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Picture Lab

A1

1. It takes 8 bits, or one byte, to represent values 0 to 255.
2. It takes 3 bytes, one per color, To represent a color in the RGB color model. If you are also storing alpha values, you will need 4 bytes instead.
3. 307,200 pixels are needed to represent a 640x480 picture.

A2

1. You can make pink with RGB values (255, 0, 255).
2. You can make yellow with RGB values (255, 255, 0).
3. You can make purple with RGB values(127, 0, 255).
4. You can make white with RGB values (255, 255, 255).
5. You can make dark gray with RGB values (100, 100, 100).

A3

1. The row index for the top left corner of the picture is 0.
2. The column index for the top left corner of the picture is 0.
3. The right most column index of the image is 639.
4. The bottom most row index is 479.
5. The row index increases from top to bottom.
6. The column index increases from left to right.
7. When I set the zoom to 500%, I can see the individual pixels of the image.

A5

1. The getPixels2D method is called in multiple methods of the Picture class.
2. The getPixels2D method is declared/instantiated in the SimplePicture class.
3. This code will not compile because DigitalPicture is an interface, so a DigitalPicture object cannot be made.
4. This code will compile because the SimplePicture class implements the DigitalPicture interface.
5. This code will compile because the Picture class is a subclass of the SimplePicture class and therefore also implements the DigitalPicture interface.
6. This code will compile because the Picture class is a subclass of the SimplePicture class.
7. This code will not compile because the Picture class is a subclass of the SimplePicture class; you can’t declare an object of a subclass when it is instantiated as its superclass.

A7

1. The body inside the nested for loop will be executed 90 times.
2. The body inside this nested for loop will be executed 112 times