《软件工程概论》课后练习题

Chapter 1 Why Software Engineering ?

Part 1 Fill Blanks

1. Software is a set of __， __ and __。
2. Software engineering means the application of a __， __and __
3. approach to the __， __， and__， of software. That is, the application of engineering to software.
4. Any Problem-solving technique must have two parts,__to problem to determine its nature, and then __a solution.
5. The McCall's quality model concerns the quality of __， CMM concerns the quality of __， and ROI concerns the quality of __.
6. The __ is the company, organization ,or a person who is paying for the software system to be developed. The __the company, organization ,or a person who is building the software system. The __is the person or people who will actually use the system.
7. Any entity to be engineered ,we must do __， __， __， __， and __。

Part 2 Brief Description

Briefly describe the roles of analyst, designer, programmer, tester, and trainer.

Chapter 2 Modeling the Process and Life Cycle

Part 1 Fill Blanks

1. We can think a set of ordered tasks as a ___, a series of __, including _， __and __。
2. When the process involves building of some ___, we sometime refer to the Process as a __。
3. The life cycle of a software product include _， __， __， __， and _。
4. The software development usually involves _， __， _， __， _， __， __， __and _stages。
5. The waterfall model include _， __， __， __， __， __， __and _steps.
6. The _ensures that the system has implemented all of the requirement, But the _ ensures that each function works correctly.
7. The V model makes more explicit some of the _and _that are hidden In the waterfall model。
8. The spiral model combine the development activities with _management to minimize and control the _。
9. A _is a partially developed product that enable customers and developers
10. To examine some aspect of the proposed system and decide if it is suitable or appropriate for the final product.

Part 2 Brief Description

Briefly describe the advantage and disadvantage of the WatterFall model.

Chapter 3 Planning and Managing the Project

Part 1 Fill Blanks

1. A _describe the software development cycle for a particular project by enumerating the _or stages of the project and breaking each into discrete _or _to be done.
2. The Schedule is a _ that shows when activities will begin and end, and When the related development products will be ready.
3. The Deliverables , that is the __that the customer expects to see during project development.
4. An ___is a part of the project that takes place over o period of time, whereas a ___is the completion of an activity- a particular point of time.
5. The __depicts the project as a set of discrete pieces of work.
6. The or for an activity is the estimated amount of time required for the activity to be completed. The __is the amount of time available in the schedule for the activity's completion.___or __for an activity is the difference between the ___and_ _for that activity
7. The _is a path that the slack time at every node is zero.
8. GANTT CHART is used to depict the projects'__.

Part 2 Brief Description and Exercises

1. Gave out some deliverables.
2. Briefly describe the characteristics of software development team's individual.
3. Do the exercise 2, and 3 of this chaper (Forth Edition PP. 138-139)

Chapter 4 Capture the Requirements ?

Part 1 Fill Blanks

1. A requirement is an __of _。
2. The process for capturing the requirement has for steps, there are _, __,__,and _。
3. The requirement captures from seven system stakeholders, they are__,__,__,__, __,__,and _.
4. The sources of possible requirements are the _, _,__,__,__, and the _.
5. There four type of requirement, they are the _,__,__and__.
6. There are two kinds of requirement documentations, they are__and__.
7. There are three core constructs in ERD, they are the _,__and__.
8. There are four core construct in DFD, they are the _,__,__and__.
9. In UCD, a large box represents the system__.
10. The two approaches to prototype, they are the__and__.

Part 2 Brief Description and Exercises

1. Briefly describe the roles of the seven groups of stakeholders.
2. Briefly describe the function of the four types of the requirement.
3. Briefly describe the functions of three core construct of ERD.
4. Briefly describe the functions of the two approaches of prototyping.
5. Do the Exercise 12 (only draw out USD) of this chapter.
6. Do the exercise 13 of this chapter.

Chapter 5 Design the Architecture

Part 1 Fill Blanks

1. Design is the creative process of figuring out how to implement all the customer's requirements; the __plan is called the design.
2. The software architecture is consisted by three parts, they are __,

   _ and __.
3. In pipe-and-filter style, the__functions is to pass input data through a sequence of data-transforming components, and the___simply transmit data from one filter to the next without modifying the data.
4. In client-server architecture, the_component offer services, and __access them using a request/reply protocol.
5. In peer-to-peer architecture, each__executes as its own process and acts as both a client and a server to other peer component.
6. In publish-subscribe architecture, A component express interest in an event by _ ____to it. When another component _____that the event has take place, the subscribing component are notified.
7. A repository style consists of two types of component, one is called __ , another is called __component.

Part 2 Brief Description and Exercise

1. Briefly describe the process for developing a software architecture.
2. Drawn out(画出) the layout architecture of ISO model for network communication.
3. Do the exercise 2 of this chapter.

Chapter 6 Design the Modules

Part 1 Fill Blanks

1. Design modules means decide how the____will be designed at a modular level so that developers can __that _the design.
2. This chapter can help you see why certain design _and _are applicable, and then assist you in deciding when should apply them.
3. In practice, there is no __between the end of the architectural design Phase and the start of the module design phase.
4. Design principles are guidelines for _our system's required functionality and behavior into modules.
5. Modularity, also called ___, is the principle of keeping separating The various unrelated aspects of the system.
6. There are six types of coupling, they are __,__,___,

   __,___,and__.
7. There are seven types of cohesion, they are _,__,___,

   _,__,___, and___.
8. When complex data structures are passed between modules, we say that There is___between the modules, if only data value, and not structured data, are passed, then the modules are connected by___.
9. The modules is___, in that a module's data and functions are related only because they are used at the same time at execution.

Part 2 Brief Description and Exercises

1. Do the exercise 7 of this chapter (Fourth Edition P370)
2. Do the exercise 8 of this chapter (Fourth Edition P370)

Chapter 7 Writing the Programs

Part 1 Fill Blanks

1. Even when writing the code itself, many people are usually involved, and a great deal of____and__is required.
2. May companies insist that their code conform to _, ___, and_ standards, so that the code and associated are clear to everyone who _them.
3. No matter how what language is used, each program component involves At least three major aspects,___,___, and___.
4. The program __to be the set of written descriptions that explain to a reader what the programs to and how they do it. _is descriptive material written within the code, all other documentation is ___.
5. The external documentation is the full blown report, it answers the same questions, _, _, _ ,__, _, and _using a system rather than a component perspective.

Part 2 Brief Description and Exercise

1. Briefly describe the content of Head Block Comment.
2. Do the exercise 6 of this chapter(Forth Edition P. 399)

Chapter 8 Testing the Programs

Part 1 Fill Blanks

1. A fault occurs when a human makes___, called an error, in performing some software behavior. Thus a fault is an_view of system, as seen by the eyes of the___ .
2. A failure is a _ for the system's required behavior. Thus a failure is an ___ view: a problem that the __sees.
3. Fault identification is the process of _ what the fault or faults Caused the failure, and fault correction or removal is the process of _ to the system so that the faults are removed.
4. An algorithm fault occurs when a component's_or__ does not produce the proper output for a given input.
5. Computation and precision faults occur when a formula's ___ Wrong or dose not compute the result to the required number of _ places.
6. When the documentation does not match what the program actually Dose, we say that the program has___.
7. Stress or overload fault occur when the data structures are filled past their Specified __.

8. A __ test evaluates the system to determine if the functions described by the requirements specification are actually performed by the integrated system.
9. A __test compares the system with the remainder of these software and hardware requirements.
10. A__ test checks against the customer's requirement description, and This test complete jointly with the customer.
11. A _test is run to make sure that the system still functions as it should.
12. We view the test object form the outside as a closed or black box whose contents are unknown, our test _inputs to the closed box and notes what_ is produced.
13. We view the test object as an open box and or white box, we can see the__ of the test object to test in different way.
14. A test point or test case is a particular choice of ___ to be used in Test a program.
15. In bottom-up integration test, we should develop a___to passes a test case to the component to be tested.
16. In Top-down integration test, we write a ___to simulate the activity of the missing component.

Part 2 Brief Description and Exercises

1. Simply describe the code walkthroughs and code inspection .
2. If we wanted to test a positive input value, given the properly test case.
3. Do the 7 of this chapter(only use bottom-up and top-down Approaches， Fourth Edition P451).
4. Figure 1. is a program's logic flow, give out:
   (1) the test case for STAEMENT TESTING, BRANCH TESTING,
   (2) the test path for PATH TESTING.

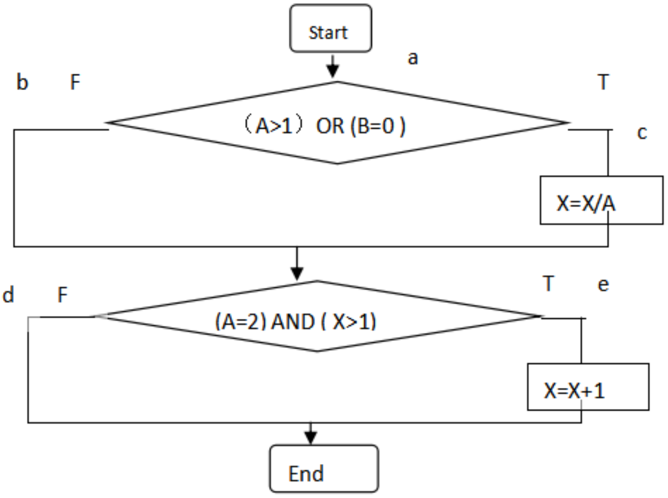

Figure 1. Program Logic Flow

Chapter 9 Testing the System

Part 1 Fill Blanks

1. A system configuration is a collection of system ___ delivered
   To a particular customer.
2. The software reliability is a possibility of the system will operate without
   The failure under a given __ and a given _interval.
3. The software availability is the probability that a system is operating successfully according to specification at a given _of time.
4. The software maintainability is the probability that , for a given condition
   Of use, a maintenance activity can be carried out within stated __interval and using stated __and __.
5. The test in develop environment is called _test, and in customer's
   environment is called___test.

Part 2 Brief Description and Exercise

1.Briefly describe the content of :

(1) Test Plan

(2) Test Specification

(3) Test Description

(4) Test Report

Chapter 10 Delivering the System

Part 1 Fill Blanks

1. The _exercises the main system functions, and the __ performs
   The system functions to support the major work.

Part 2 Brief Description and Exercise

1. Briefly describe the functions of the user and the operator.
2. Briefly describe the training content for user training, operator training and the special training.

Chapter 11 Maintaining the System

Part 1 Fill Blanks

1. Any work done to__the system after it is in operation is considered to be maintenance.
2. The S-systems are___defined by and derivable from a specification.
3. The P-system are very abstract, and __ is almost impractical and
   Impossible.
4. To control the day-to-day system functions, we on the maintenance team respond to problems from faults. This kind of maintenance is called
   ___ Maintenance .
5. Suppose the existing database management system is upgrade to
   A new version, this maintenance is called _maintenance.
6. If the customer wanted to add a new function, this kind of maintenance

Is called __maintenance.

Part 2 Brief Description and Exercise

1. List the factors affecting the maintenance cost.