(h*w-w+1:end,1:4)'*2^4';
  - img2(h,:,2) = bin2dec(G(h*w-w+1:end,1:4)'*2^4';
  - img2(h,:,3) = bin2dec(B(h*w-w+1:end,1:4)'*2^4';
- % Close the .coe file
  - fclose(s);
We Used the Core Generator to generate Image for the Created .COE file
We Use Single Port Rom because it is easy and nice
• Read Width is how many color bits for the image (we used 12 bits)

• Read Depth is the multiplication of the dimensions ex for a 130x130 pic the read depth is 130x130=16900
We Browse looking for that coe file then we generate it as a block memory
Finding the Address size for the sprite
Using the windows calculator (programmer mode)

We are using 15 bits for the 130x130 image

So address <=(14 downto 0);