Hello everyone,today I am going to talk about our outcomes and conclusions about miniproject 2.The structure of the 2-D PR filter we designed is shown in this figure.We decimate each column of pixels by 2 times,and then decimate each row of pixels by 2 times.Based on this filter structure, we carry out the following tests

For basic outcome，we input the source image and get the image shown here（第一个图片）.By testing it，we got the PSNR is 162 decibel.Compared with the source image，we get the conclusion。the quality and data-size of the output image remain the same.

For the second question，We discard one, two, three sub-bands respectively.Looking at these three output images, we find the sharpness is lower.Combined with their PSNR and sizes，we come to the conclusion.the more discarded sub-bands, the smaller the PSNR value and the lower the quality of the image.But as long as sub-band LL is not discarded, the image size is basically the same.

Next, I will explain the part of advanced outcomes.The GUI interface we designed looks like this.It can be roughly divided into three parts：1.Select and start buttons 2.Parameters and 3.output images.By changing the weight of each sub-band，We get different compression effects.And what we came up with is that the weight of each sub-band decreases, the details of the image remain sharp.For the PSNR value, it just have a little change . And the size of the image would be smaller.

These are all the conclusions we got from the project，Thank you for listening to.