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Assignment Lesson 2

1. Write an algorithm to store data of a 2D image seen as a 2D array for black and white images.

2. Write an algorithm to store data of a 2D image seen as a 2D array for color images.

Answers

1). Write an algorithm to store data of a 2D image seen as a 2D array for black and white images.

```
function storeDataBlackWhite(imageArray, width, height) {
    // Initialize an empty object to store the pixel data
    let imageData = {};
    // Loop through each row in the imageArray
    for (let i = 0; i < height; i++) {
        // Create a key in the imageData object for each row
        imageData[i] = {};
        // Loop through each pixel in the row
        for (let j = 0; j < width; j++) {
            // Check if the pixel is black (0) or white (1)
            if (imageArray[i][j] === 0) {
                // If the pixel is black, replace it with the string 'B'
                imageData[i][j] = 'B';
            } else {
```

```
                // If the pixel is white, replace it with the string 'W'
                imageData[i][j] = 'W';
            }
        }
    }
    // Return the imageData object containing the pixel data
    return imageData;
}
```

2). Write an algorithm to store data of a 2D image seen as a 2D array for color images.

```
function storeDataColor(imageArray, width, height) {
    // Initialize an empty object to store the pixel data
    let imageData = {};
    // Loop through each row in the imageArray
    for (let i = 0; i < height; i++) {
        // Create a key in the imageData object for each row
        imageData[i] = {};
        // Loop through each pixel in the row
        for (let j = 0; j < width; j++) {
            // Check if the pixel is red (1), green (2), or blue (3)
            if (imageArray[i][j] === 1) {
                // If the pixel is red, replace it with the string 'R'
                imageData[i][j] = 'R';
            } else if (imageArray[i][j] === 2) {
```

```
            // If the pixel is green, replace it with the string 'G'
            imageData[i][j] = 'G';
        } else {
            // If the pixel is blue, replace it with the string 'B'
            imageData[i][j] = 'B';
        }
    }
  }
  // Return the imageData object containing the pixel data
  return imageData;
}
```