Software Project Tools

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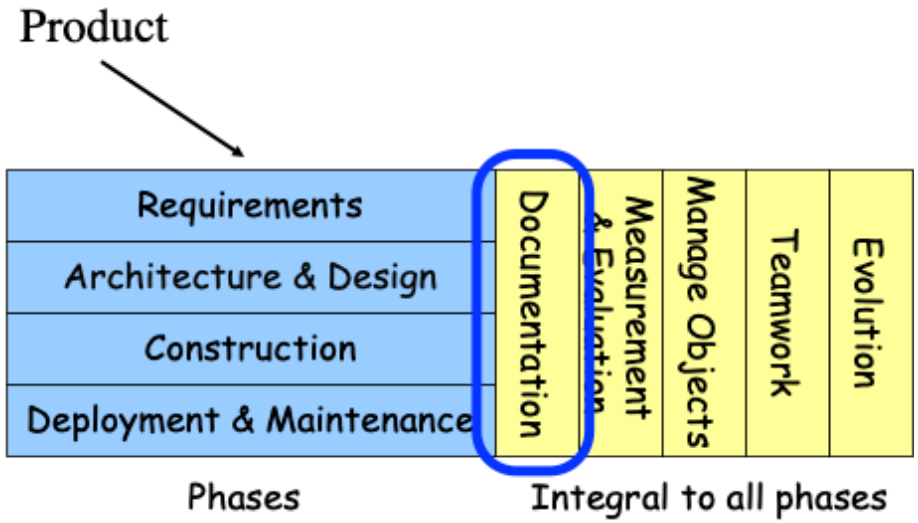
Installation of Tools (HW1)

- In this course, we use SE tools.
- For the rest of your career as a software engineer, you will use these and other SE tools.
- Also, It is a part of our job as software engineers to learn and install new tools.
- So, students are required to install tools and make documentation about them (HW1).
- Students can work with other students to finish HW1 as long as they list the names of the student with whom they work; even in this case, students do not copy others' work.

Documentation Tools

- We use various types of files formats, including XML, YAML, JSON, and Markdown.
- Documentation Tools include the tools for editing text/binary files and converting one type of file into another. We use Visual Code Studio for editing any files.

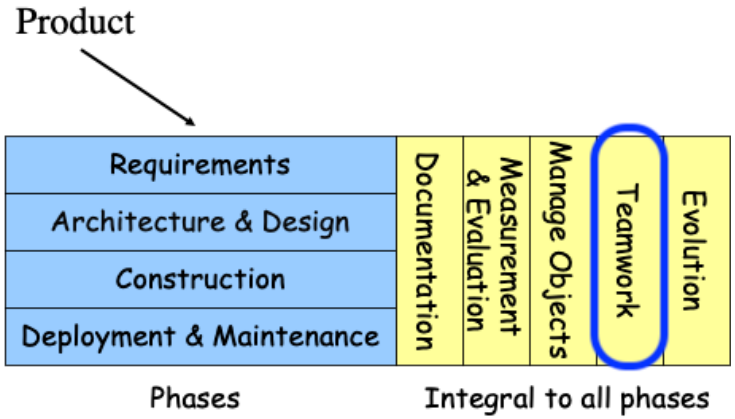


Related #Pdf files

- Use `SE_tools1_doctools.pdf` for understanding various file formats and converting tools for them.
- Use `SE_tools1_vcs.pdf` for Visual Studio Code related ideas.

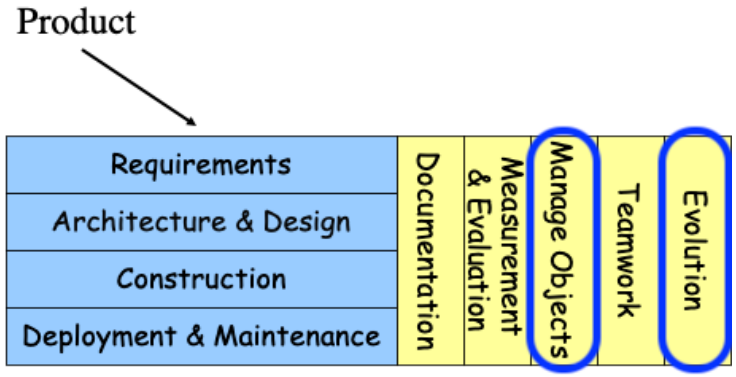
Teamwork Tools

- Teamwork Tools include any tools for communication and information sharing.
- Students can use anything for effective communication, including email, MS Teams, or Slack.
- Notion is one of the most popular tools for storing and sharing information. Visit Notion to register.



Evolution and Manage Objects Tools

- When we develop software, we made many changes from various reasons.
- Also, when we make changes, we have many objects to manage.
- We use version control system (VCS) to manage objects and evolution.
- In this course, we use Git and GitHub as the VSC tool.



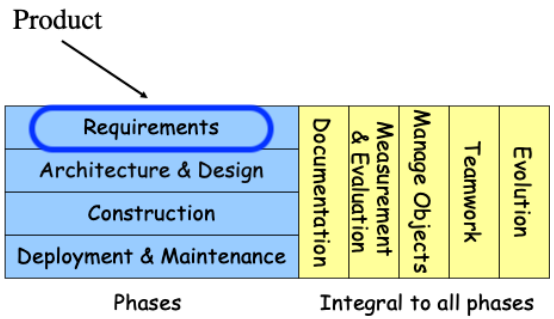
- We use Git to trace and manage objects changes and evolution of code/test.
- We use GitHub service to collaborate with other people with Git.
- Students need to install Git and register for the GitHub.

Related #Pdf files

- Use **SE_tools1_git.pdf** for setting up and using Git and GitHub.

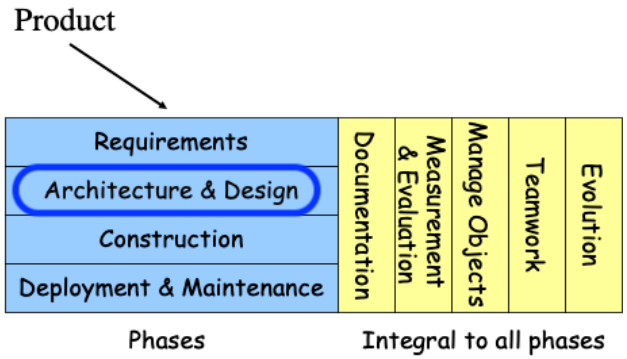
Requirement Tools

- Traditionally, there are many Requirement Tools including interviews and user activity observations.
- In the Agile Process Model, we do not use these tools, but instead, we use "User stories" to describe requirements.
- We will discuss this in detail in Module 2 (Project Preparation) and Module 4 (Project Implementations).



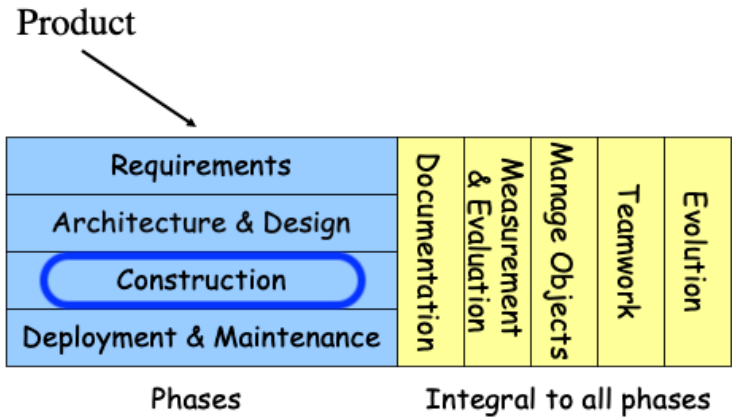
Design Tools

- We use diagrams to describe the relationships among modules and interfaces.
- Specifically, we use UML (Unified Modeling Language) to Design software.
- There are many UML diagram drawing tools or drawing tools in general.
- We will discuss UML and drawing tools in Module 2 and Module 4.

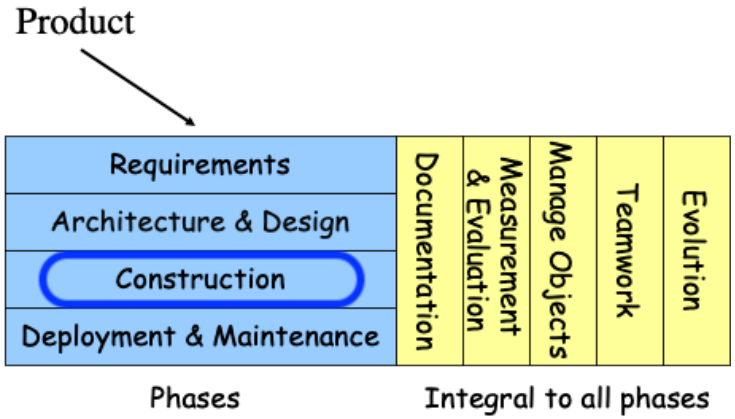


Construction Tools

- Construction Tools include compilers, debuggers, or testing libraries.
- For the programming language, we use Javascript (node.js) for server side programming. We use HTML, CSS, and Javascript for client side programming.



- Students should install node.js for application development.
- We also use NoSQL database, MongoDB, for storing information in a server. Visit MongoDB Atlas to register.

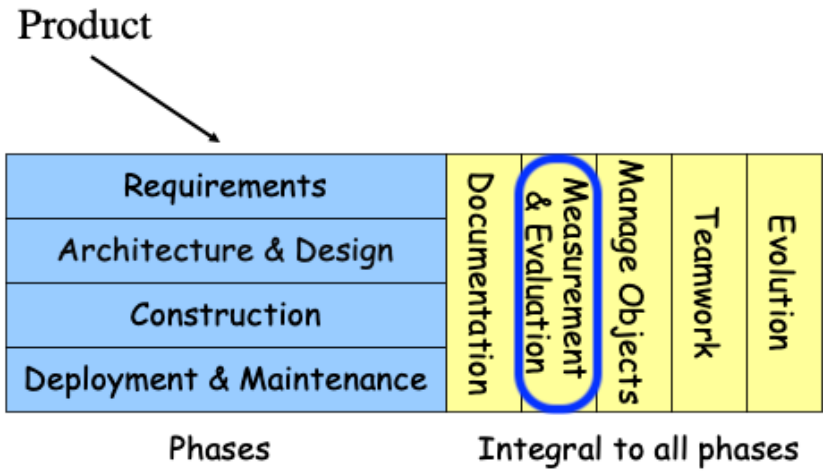


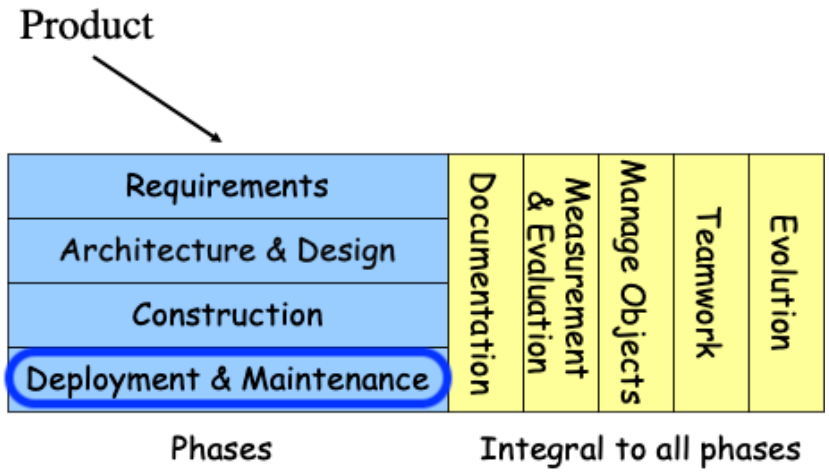
Related #Pdf files

- Many SE tools (including construction tools) are command line interface (CLI) tools. Use **SE_tools1_cli.pdf** for the installation and usage of these tools.
- We also use integrated development environment (IDE) tools. Use **SE_tools1_ide.pdf** for these tools.
- Use **SE_tools1_nodejs.pdf** for setting up Nodejs.
- Use **SE_tools1_mongodb.pdf** for setting up Mongodb.

Other Project Tools

- We will discuss other tools in the Module 4 (Project Implementations) and Module 5 (SE Tools Part 2).





SE Rules

Applied SE Rules #Project Tools

- No surprises - Use all the communication tools to let other know what you are doing to contribute to the project.
- Automatize! - Try to use automatize everything and anything.