Planning and management

The Gantt chart has shown the plan which we have organized before on our project. basically, most of the programming has been finished at the beginning of the summer term, and the detection

Previous:

The project has been designed to be written in the methods of calculating and print the snake by the vivado\_hls. However, when testing was in the progressing, what has been found is that although the snakes could be correct output when the detection of the image was giving the corresponding instructions. The original snake is attracted by the function. Initial pixels are determined by four, and the distances the 0.1\*length from each pixel. Similarly, the width of the snake is 0.1\*width of the total images. By taking the range of the area, determined each pixel. The snakes could be shown in the white colors. The method of given colors could be changed each pixel RGB value. For instance, white for 255 separately, and black for 0 separately. By utilizing the methods of output, the background becomes black, and the snake becomes white.

Alternatively, one of the most difficult things is how to change the moving of the snake, the methods of changing are storing four coordinates of the pixels, putting the tails of snake’s pixels into the array, followed by the previous pixel ‘s coordinates. The reason why the arrays are in such an order is each time when there might be an instruction to control the changing directions of the snake, what has been changed is the tails pixel into the head pixels, and there would be 12 situations, 3 situations for each direction. (the opposite changing direction has been not taken into the considerations).

In the vivado\_hls level, the test could be perfect, the value passed by the detection function is performed well on the simulation. And output has been shown below:

Although the code also uploaded an update in the level of vivado, when the FPGA board is running, there would be a higher delay which cannot show the snake frequently. After analyzing the utilizing of the space and performance of the board, there would be significant parts of calculating the strand deviation and. Printing the snake. Due to the algorithms are designed to go over all pixels of the images, by adding them up to get the value which could affect a little by the intensity of the light. After taking a heated discussion of the significance of these two parts, the group finally decides that the detection of the images should take the most important parts during the project. As the results, the output of printing the snake should be streamlined.