Final Exam - Software Engineering (Spring 2021)

(PART A)

This is a take-home (timed) exam. It consists of 2 questions (PART A and PART B) worth a total of 30 points.

You have a maximum of 40 minutes to answer Part A (9:00 – 9:40 am). Submission will close by 9:45 am.

The two parts need to be submitted separately!!! Note that the access to the question and the submission itself will remain open only for said timing. So, please ensure you submit on time.

Please read the instructions and questions carefully before you answer the exam.

For all design questions your **UML class diagram must include class names, multiplicities, navigability and a <<stereotype>> designation** of the role the class is playing in the pattern, i.e. the class in the pattern structure diagram. If it is part of multiple patterns there may be more than one stereotype specified. You also should specify **state and behavior** information to cover the requirements stated in the problem.

Credit is given for what you write, not what you are thinking. Partial credit will be given based on content, not quantity.

GOOD LUCK!!!

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(PART A)

Submit it via moodle in the **Final Exam Part A**. The final exam - part A must be submitted by **9:45 AM**.

Only a single pdf file is to be submitted for Part A. So, please ensure your text and figure are in the same document.

PART A (10 points)

Assume several Web-based airline reservation sites, such as *Orbitz*, *Expedia*, and *Travelocity*, decide to make their services available via complex subsystems of Java objects running on their proprietary servers. Each reservation site provides equivalent services, but the objects in the individual subsystems that support these services differ (i.e., the objects in the *Orbitz* subsystem are different from those in the *Expedia* subsystem, etc.).

Your development team at a large travel agency is assigned the task of providing a local Java client on each agent's personal computer that supports easy perusal of the information on the various sites. As the agency's management is convinced that more travel sites will provide such interfaces in the future, flexibility in adding access to new remote sites without disturbing the bulk of the system is essential.

Come up with a preliminary design using at least **two patterns** we discussed in class that facilitate local access to these remote resources in a way that also supports the addition of new sites in the future. Be sure to follow the instructions on the cover sheet of this exam regarding the UML diagram you present.