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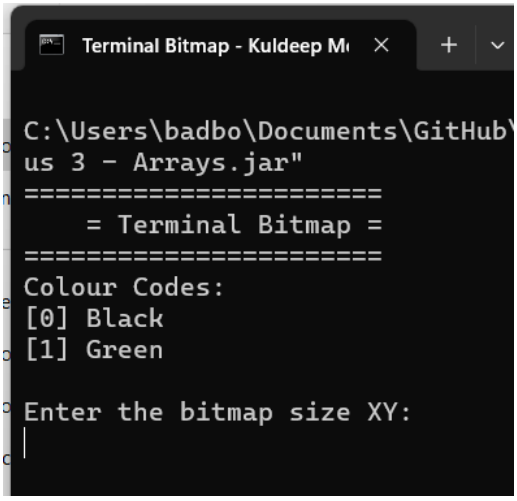
Bonus ICE 3 – Arrays

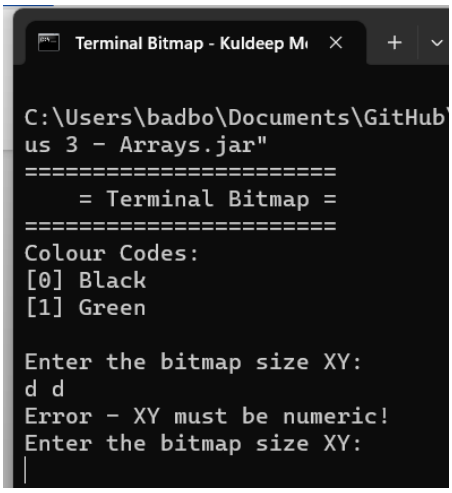
Part 2- Initial Screen



Screenshot 1

Context: The Application launches with the Banner name and greeting, it prompts the user with instructions that define how the program will understand the user's binary inputs (0, 1) and how they correspond to the printed colors – Black and Green.

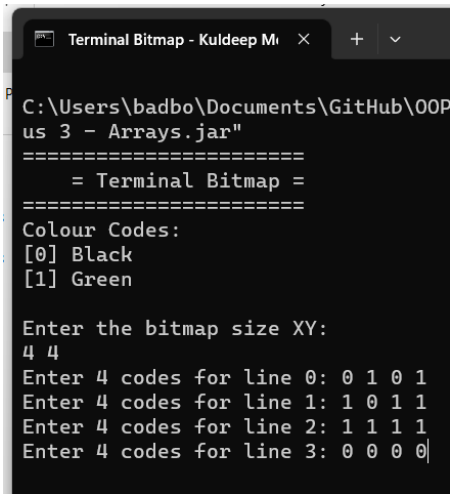
Part 3 – Input screen and validation



Screenshot 2

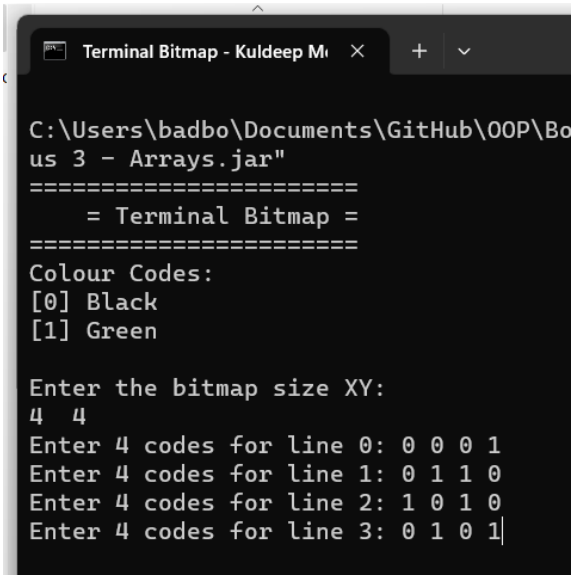
Context: The user input invalid values for the bitmap size coordinates (X, Y), the program then displayed an error message to the user and prompted for the X and Y values.

Part 4- Input and Output screens



Screenshot 3 and 4

Context: User had entered correct input as per the instructions provided, after processing the code the terminal bitmap image was generated!



Screenshot 5 and 6

Context: User had entered correct input as per the instructions provided, after processing the code the terminal bitmap image was generated!

Part 5- Answer these questions.

Question 1. What is a multidimensional array?

A simple way to explain what a multidimensional array is like the structure of a table with rows and columns. Within these arrays, each cell can hold value of the same data and can be accessed through different “coordinates” – which in this case (keeping the table concept in mind) would be through the row and column indexes.

Question 2. How many dimensions can a multidimensional array have in total?

According to Java documentation, there is a limit of 255 dimensions for a multidimensional array. However, it's important to note that increasing the number of dimensions in an array makes it more complex, difficult to manage, and harder to access - Hence why even when working with the most complex arrays, they ideally don’t exceed more than three to four dimensions.