Question 1: Differentiate between LED and Plasma panels.

Ans:

1) Plasma Panels use plasma (or electrically charged ionized gas) cells along with phosphor to create images on the screen. They don't require backlighting. LED panels use liquid crystal elements and arrays of light-emitting diodes to produce images on the screen. They use LEDs for backlighting.
2) Plasma displays are much heavier than LED displays.
3) Plasma displays generate more heat and use more energy then LED displays.
4) Plasma displays have higher contrast ratio, darker black levels and hence have better picture quality than LED displays.
5) LED displays are the brightest display panels. They are much much brighter than Plasmas, but have narrower viewing angles.

Question 2: Describe the two techniques to enhance the quality of an image.

Ans:

The two techniques to enhance the quality of an image are as follows—

i) Spatial domain method
ii) Frequency domain method

1) **Spatial domain method:** For simplicity, assume that the image I being considered is formed by projection from scene S (which might be a two- or three-dimensional scene, etc.).

   The spatial domain is the normal image space, in which a change in position in I directly projects to a change in position in S. Distances in I (in pixels) correspond to real distances (e.g. in meters) in S.

   This concept is used most often when discussing the frequency with which image values change, that is, over how many pixels does a cycle of periodically repeating intensity variations occur. One would refer to the number of pixels over which a pattern repeats (its periodicity) in the spatial domain.

   In most cases, the Fourier Transform will be used to convert images from the spatial domain into the frequency domain.

   A related term used in this context is spatial frequency, which refers to the (inverse of the) periodicity with which the image intensity values change. Image features with high spatial frequency (such as edges) are those that change greatly in intensity over short image distances.

   Another term used in this context is spatial derivative, which refers to how much the image intensity values change per change in image position.

2) **Frequency domain method:** For simplicity, assume that the image I being considered is formed by projection from scene S (which might be a two- or three-dimensional scene, etc.).

   The frequency domain is a space in which each image value at image position F represents the amount that the intensity values in image I vary over a specific distance related to F. In the frequency domain, changes in image position correspond to changes in the spatial frequency, (or the rate at which image intensity values) are changing in the spatial domain image I.

For example, suppose that there is the value 20 at the point that represents the frequency 0.1 (or 1 period every 10 pixels). This means that in the corresponding spatial domain image I the intensity values vary from dark to light and back to dark over a distance of 10 pixels, and that the contrast between the lightest and darkest is 40 gray levels (2 times 20).

The spatial frequency domain is interesting because: 1) it may make explicit periodic relationships in the spatial domain, and 2) some image processing operators are more efficient or indeed only practical when applied in the frequency domain.

In most cases, the Fourier Transform is used to convert images from the spatial domain into the frequency domain and vice-versa.

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Question 3: Write a C Program to draw a rectangle using initgraph function.

Ans:

```
#include <stdio.h>
#include <graphics.h>

int main()
{
	int gdriver = DETECT, gmode;

	int x1 = 50, y1 = 150;
	int x2 = 150, y2 = 150;
	int x3 = 50, y3 = 100;
	int x4 = 150, y4 = 100;

	initgraph(&gdriver, &gmode, “C:\\tc\\bgi”);

	line(x1, y1, x2, y2);
	line(x3, y3, x4, y4);
	line(x1, y1, x3, y3);
	line(x2, y2, x4, y4);

	closegraph();
}
```