Assignment 1: Which requirements do recovery strategies need to fulfill? In particular, how can the correctness be ensured?

Assignment 2: Given is the following scenario:

At which point in time \((t_a - t_g)\) can transactions \((T_1 - T_4)\) swap their modified pages? Hereby, consider the different concrete recovery strategies. Discuss advantages and disadvantages of these strategies.

Assignment 3: Gegeben sei folgendes Szenario:

Thereby, a savepoint was created at \(t_s\). Explain the restart steps in this scenario after the failure at \(t_f\).

Assignment 4: Explain the process of the Redo protocol based on the following example. To do this, explain all necessary components and describe the recovery process. Given is the schedule \(s = r_1(x)w_1(x)r_2(y)c_1w_2(y)c_2\), whereby a system failure occurs directly after operation \(w_2(y)\).

Assignment 5: Discuss the difference between the standard and the Twin-block shadow memory technique. What are advantages and disadvantages of these concepts?
Assignment 6: Which methods offer the possibility of recovering a database after the occurrence of a media error? What types can be distinguished?