Concurrent Programming Homework 1

1. Associative Container i.e. Maps is used.
2. The ***Thread-Specific Storage Design Pattern*** is used, which allows multiple threads to use one 'logically global' access point to retrieve an object that is local to a thread, without incurring locking overhead on each access to the object.
3. (a,a) ; (a,b) ; (b,b) ; (b,d) ; (e,e) ; (e,f) ; (f,f)
4. Data race condition takes place in all of the conflicting cases.
5. If some constraints are applied like, knowing the numbers of threads or not allowing a set after a remove or if we know the data type of the variable, then a less complex data structure can be used. Thus arrays can be implemented. Two arrays, one containing the Thread ID and the other containing the Thread Local variable (value). Index of one array will be pointed to the thread id and the other index to the Thread Local variable (value).