**CS 4321 - Video Lecture Expectations**

**Video P1L2 – Life Cycle Models (32 min)**

Watch video P1L2 on Udacity. Answer the questions below and submit on Blazeview (HW- P1L2). Instructions:

* Do not remove the questions.
* You can provide the answer(s) where the blank is, but preserve the underline (or use a different color for the answers)
* Or, you can provide the answers below the questions. For example, you could type: Answer: x, y, z.

**Questions to be answered**

1. What are 3 characteristics of projects that are amenable to an agile approach, according to Professor Barry Bohem?

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1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ which is the field within software engineering that deals with establishing the needs of stakeholders that are to be solved by the software.
2. The cost of correcting an error depends on the number of subsequent \_\_\_\_\_\_\_\_\_\_\_\_\_\_ that are based on it. Thus, it is important to detect errors made in understanding requirements, early.
3. \_\_\_\_\_\_\_\_\_\_\_\_\_ is the step in requirements engineering which involves the study and deeper understanding of the collective requirements.
4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is the step in requirements engineering in which the collective requirements are suitably represented, organized and save so that they can be shared.
5. List the five steps in requirements engineering?

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1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is the phase of software development where software requirements are analyzed in order to produce a description of the internal structure and organization of the system.
2. List the four fundamental principles of implementation.

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1. Coding standards – All large companies have coding standards. Usually better to use an existing standard:

C - <http://caxapa.ru/thumbs/468328/misra-c-2004.pdf>

C++ - [http://www.gotw.ca/publications/c++cs.htm](http://www.gotw.ca/publications/c%2B%2Bcs.htm)

C# - [https://docs.microsoft.com/en-us/previous-versions/dotnet/netframework-1.1/czefa0ke(v=vs.71)](https://docs.microsoft.com/en-us/previous-versions/dotnet/netframework-1.1/czefa0ke%28v%3Dvs.71%29)

Java - <https://google.github.io/styleguide/javaguide.html>

JavaScript - <https://google.github.io/styleguide/jsguide.html>

Linux - <https://github.com/torvalds/linux/blob/master/Documentation/process/coding-style.rst>

<http://www.nws.noaa.gov/oh/hrl/developers_docs/General_Software_Standards.pdf>

<https://docs.microsoft.com/en-us/dotnet/standard/design-guidelines/general-naming-conventions>

1. Making sure we build the right system is called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and making sure we correctly build the system is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is the activity that sustains the software product as it evolves throughout its life cycle, specifically in response to bug reports, feature requests and environment changes
3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ maintenance projects eliminate problems with the code, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ maintenance projects accommodate feature requests, and in some cases just to improve the software, for example, to make it more efficient. Finally, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ maintenance projects take care of the environment changes
4. During maintenance every time you modify your application you have to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ testing which is the activity of retesting software after it has been modified to make sure that the changes you made to the software work as expected, and that your changes did not introduce any unforeseen effect.
5. The main function of a software life cycle model is to determine the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of the different activities and the \_\_\_\_\_\_\_\_\_\_\_\_\_ criteria between activities.
6. The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ model progresses through an orderly sequence of steps, from the initial software concept, down until the final phase. And at the end of each phase there will be a review to determine whether the project is ready to advance to the next phase.
7. The Waterfall model performs well under these three conditions:

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The Waterfall model is not suitable for many real-world projects because many (or all) of these conditions are not true.

1. What is one advantage and one disadvantage of the waterfall model?

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1. What are the four main phases of the spiral model?

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1. List four advantages of the spiral model.

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1. List two disadvantages of the spiral model.

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1. Using the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ lifecycle model, developers start by developing the parts of the system that they understand, instead of working on developing a whole system. The partial system is then shown to the customer and the customer feedback is used to drive the next iteration, in which either changes are made to the current features or new features are added.
2. List one advantage and one disadvantages to evolutionary prototyping.

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1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is another kind of prototyping in which the prototype is just used to gather requirements, but is thrown away at the end of the requirements gathering, instead of being evolved.
2. The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ lifecycle model has four phases: inception, elaboration, construction, and transition. In each phase we perform (to varying degrees) all the standard software activities
3. The three steps, in order, for Test Driven Development (an Agile approach) are:

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1. List six considerations when choosing a software process model?

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1. List three mistakes involving people that predictably lead to bad results in software projects

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1. List two process related mistakes that predictably lead to bad results in software projects

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1. List three technology related mistakes that predictably lead to bad results in software projects

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