

Software Engineering (1)

Lec 3

Usefulness in developing systems	Waterfall	Parallel	Iterative	throwaway Prototyping	Agile
With unclear requirements	Poor	Poor	good	Excellent	Excellent
With unfamiliar technology	Poor	Poor	Good	Excellent	Poor
That are complex	Good	Good	Good	Excellent	Poor
That are reliable	Good	Good	Good	Excellent	Good
Short time schedule	Poor	Good	Excellent	Good	Excellent
With schedule visibility	Poor	Poor	Excellent	Good	Good

حجات لازم نبقي عارفينها :

Waterfall مجنبيها مش من ضمن الطرق الاساسيه اللي احنا بنختارها لانها ضعيفه

Parlell بتبدأ مرحله Planining وبعدين Analysis اللي بيكون فيها تحديد المتطلبات وبعدين بنبدأ نشتغل الـ Tasks بتاعتنا .. In Parallel من مرحله الـ Design & implemantation

لي العميل بتاعي لما يكون Unfamiliar technology يستخدم Iterative , prototyping ؟
لان لما العميل بيكون ملوش علاقه اوي بالتكنولوجيا ده هيتطلب منا اننا نخلي العميل من ضمن المنظومه بتاعه السيستم بتاعي وبيمكنه انه يشوف Interface مبدأي كدا للبروجيكت بتاعي مش هتنتفع Agile لسبب لان الموديل ده مش بيمكن العميل انه يتعامل بإيده مع السيستم .

Software Development Methodology

Exercises

- Suppose that you are a project manager using the waterfall Your development methodology on a large and complex project manager has just read the latest article in Computerworld that advocates replacing the waterfall methodology with prototyping and comes to your office requesting you to switch. What do you say?

Answer :

- yes , we replace the waterfall methodology with prototyping

Because :

1. prototyping work on Large and complex project .
2. It saved a lot of time that would have been wasted if the Waterfall methodology had been used.
3. So that we can edit if the requirements are still unclear.

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- Which software-development methodology would be best if an organization needed to develop a software tool for a small group of users in the marketing department? Why?

Answer :

- We use a Parallel in this project

Because :

1. Parallel worked in the small and mid-sized projects, where requirements are strictly predefined.
2. minimize cost

- Suppose that you are an analyst developing a new information system to automate the sales transactions and manage inventory for each retail store in a large chain system would be installed at each store and would exchange data with a mainframe computer at the company's head office . What methodology would you use ? Why ?

Answer :

- we use a prototyping as the first methodology , then it comes as the second choice an iterative methodology in 80% we use iterative because the system has an interaction with user.
مستخدمناش الـ Agile لاننا بنستخدمها لما البيئه تكون بتتغير بسرعه جدا ويكون المشروع كبير جدا ومعقد جدا .
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- Corporate databases to senior executives to help in their decision making , the time is critical and the requirements are predefined clearly . What methodology would you use ? Why ?

Answer :

- we use an iterative as the first methodology
في حاله ان المتطلبات مش متعرفه كويس فكره اننا نعمل versions بين السيستم بتكون افضل طبعا وده من خلال Iterative methodology .
- as the second choice a prototyping methodology
ولما يقولي critical time فبيساعدوني iterative , فالموضوع .

- Suppose that you are an analyst working for a small company to develop an accounting system . What methodology would you use ? Why ?

Answer :

- we use Parallel methodology Because System is small or simple Project . فمش محتاجين نستخدم حاجه كبيره .

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- The manufacturing manager needs a system support the manufacturing process, inventory control, and sales management. The manager has no idea about technology, and gives you an unclear requirement. Which methodology would you use? Why?

Answer :

- we use Prototyping methodology first methodology , then it comes as the second choice an iterative methodology.

الاجابه هتبقى كدا علشان لما يكون العميل ملوش علاقه بالتكنولوجيا اوي يفضل انه يشوف السيستم ككل ويتعامل معاه افضل من انه يشوف جزء منه وممكن ميفهموش ويفضل يقول لا مش ده اللي انا عاوزه ونبدأ نتوتر واللي هيقدر يخليني اشوف السيستم ككل بشكل مبدئي هو Prototyping علشان كدا ده الموديل الاول بالنسبالنا .

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- Samsung mobile system became old and many new computers have been appeared in the market. Which methodology may support them?

Answer :

- we use Agile methodology .

Software Engineering Ethics Exercises

- Student registration system, the software engineer starts the first steps in developing the system based on his team experience in education field. The customer's requirements were limited as a result of lack of **customer experience**. So, the team decided to develop the system based on **the defined requirements**. Also, He decided to reuse part of old project codes that related to the new one **(without keeping the old design)**. The team takes into considerations the educational law and constraints.
- To what extent did the team commit the ethics? why?

Answer:

* في نقطه لازم نبقي عارفينها وهي ان من ضمن مميزات السوفتوير اني بقدر اعمل Reuse part of old project بس بشرط يكون الكود انا اللي عامله مش حد ثاني وماخدش الـ Design هو هو برضو لازم اعمل حاجه مختلفه واغير الـ Interface * النقطه الوحيد اللي هو وقع فيها بس انه مكانش امين مع العميل وانه معرضش عليه متطلبات زياده ممكن تخدم البروجيكت بتاعه واكتفي بالمتطلبات اللي قالها العميل .

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- The project manager distributes the project tasks to all the team members and set a restricted schedule. Everyone in the team is expert and his capabilities qualify him to work **without needing help**. Based on that the software engineers worked **independently**. What's your opinion toward that? Why?

Answer:

* العمل بالاسلوب ده بيخالف اخلاقيات المهنة رغم ان ممكن يكون التيم ممتاز والشغل ممتاز الا انه هياثر علي المنتج اللي هيطلع وان السوفتوير اساسها التعامل الجماعي .

• Judge the ethics violation exitance for the following:

a) The software engineer accept a scientific project and he is not make sure about his staff abilities.

* بيخالف الاخلاقيات لانه غير مؤهل

b) The software engineer does not concern with reading the national laws and rely on the stakeholder experience in his field.

* بيخالف طبعا لان لازم نكون عارفين القوانين لان ممكن حد يستغل النقطة دي وكان في مقوله بتقول "الجهل بالقانون لا يعفي من المسؤولية" يعني لو قانون اتنشر فالجريدة الساعة ١٢ باللي وانت مشوفتوش وجيت الصبح مطبقتوش ليه الحق انه يتقبض عليك .

c) The software engineer who share the customer's creative ideas with others.

* دي مخالفه لأخلاقيات المهنة "سريه معلومات العميل و حقوق الملكية" مش من حقي ك باشمهندس استخدم فكره العميل اللي عرضها عليا عشان يحسن من جوده السيستم بتاعه دي كدا خيانه ليه وسرقه لأفكاره .

** ووارد اننا لما نيجي نشتغل علي سيستم فبنك او شركه اطلع علي بيانات عميل فلازم نحافظ علس سريه بيانات وملفات العملاء.