

System Analysis & Design
Midterm Exam

3/26/2015

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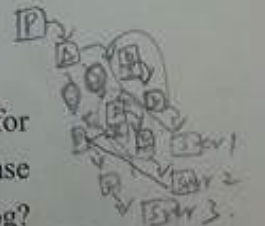
1. Please fill the criteria for selecting a design methodology in the blank below. You will lose one point if you make one mistake; two points when two errors occur, and so on. **8%** Excellent-E, Good-G, Poor-P 18 頁

Usefulness for	Waterfall	Parallel	Phased	Prototyping	Throwaway Prototyping	XP	Scrum
Unclear requirements	P	P	G	E	E	E	E
Unfamiliar technology	P	P	G	P	E	P	P
Complexity	G	G	G	P	E	P	P
Reliability	G	G	G	P	E	G	G
Short time Schedule	P	G	E	E	G	E	E
Schedule visibility	P	P	E	E	G	G	G

2. The basic types of methodologies discussed in this chapter can be combined and integrated to form new hybrid methodologies. Suppose you were to combine throwaway prototyping with the use of waterfall development. What would the methodology look like? Draw a picture and briefly describe it. **10%**



3. Can we combine Phased development with Unified Process? Draw a picture and briefly describe it. **10%**



4. Scrum is an iterative and incremental agile software development method for managing software projects and product or application development. Please answer the following questions related to Scrum. 1) What is Product Backlog? **2%** 2) What is User Story? **3%**

5. China's most popular online shopping platform, Taobao, rang up more than US\$9 billion during the country's biggest online shopping holiday in 2014. The record sales indicate the changes in consumer habits and it is expected to continually grow at fast speeds and could boost China's future economy. Alibaba Group will be going to add

新增功能到已存在的網站, 通路很多, TP, Prototype, UP, XP, Scrum
整合不能出錯。

can they come?

promotion programs to this existing website. What type of methodology of the website design would be best for them? Why? 10%

6. A feasibility analysis is used to provide detail about the risks associated with the proposed system. Which feasibility analysis critically decides whether the system can be built, why? 4% *技術的、経済的、社会的*

7. Determine which of the following statement is functional or nonfunctional requirement. 6% *Economy*

- N 1) A system must send a an email whenever a certain condition is met (e.g. an order is placed, a customer signs up, etc).
N 2) The colors used in the interface should be consistent with the company colors.
F 3) Customers must be able to access their purchase records.
F 4) The new wearable watch design should display the time based on its current location.

- N 5) As the wearable watch has no buttons, no software faults for the resetting of the watch should occur. *24時間7日*

- N 6) The banking system should be available 24/7 with no down time if possible.

8. Describe two BPI techniques used to identify possible improvements in the current system are _____. 10% *stop problem root cause*

9. IKEA sells a line of high-quality furniture. When customers place orders on the company's Web site, the system checks to see if the items are in stock, issues a status message to the customer, and generates a shipping order to the warehouse, which fills the order. When the order is shipped, the customer is billed. The system also produces various reports. Please draw a context diagram and a diagram 0 DFD for the order system. 10% 5% *Explain the importance of leveling and balancing in drawing the DFD diagram.*

10. The company uses several factors to set discounts, as follows:

A student who has taken a safe driver course earns a 5% discount.

A student with a clean record (no tickets or accidents in the last three years) earns a 5% discount.

A student who is 23 or older earns a 5% discount

A student who meets all three conditions (has taken a safe driver course and has a clean record and is 23) earns an additional bonus discount of 5%.

- 1) Create a decision table that describes the discount rules, and write the psodocode. 15% *簡化過程 (完整 + 簡化)*

- 2) Draw a simplified decision tree that shows the discount rules. 7%

5. 我覺得可以使用XP方法論，因為它開發快速，能不斷地改善，去符合顧客更快速的需求。
 it value. 它也不停的測試，對程式碼進行建構。

promotion programs to this existing website. What type of methodology of the website design would be best for them? Why? **10%**

6. A feasibility analysis is used to provide detail about the risks associated with the proposed system. Which feasibility analysis critically decides whether the system can be built, why? **4%** *技術可行性* 我們要評估現在的技術，是否有能力建置系統

7. Determine which of the following statement is functional or nonfunctional requirement. **6%**

1) A system must send a an email whenever a certain condition is met (e.g. an order is placed, a customer signs up, etc). *特殊的*

2) The colors used in the interface should be consistent with the company colors.

3) Customers must be able to access their purchase records.

4) The new wearable watch design should display the time based on its current location.

5) As the wearable watch has no buttons, no software faults for the resetting of the watch should occur.

6) The banking system should be available 24/7 with no down time if possible. *hour/day*

8. Describe two BPI techniques used to identify possible improvements in the current system are _____. **10%** *2種 1. 有線期分析，去衡量每個步驟所花的時間，並將步驟整合或同時進行*

9. IKEA sells a line of high-quality furniture. When customers place orders on the company's Web site, the system checks to see if the items are in stock, issues a status message to the customer, and generates a shipping order to the warehouse.

warehouse (which fills the order) When the order is shipped, the customer is billed. The system also produces various reports. Please draw a context diagram and a diagram 0 DFD for the order system. **10%** Explain the importance of leveling and balancing in drawing the DFD diagram. **5%**

10. The company uses several factors to set discounts, as follows:

① A student who has taken a safe driver course earns a 5% discount.

② A student with a clean record (no tickets or accidents in the last three years) earns a 5% discount.

③ A student who is 23 or older earns a 5% discount

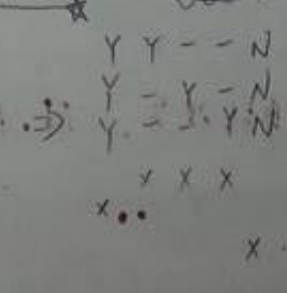
A student who meets all three conditions (has taken a safe driver course and has a clean record and is 23) earns an additional bonus discount of 5%.

1) Create a decision table that describes the discount rules, and write the psodocode. **15%** *寫簡化過的*

2) Draw a simplified decision tree that shows the discount rules. **7%**



①	Y	Y	Y	Y	N	N	N	N	
②	Y	Y	N	N	Y	N	Y	N	
③	Y	N	Y	N	Y	Y	N	N	
Discount	5%	5%	5%	5%	5%	5%	5%	5%	
no discount	X	X	X	X	X	X	X	X	X



if ① then
 if ② then
 if ③ then
 5% & additional 5%
 else 5%
 else no discount

