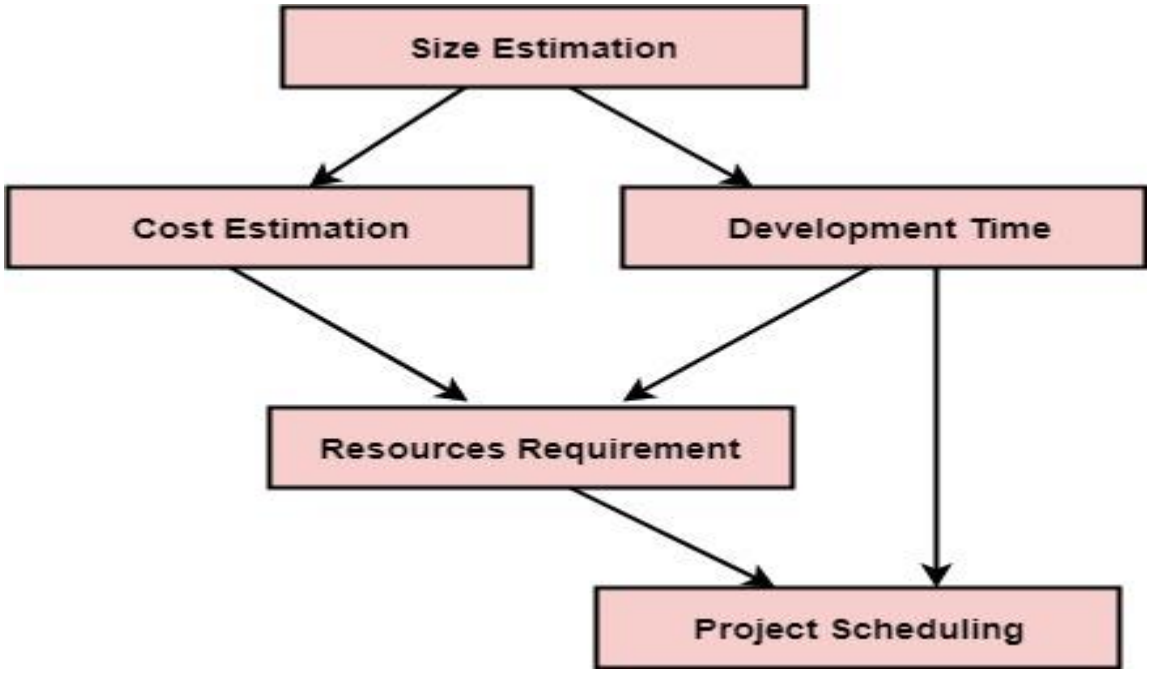
Software Project Planning

A Software Project is the complete methodology of programming advancement from requirement gathering to testing and support, completed by the execution procedures, in a specified period to achieve intended software product.

Software manager is responsible for planning and scheduling project development. They manage the work to ensure that it is completed to the required standard. They monitor the progress to check that the event is on time and within budget. The project planning must incorporate the major issues like size & cost estimation scheduling, project monitoring, personnel selection evaluation & risk management. To plan a successful software project, we must understand:

- Scope of work to be completed
- Risk analysis
- The resources mandatory
- The project to be accomplished
- Record of being followed

Software Project planning starts before technical work start. The various steps of planning activities are:



The size is the crucial parameter for the estimation of other activities. Resources requirement are required based on cost and development time. Project schedule may prove to be very useful for controlling and

monitoring the progress of the project. This is dependent on resources & development time. In this phase we find out the cost of the project by using the cost estimation techniques.(Studied Earlier).

Software Maintenance

Software maintenance is a part of the Software Development Life Cycle. Its primary goal is to modify and update software application after delivery to correct errors and to improve performance. Software is a model of the real world. When the real world changes, the software require alteration wherever possible.

It includes error corrections, enhancement of capabilities, deletion of obsolete capabilities, and optimization.

Need of Software Maintenance

Software Maintenance must be performed in order to:

- Correct faults.
- Improve the design.
- Implement enhancements.
- Interface with other systems.
- Accommodate programs so that different hardware, software, system features, and telecommunications facilities can be used.
- Migrate legacy software.
- Retire software.

Types of Software Maintenance-

1) Corrective Maintenance- This includes modifications and updations done in order to correct or fix problems, which are either discovered by user or concluded by user error reports.

2) Adaptive Maintenance- This includes modifications and updations when the customers need the product to run on new platforms, on new operating systems, or when they need the product to interface with new hardware and software.

3) Preventive Maintenance- This includes modifications and updations to prevent future problems of the software. It aims to attend problems, which are not significant at this moment but may cause serious issues in future.

4) Perfective Maintenance- A software product needs maintenance to support the new features that the users want or to change different types of functionalities of the system according to the customer demands.

Causes of Software Maintenance Problems-

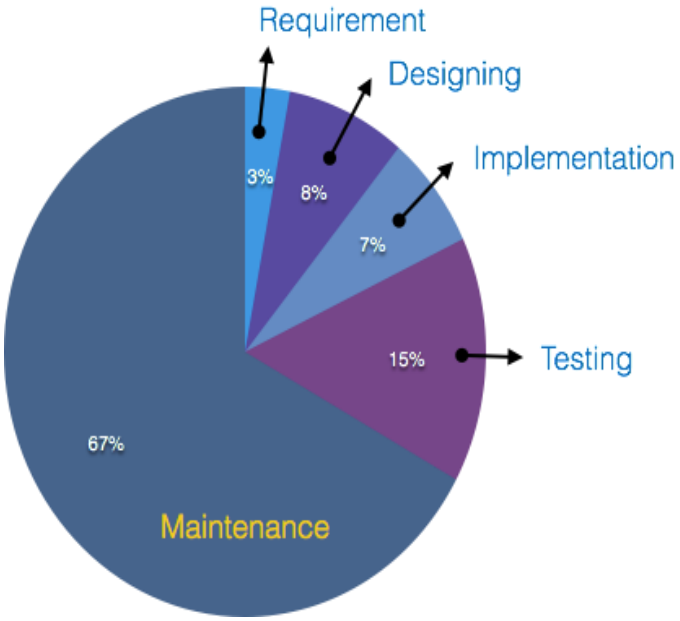
1)<u>Lack of Tracebility-</u>

- Codes are rarely traceable to the requirements and design specifications.
- It makes it very difficult for a programmer to detect and correct a critical defect affecting customer operations.

2) <u>Lack of Code Comments-</u> Most of the software system codes lack adequate comments. Lesser comments may not be helpful in certain situations.

3) <u>Obsolete Legacy Systems-</u>Some of the industries were not designed maintenance in mind.As a consequence, the code supporting these systems is devoid of traceability to the requirements, compliance to design and programming standards.

<u>Cost of Maintenance-</u> Reports suggest that the cost of maintenance is high. A study on estimating software maintenance found that the cost of maintenance is as high as 67% of the cost of entire software process cycle.



There are various factors, which trigger maintenance cost go high, such as:

<u>Real world factors affecting Maintenance Cost-</u>

- The standard age of any software is considered up to 10 to 15 years.
- Older softwares, which were meant to work on slow machines with less memory and storage capacity cannot keep themselves challenging against newly coming enhanced softwares on modern hardware.

- As technology advances, it becomes costly to maintain old software.
- Most maintenance engineers are newbie and use trial and error method to rectify problem.
- Often, changes made can easily hurt the original structure of the software, making it hard for any subsequent changes.
- Changes are often left undocumented which may cause more conflicts in future.

Software end-factors affecting Maintenance Cost-

- Structure of Software Program
- Programming Language
- Dependence on external environment
- Staff reliability and availability

Assignment

1- How Software Maintenance maintained for client-server architecture environment?

2- Explain the reasons of higher Software Maintenance cost.

For Web Reference-https://www.youtube.com/watch?v=YYy1so-VByE