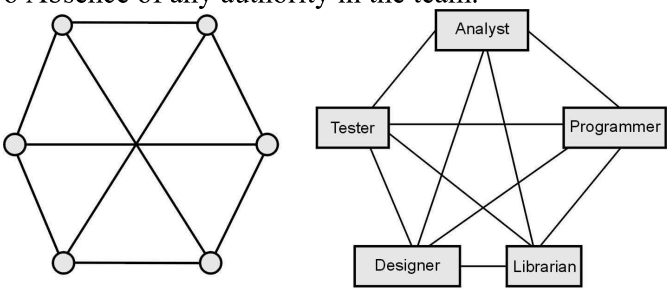
	Some attempts to promote this: **- Egoless programming** **- Chief programmer teams** **- XP** **- Scrum** **Egoless programming** Gerry Weinberg noted a tendency for programmers to be protective of their code and to resist perceived criticisms by others of the code Encouraged programmers to read each other's code Argued that software should become communal, not personal – hence 'egoless programming' **Chief programmer teams** Fred Brooks was concerned about the need to maintain 'design consistency' in large software systems Appointment of key programmers, chief programmers, with responsibilities for defining requirements, designing, writing and test software code Assisted by a support team : co-pilot – shared coding, editor who typed in new or changed code, program clerk who write and maintain documentation and tester. Problem – finding staff capable of the chief programmer role **Extreme programming (XP)** XP can be seen as an attempt to improve team heedfulness and reduce the length of communication paths (the time between something being recorded and it being used) Software code enhanced to be self-documenting Software regularly refactored to clarify its structure Test cases/expected results created before coding – acts as a supplementary specification Pair programming – a development of the co-pilot concept **Scrum** Named as an analogy to a rugby scrum – all pushing together Originally designed for new product development where 'time-to-market' is important 'Sprints' increments of typically one to four weeks Daily 'scrums' – daily stand-up meetings of about 15 minutes Unlike XP, requirements are frozen during a sprint At the beginning of the sprint there is a sprint planning meeting where requirements are prioritized, At end of sprint, review meeting where work is reviewed and requirements may be changed or added to.
10.	**Analyze the Team structure that addresses the issue of organization of the individual project teams.** **Software Project Teams** There are three main types of software project teams: **1. The Egoless Programming Team (the democratic team or Open structured teams)** o A "grass roots" anti-elitist style of team organization o Egoless : group owns the documents and code (not individuals) o Consists of 10 to 12 members o All decisions are based on team consensus o Depends on total cooperation of its members o Requires clear structure for the way the team interacts o Functional roles (e.g. moderator, recorder) rotate among team members o A technical leader has external responsibility and resolves issues when team doesn't reach consensus o No permanent central authority o Rarely found today, however, sometimes used in research organizations. o Provides - Higher morale and job satisfaction to the engineers - Therefore leads to less employee turnover.

o Suitable for less understood problems,
- A group of engineers can invent better solutions than a single individual.
o A manager provides administrative leadership :
- At different times different members of the group provide technical leadership.

Disadvantage :

o Team members may waste a lot time arguing about trivial points :
o Absence of any authority in the team.

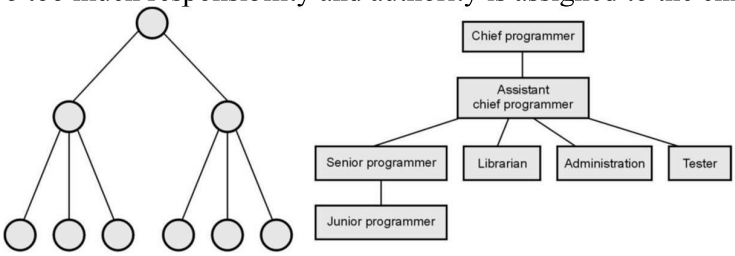


2. The Chief Programming Team

o Consists of 3 or 4 permanent team members : chief programmer, backup programmer, and librarian.
o Other programmers or analysts are assigned as needed.
o Chief programmer makes all technical and managerial decisions.
o Rarely used today, because of difficulty in recruiting and training chief programmers.
o A senior engineer provides technical leadership :
- Partitions the task among the team members.
- Verifies and integrates the products developed by the members.
o Works well when
- The task is well understood
- Also within the intellectual grasp of a single individual,
o importance of early completion outweighs other factors
- Team morale, personal development, etc.

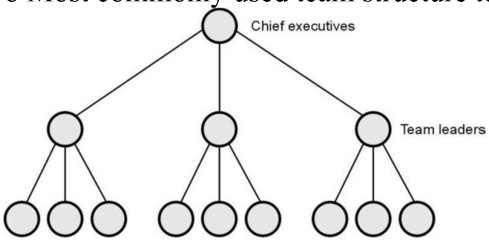
Disadvantage

o Chief programmer team is subject to single point failure.
o too much responsibility and authority is assigned to the chief programmer.



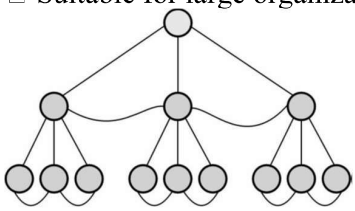
3. The Hierarchical Team (the controlled decentralized team, and project team) :

o Has a top-down flow of authority
o Project leaders manage senior engineers (senior programmers).
o Senior engineers manage junior engineers (junior programmers).
o Most commonly used team structure today.



4. Mixed Control Team Organization

 Draws upon ideas from both :
o democratic organization and
o chief-programmer team organization.

	□ Communication is limited o to a small group that is most likely to benefit from it. □ Suitable for large organizations.  **Matrix Organization** □ Organize people in terms of specialties o Matrix of projects and specialist groups o People from different departments allocated to software development, possibly part-time □ **Disadvantage** o Project structure may not match organizational structure o Individuals have multiple bosses o Difficult to control a project's progress <table><tr><th></th><th>Real-time programming</th><th>Graphics</th><th>Databases</th><th>QA</th><th>Testing</th></tr><tr><td>project C</td><td>X</td><td></td><td></td><td>X</td><td>X</td></tr><tr><td>project B</td><td>X</td><td></td><td>X</td><td>X</td><td>X</td></tr><tr><td>project A</td><td></td><td>X</td><td>X</td><td>X</td><td>X</td></tr></table>
11.	**Interpret the method Earned value Analysis**. **Earned Value Analysis or Earned Value Management** □ Simply, it is a project monitoring and measurement system that : 1. Establishes a clear relationship between planned accomplishments and actual accomplishments 2. Reinforces and rewards good planning practices □ Basic concepts of Earned Value Management (EVM) 1. Each task in a project earns value as planned work is completed 2. Earned value can be compared to actual cost and budgeted cost to determine variance and predict future performance □ The budgeted cost (e.g., dollars, person-hours, person-days, etc.) in terms of your baseline plan/budget of the work performed up to a specified point in time 1. Also known as Budgeted Cost of Work Performed (BCWP) □ Each task in the Work Breakdown Structure (WBS) is assigned a BCWP based on its individual cost. 1. Project BCWP is total of BCWP for all tasks required to complete the project