CS 6505 - Homework 11

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For each vertex i, we let the corresponding exam be E_i. There are 3 time slots corresponding the the three colors. For each edge ij in the graph G, we create a student, s_{ij} who is taking exams E_i and E_j. The EXAM SCHEDULING will output an assignment of E_i (the vertices) to the 3 time slots. We color the corresponding vertices with the corresponding colors. We wish to prove that this is a valid 3 coloring. In other words, we wish to show that no two edge ends get the same color, which holds by construction since every student (edge) taking two exams (the endpoints) is taking them in different time slots (color) (by the output of EXAM scheduling).