Architectures for Software System

**Investigation into .NET framework**

Assignment 3

**Assignment Description:**

The objective of this assignment is to provide you with an opportunity to investigate a

Framework .NET, Comprehensive web-services platform allowing applications to communicate and share data over the Internet.. You will analyze it based on what you have learned this semester.

To carry out this assignment you will work as a team to gain a thorough understanding of

the framework, standard, or product. Use may use the Web to find out related document. Based on the information you discover, answer the following questions

**Part 1 – Introduction:**

Briefly introduce the standard and its history.

* For what purpose (domain and/or business context) was the standard created? (Nêu mục đích của .NET Framework (ko phải ASP .NET) để làm j, nêu phạm vi hoặc/và business context)
* Describe the stakeholders: Who created it? Who (domain or community) uses it? How do they use it? (ai tạo ra .NET Framework, ai dung, dùng như thế nào)
* Are there other related and/or competing standards? If so, list them and briefly explain how they differ from the standard you are analyzing. (có những tiêu chuẩn nào cạnh tranh với .NET Framework ko. Nếu có, liệt kê mô tả ngắn xem chúng khác nhau ntn)

**Part 2 – Description of the Standard:**

Describe the basic architecture of the standard.

* What styles/patterns does it utilize? Use the terminology presented in the course to describe the architecture. (.NET Framework sử dụng styles, pattern nào. Mô tả kiến trúc bằng thuật ngữ trong khóa học)
* Are there semantics for using the framework, product or standard? How are they enforced and what are the consequences of violating them?
* What variability mechanisms are built into the framework, product or standard – how does it meet different needs of the various stakeholders and/or the business contexts the framework, product or standard might be used in? (có những cơ chế được dùng để xây dựng thành framework, product or standard, làm sao để những framework, product or standard thỏa mãn những yêu cầu khác nhau từ các stakeholder khác nhau)

**Part 3 – Analysis of Properties, Tradeoffs, and Applicability:**

Analyze the standard with respect to the following:

* Describe the architectural drivers (quality attributes in particular) that the framework, standard, or product is trying to maximize and how these are related to the business context, domain, and/or stakeholder community. (mô tả các architectural driver ( ở đây chỉ tập trung vô QA) mà cái .NET này làm cho tối ưu, tức là mô tả .NET nó làm cho thuộc tính chất lượng nào đc nâng cao và nó liên quan đến business context, phạm vi, hoặc/và stakeholder ntn)
* Discuss the structures of the system and explain how the structures support the key goals and architectural drivers as discussed in the previous question. (thảo luận cấu trúc hệ thống và mô tả làm thế nào cấu trúc hỗ trợ những goal chính và architectural drivers)
* Can you analyze how well these architectural drivers supported (or not supported) by the artifacts and design descriptions you were able to find? (phân tích architectural drivers được hỗ trợ tốt ntn bởi các artifacts and design descriptions mà bạn tìm thấy)

**Assignment Guidelines:**

**Length -** Your paper should be 12 pages or less in length – while there is no minimum

length, 12 pages is a HARD upper limit!

**Sources -** Be sure that you credit all sources and references. Do not simply copy

information from the web (or any other source). You will be evaluated on how well you

*summarize* and *synthesize* the information that you find. *Again, we strongly recommend*

*that you consult multiple sources to support your research and analysis*. Include a list of

references at the end of your document.

**Cooperation** – This is a team project – you will turn in one team report. Discuss and

complete this assignment as a team, and make sure that every member participates.

**Composition** - Use good documentation practices shown in class for all architectural

diagrams that you create. Grammar and correct use of English is important and will

count toward your grade.

**General Hints -** Note that your analysis may be challenging. It is supposed to be a

realistic assessment of an existing standard that you be thinking of utilizing in a product

or system – a very practical and realistic situation encountered in practice. You should utilize multiple sources to support your research and your analysis. Note that it may have weak design documentation – you will have to interpret what you can find to the best of your ability. You may discover that there are a suite of products or standards – exercise care with respect to the scope of your analysis. If you limit the scope and/or detail, be explicit about this and be consistent in your analysis with scope and the level of abstraction. It may be unclear in describing the design and how technologies and specific implementation structures (code, data) map to the standard or framework. Again, interpret what sources you can find to the best of your ability. An important aspect of this assignment is to recognize what is missing, poorly specified, and poorly documented. Stick to the language and concepts of the course – avoid buzzwords and assumption that buzzwords are interpreted the same way by everyone. This framework may differ from a traditional system in that they are intended to support multiple contexts. If this is the case, be sure to explicitly consider variability as an architectural driver and identify the mechanism (or lack of mechanisms) to support this variation. *This is intended to be a realistic assignment that represents a task that is common to an architect in industry. The idea is to provide a context in which you can apply concepts from the class to the analysis of a real, practical architectural framework, product, or standard.*

**Grading Criteria:**

The grading will be apportioned as follows:

• Part 1: 30 points

• Part 2: 30 points

• Part 3: 40 points