Planning the Project
项目计划

Part 1 Listening & Speaking

➢ Dialogue: Software Project Planning

Jason: So much work to do.

Kevin: I think we need a formal project plan as our guideline.

Sharon: Yes, the first one is the time, which is one of the most important factors for a project. We need a schedule, especially, the deadline of our project.

Kevin: We have 40 days in total; the requirements acquirement has taken us 5 days already, so there are 35 days left.

Jason: Oh, it sounds really urgent.

Sharon: It seems that we should begin to program as soon as possible, right?

Jason: Although coding is a very central part of a software project, the most important thing is that we must first establish a proper schedule to control our progress and assure our deployment on time, I think.

Kevin: Yes. In the requirements phase, we will spend another 3 days to depict, analyze and model the requirements. After that, we will spend 3 days to complete the ***architectural design*** and it will take 5 days to accomplish the ***detailed design***. Because of the effort applied to software design, code should follow with relatively little difficulty, and can be done within one week I think. Testing and subsequent debugging can ***account for*** about 10 days of software development effort.

Sharon: Maybe we can draw our schedule using a ***Gantt Chart***. It is a visual and effective tool for a project plan.

Kevin: Good idea.

Jason: Actually, testing should not be seen as an activity which starts only after

the coding phase is complete, with the limited purposes of defecting failures. [1] Indeed, planning for testing should start with the early stages of the requirement process, and test plans and procedures must be systematically and continuously developed, and possibly refined, as development proceeds. During coding, we can perform the unit testing at the same time. It will save much time and obtain better testing effects I think. Finally, we can perform a validation test by working with the customer to find out if the software developed is valid for the customer and make sure that the customer is getting what they asked for.

[1] **Replace with:** Software design is an **indispensable** process which has a significant impact on the next processes in the entire development.

Sharon: By the way, we need three computers and must install the software which the customer requires with a uniform version as developing tools. That is Microsoft Visual Studio 2012 for a development platform and Microsoft SQL server 2012 as a database management system.

Jason: We need a network as well.

Kevin: Ok, I will prepare the development environment for us as soon as possible. Then, we must assign some management responsibilities to everyone. Sharon, you are responsible for document management [2]. Jason, you take charge of change management. And I will be in charge of the Software Quality Assurance. Ok?

[2] Replace with:
1. database management
2. configuration management
3. risk management

Jason & Sharon: No problem.

Kevin: Ok, I have noted everything which we referred to just now, and will complete a project plan within two days.

Words

deployment
[di'plɔimənt] n. 部署

indispensable
[ˌindis'pensəbl] adj. 不可缺少的，必需的

debug
[diː'bʌg] v. 调试

Phrases

architectural design	体系结构设计，概要设计
detailed design	详细设计
account for	（在数量、比例方面）占
Gantt Chart	甘特图

Exercises

Work in pairs, and make up a similar conversation by replacing the statements with other expressions on the right side.

➢ Listening Comprehension: Software Project Planning

Listen to the article and the following 3 questions based on it. After you hear a question, there will be a break of 10 seconds. During the break, you will decide which one is the best answer among the four choices marked (A), (B), (C) and (D).

Questions:

1. How many kinds of planning philosophies are mentioned in the article?
   (A) Two
   (B) Three
   (C) Four
   (D) Five
2. How many questions are stated in Boehm's principle for leading project planning?
   (A) Three
   (B) Five
   (C) Six
   (D) Seven
3. Which point of view is the most accordant with the idea of this article on the project planning?
   (A) Planning every activities in the project as detailed as possible for their foreseeable ability
   (B) Carrying out as early as possible regardless of planning, because even the best planning can be obviated by uncontrolled change as the work proceeds
   (C) Adjusting different levels of details for activities according to their different locations in the project timeline
   (D) Making a perfect plan which can evade changes that may come about during the work

Words

minimalist
['miniməlist] n. 最低限要求者

argue
['ɑ:gju:] v. 主张，认为

obviate
['ɔbvieit] v. 排除，避免

traditionalist
[trə'diʃənəlist] n. 传统主义者，墨守成规者

agilist
['ædʒailist] n. 敏捷主义者，机敏者

fruitless
['fru:tlis] adj. 徒劳的，无用的

recipe
['resipi] n. 诀窍

chaos
['keiɔs] n. 混乱

moderation
[ˌmɔdə'reiʃən] n. 适度，节制

paper
['peipə] n. 论文，文章

state
[steit] v. 陈述，说明

milestone
['mailstəun] n. 里程碑

Phrases

road map	线路图，（一步一步的）详尽计划
in moderation	适中地

Abbreviations

W5HH	Why, What, When, Who, Where, How, How much

➢ Dictation: Four Variables in Projects

This article will be played three times. Listen carefully, and fill in the blanks with the words you have heard.

A project is a carefully defined set of ___1___ that use resources to achieve ___2___ goals and objectives. It is a ___3___ **endeavor** having specific start and completion dates as well as a managed ___4___ having a range of ___5___ , budget and organizational constraints.

It is usually considered that there are four ___6___ variables we will ___7___ in software projects—cost, time, scope, and quality. These four variables affect a project together by ___8___ with each other: increased scope typically means more time and ___9___ , a tight time **stress** could mean stronger finance support and **suffered** ___10___ , too little money couldn't solve the customer's business problem ___11___ the scope, and a higher quality might deliver longer developing ___12___ and more cost.

It seems that there is not a simple relationship between them. For example, you can't just get software faster by spending more money. As the ___13___ goes, "Nine women cannot make a ___14___ in one month."

In his book ***Extreme Programming*** Explained: **Embrace** Change, Kent Beck says that the solution is to make the four variables ___15___ . If everyone — programmers, customers, and managers — can see all four variables, they can **consciously** ___16___ which variables to control. If they don't like the result ___17___ for fourth variable, they can change the ___18___ , or they can ___19___ a different three variables to control for ___20___ **ultimately** the project objectives.

Words

endeavor
[in'devə] n. 努力，尽力

stress
[stres] n. 压力，紧迫

suffer
['sʌfə] v. 受损失，受害

embrace
[im'breis] v. 掌握，接受，拥抱

Words

consciously ['kɔnʃəsli] adv. 有意识地

ultimately ['ʌltimətli] adv. 最后，终于，根本

Phrases

Extreme Programming 极限编程

Part 2 Reading & Translating

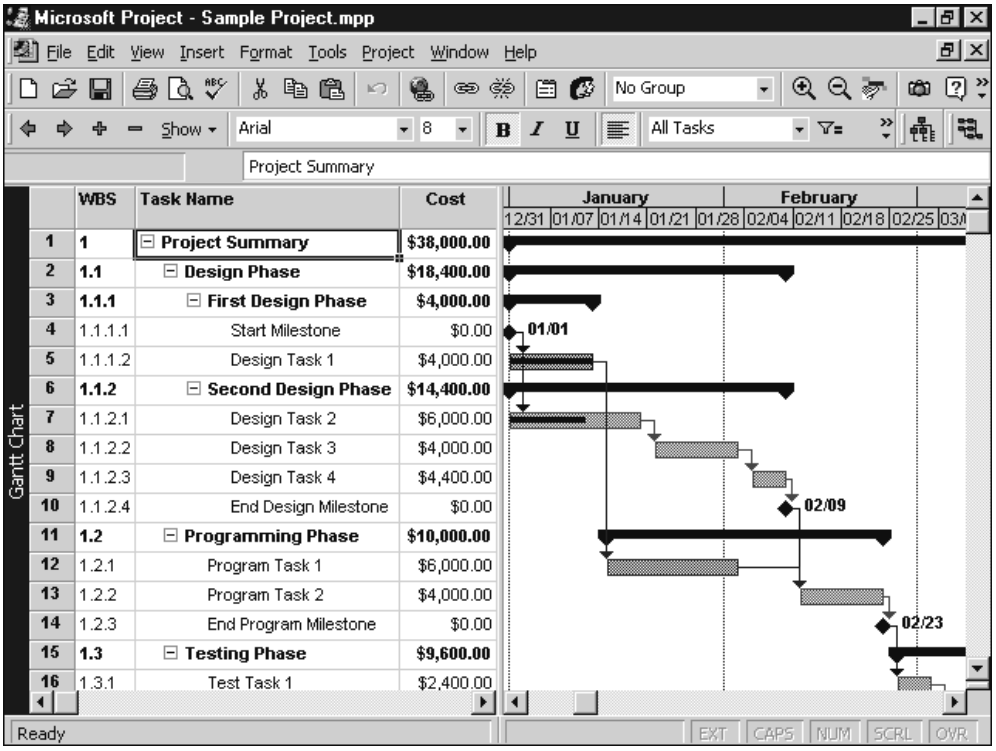
➢ Section A: Software Project Plan

A proper project plan is an important **ingredient** for a successful project. Without proper planning, a software development project is unlikely to succeed. Good planning can be done after the requirements and architecture for the project are available. The important planning activities are: process planning, effort estimation, scheduling and **staffing** planning, quality planning, **configuration** management planning, project monitoring planning, and risk management.

Process planning generally involves selecting a proper process model and **tailoring** it to **suit** the project needs. In effort estimation, overall effort requirement for the project and the **breakup** of the effort for different phases is estimated. In a ***top-down approach***, total effort is first estimated, frequently from the estimate of the size, and then effort for different phases or tasks is determined. In a ***bottom-up approach***, the main tasks in the project are identified, and effort for them is estimated first. From the effort estimates of the tasks, the overall estimate is obtained.

The overall schedule and the major milestones of a project depend on the effort estimate and the staffing level in the project and simple models can be used to get a rough estimate of schedule from effort. Often, an overall schedule is determined using a model, and then adjusted to meet the project needs and constraints. The detailed schedule is one in which the tasks are broken into smaller, schedulable tasks, and then assigned to specific team members, while preserving the overall schedule and effort estimates. [1] The detailed schedule is the most **live** document of project planning as it lists the tasks that have to be done; any changes in the project plan must be reflected suitably in the detailed schedule.

Quality plans are important for ensuring that the final product is of high quality. The project quality plan identifies all the **V&V** activities that have to be performed at different stages in the development, and how they are to be performed.



The goal of configuration management is to control the changes that take place during the project. The configuration management plan identifies the ***configuration items*** which will be controlled, and specifies the procedures to accomplish this and how access is to be controlled.

Risks are those events which may or may not occur, but if they do occur, they have a negative impact on the project. To meet project goals even under the presence of risks requires proper risk management. Risk management requires that risks be identified, analyzed, and prioritized. Then risk mitigation plans are made and performed to minimize the effect of the highest priority risks.

For a plan to be successfully implemented it is essential that the project be monitored carefully. Activity level monitoring, status reports, and milestone analysis are the mechanisms that are often used. For analysis and reports, the actual effort, schedule, defects, and size should be measured. With these measurements, it is possible to monitor the performance of a project ***with respect to*** its plan. And based on this monitoring, ***actions*** can be ***taken*** to correct the course of execution, if the need arises.

Overall, project planning ***lays out*** the path the project should follow in order to achieve the project objectives. It specifies all the tasks that the project members should perform, and specifies who will do what, in how much time, and when in order to execute this plan. With a detailed plan, what remains to be done is to execute the plan, which is done through the rest of the project. Of course, plans never remain unchanged, as things do not always work as planned.

With proper monitoring in place, these situations can be identified and plans changed accordingly. Basic project planning principles and techniques can be used for plan modification also.

Words

ingredient
[in'gri:diənt] n. 成分，因素

staff
['stɑ:f] v. 配置职员

configuration
[kən,figju'reiʃən] n. 配置

tailor
['teilə] v. 剪裁，适应

suit
[sju:t] v. 适合，合乎……的要求

breakup
['breikʌp] n. 分解

live
[laiv] adj. 生动的

prioritize
[prai'ɔritaiz] v. 把……区分优先次序

mitigation
[,miti'geiʃən] n. 缓解，减轻

mechanism
['mekənizəm] n. 机制

defect
[di'fekt] n. 缺陷

course
[kɔ:s] n. 过程，进程

arise
[ə'raiz] v. 出现，产生

Phrases

top-down approach	自顶向下方法
bottom-up approach	自底向上方法
configuration items	配置项
with respect to	就……而论，关于
take action	采取行动，着手
lay out	划定（路线），布置，安排

Abbreviations

V&V	Verification and Validation	验证和确认

Complex Sentences

Original: The detailed schedule is one in which the tasks are broken into smaller, schedulable tasks, and then assigned to specific team members, while preserving the overall schedule and effort estimates.

Translation: 详细进度是指，在保持总体进度和工作量估算的条件下，将任务分解为更小、可安排的任务，然后将其分派给特定的团队成员。

Exercises

Ⅰ. Read the following statements carefully, and decide whether they are true (T) or false (F) according to the text.

___1. There are seven important activities in the project planning.

___2. Generally, there are two main steps involved in process planning, that is selecting a proper process model and tailoring the project to suit the model chosen.

___3. In software engineering, the term "activity" is in the level with more details than the term "task" is.

___4. Both the effort estimate and the staffing level in a project are the bases of the overall schedule and the major milestones of the project.

___5. Status reports is one of the mechanisms that are often used in project monitoring.

Ⅱ. Choose the best answer to each of the following questions.

1. Which statement is right about the project planning?
   (A) Planning is an important ingredient for a successful project, so it must be done at the very beginning, before any other activities in the project.
   (B) Project planning arranges the path the project should follow in order to achieve the project objectives.
   (C) Establishing a good project plan is the most essential for implementing the plan successfully.
   (D) Because of the potential risks brought by changes, a good project plan always avoids changes, so that things always work as planned.

2. What does the word "live" means in the context of "The detailed schedule is the most live document of project planning" in the third paragraph?
   (A) Involving team members who are physically present, because the tasks must be assigned to specific team members in the detailed schedule.
   (B) Guidable, because the detailed schedule lists the tasks that have to be done, as the guidance of the daily work.
   (C) Operative, because the detailed schedule must consider any changes in the project plan suitably.
   (D) Not specific, because the detailed schedule does not have to be made due to the potential frequent changes.

3. Which statement is wrong about the following different activities in the project plan?
   (A) Models that can be used in process planning and schedule planning are different.
   (B) Configuration management is used to control the changes that occur during the project.
   (C) Risk mitigation plans are made and performed as the subsequence of the risk management plan.
   (D) Measurement is a most important mechanism for monitoring the performance of a project with respect to its plan.

III. Translation

1. To meet project goals even under the presence of risks requires proper risk management.
2. With proper monitoring in place, these situations can be identified and plans changed accordingly.

➢ Section B: Big Data 大数据

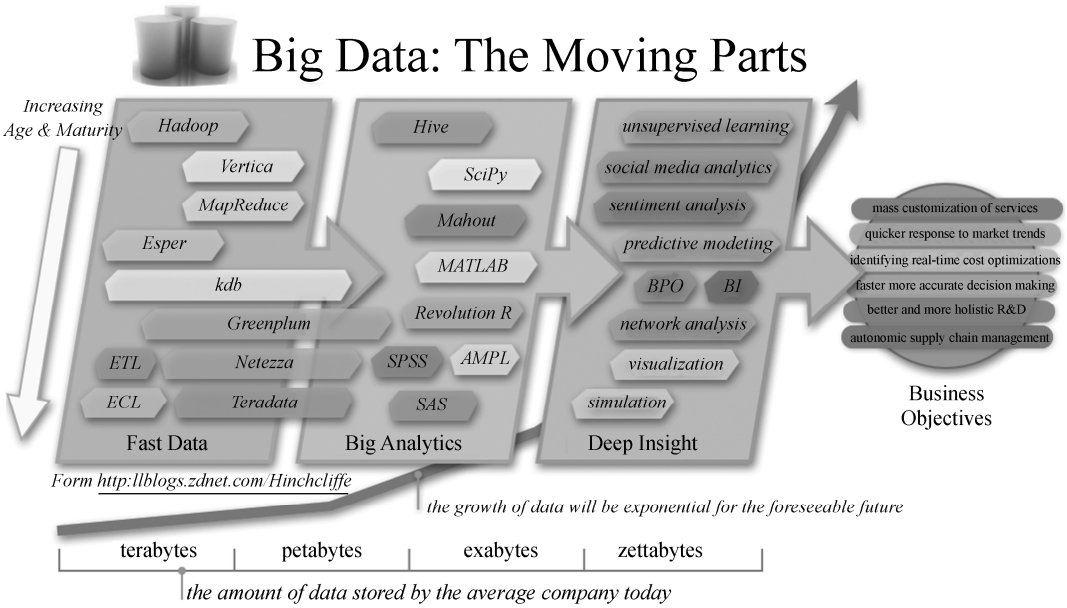
Up until about five years ago，most data collected by organizations consisted of structured transaction data that could easily fit into rows and columns of relational database management systems．Since then，there has been an explosion of data from Web traffic, E-mail messages, and social media content(**tweets**, status messages), even music playlists, as well as machine-generated data from sensors．These data may be unstructured or semi-structured and thus not suitable for relational database products that organize data in the form of columns and rows．The popular term "big data" refers to this **avalanche** of digital data flowing into firms around the world largely from Web sites and Internet click stream data. The volumes of data are so large that traditional **DBMS** cannot capture, store, and analyze the data in a reasonable time．Some examples of "big data" challenges are analyzing 12 **terabytes** of tweets created each day to improve your understanding of consumer **sentiment** towards your products；100 million E-mails in order to place appropriate ads alongside the E-mail messages; or 500 million call detail records to find patterns of fraud and **churn**．[1] Big data and the tools needed to deal with it really started with Google and other search engines．Google's problem：it has to deal with 500 million searches a day, and within milliseconds，display search results and place ads．For fun, do a search on "big data"and you'll see Google respond with more than 1 billion results in 38 milliseconds (about a third of a second). That's much faster than you can read this sentence! Big data usually refers to data in the **petabyte** and **exabyte** range — in other words, billions to trillions of records，all from different sources．Big data are produced in much larger quantities and much more rapidly than traditional data．Even though "tweets" are limited to 140 characters each, Twitter generates more than 8 terabytes of data daily. According to the IDC technology research firm, data is more than doubling every two years, so the amount of data available to organizations is **skyrocketing**. ***Making sense*** out of it quickly in order to gain a market advantage is critical.

Businesses are interested in big data because they contain more patterns and interesting **anomalies** than smaller data sets，with the potential to provide new insights into customer behavior, weather patterns, financial market activity. or other phenomena. [2]

However, to derive business value from these data, organizations need new technologies and tools capable of managing and analyzing nontraditional data along with their traditional enterprise data．

To handle unstructured and semi-structured data in vast quantities, as well as structured data, organizations are using Hadoop. Hadoop is an open source software **framework** managed by the

Apache Software Foundation that enables distributed parallel processing of huge amounts of data across inexpensive computers. It breaks a big data problem down into sub-problems, distributes them among up to thousands of inexpensive computer processing nodes, and then combines the result into a smaller data set that is easier to analyze. You've probably used Hadoop to find the best **airfare** on the Internet, get directions to a restaurant, search on Google, or connect with a friend on Facebook.



Hadoop can process large quantities of any kind of data, including structured transactional data, loosely structured data such as Facebook and Twitter feeds, complex data such as Web server log files, and unstructured audio and video data. Hadoop runs on a **cluster** of inexpensive servers, and processors can be added or removed as needed. Companies use Hadoop to analyze very large volumes of data as well as for a **staging** area for unstructured and semi-structured data before they are loaded into a ***data warehouse***. Facebook stores much of its data on its massive Hadoop cluster, which holds an estimated 100 petabytes about 10,000 times more information than the Library of Congress. Yahoo uses Hadoop to track user behavior so it can modify its home page to fit user interests. Life sciences research firm NextBio uses Hadoop and HBase to process data for pharmaceutical companies conducting **genomic** research. Top database vendors such as IBM, Hewlett-Packard, Oracle, and Microsoft have their own Hadoop software distributions, Other vendors offer tools for moving data into and out of Hadoop or for analyzing data within Hadoop.

Words

tweet
[twi:t] n. 微博，消息

avalanche
['ævəla:ntʃ] n. 纷至沓来，蜂拥而至，雪崩

terabyte
['terəbait] n. 太（10^{12}）字节

sentiment
['sentimənt] n. 意见，观点，情绪

Words

churn
[tʃɜːn] n. 粗制滥造，搅拌

petabyte
['petəbait] n. 拍（10^{15}）字节

exabyte
['eksə, bait] n. 艾（10^{24}）字节

skyrocket
['skai'rɔkit] v. 突升，猛涨

anomaly
[ə'nɔməli] n. 异常，反常

framework
['freimwɜːk] n. 构架，框架

airfare
['eəfeə] n. 飞机票价

cluster
['klʌstə] n. 群，簇

stage
[steidʒ] v. 展现，举行

genomic
[dʒiːnəumik] adj. 染色体组的

Phrases

make sense	理解，有意义，是明智的
data warehouse	数据仓库

Abbreviations

DBMS	DataBase Management System	数据库管理系统

Complex Sentences

[1] Original: Some examples of "big data"challenges are analyzing 12 terabytes of tweets created each day to improve your understanding of consumer sentiment towards your products; 100 million E-mails in order to place appropriate ads alongside the E-mail messages; or 500 million call detail records to find patterns of fraud and churn

Translation: 大数据带来的挑战如：通过分析每天产生的 12 太字节（10^{12}B）的微博数据来更好地了解用户对产品的看法；分析 1 亿封电子邮件以便在邮件信息旁边投放合适的广告；或分析 5 亿条详细的呼叫记录来寻找诈骗和粗制滥造的方式。

[2] Original: Businesses are interested in big data because they contain more patterns and interesting anomalies than smaller data sets，with the potential to provide new insights into customer behavior, weather patterns，financial market activity．or other phenomena．

Translation: 企业对大数据感兴趣，是因为它们与更小的数据集相比包含了更多的模式与有趣的特例，因而具备提供新的针对顾客行为、天气模式、金融市场活动或其他现象相关信息的潜力。