Chapter 3 Project Management

Lesson Objectives
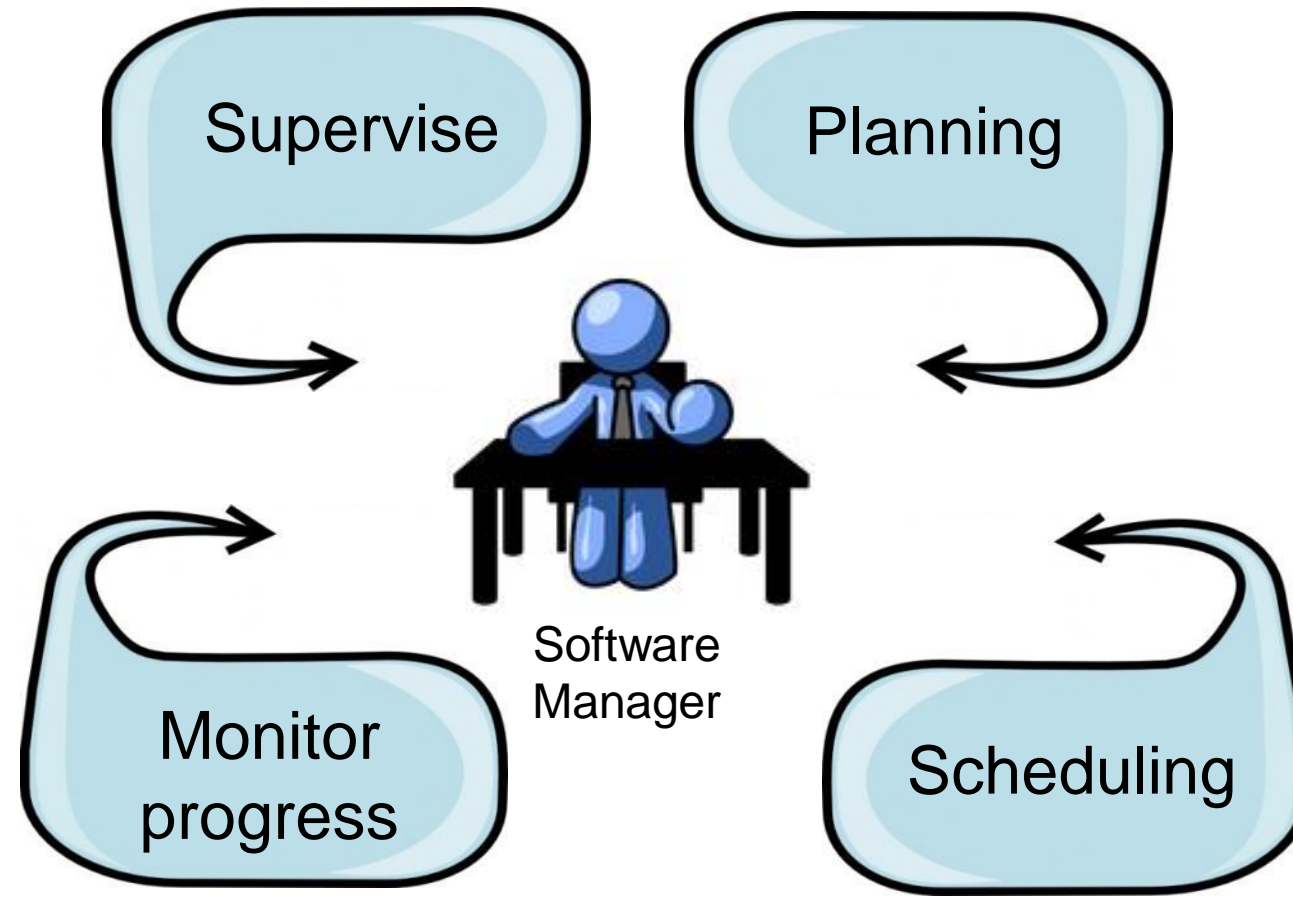
✓ Explain the principal tasks of software project management

✓ Evaluate the importance of project management

✓ Discuss the key issues of team working – team composition, cohesiveness & communication

TASKS OF SOFTWARE PROJECT MANAGEMENT

What are the main responsibilities of an IT project manager?

Supervise

Planning

Software
Manager

Monitor
progress

Scheduling

Management Activities

✓ Proposal writing

✓ Project planning and scheduling

✓ Project costing

✓ Project monitoring and reviews

✓ Personnel selection and evaluation

✓ Report writing and presentation

1. PROPOSAL WRITING

1. Proposal Writing

✓ Proposal – describes the objectives of the project and how it will be carried out.

✓ It usually includes cost and schedule estimations

2. PROJECT PLANNING

2. Project Planning

✓ Project planning is concerned with identifying the activities, milestones and deliverables

➢ Preliminary Investigation Report, Requirement specification, Design specification, Prototype etc.

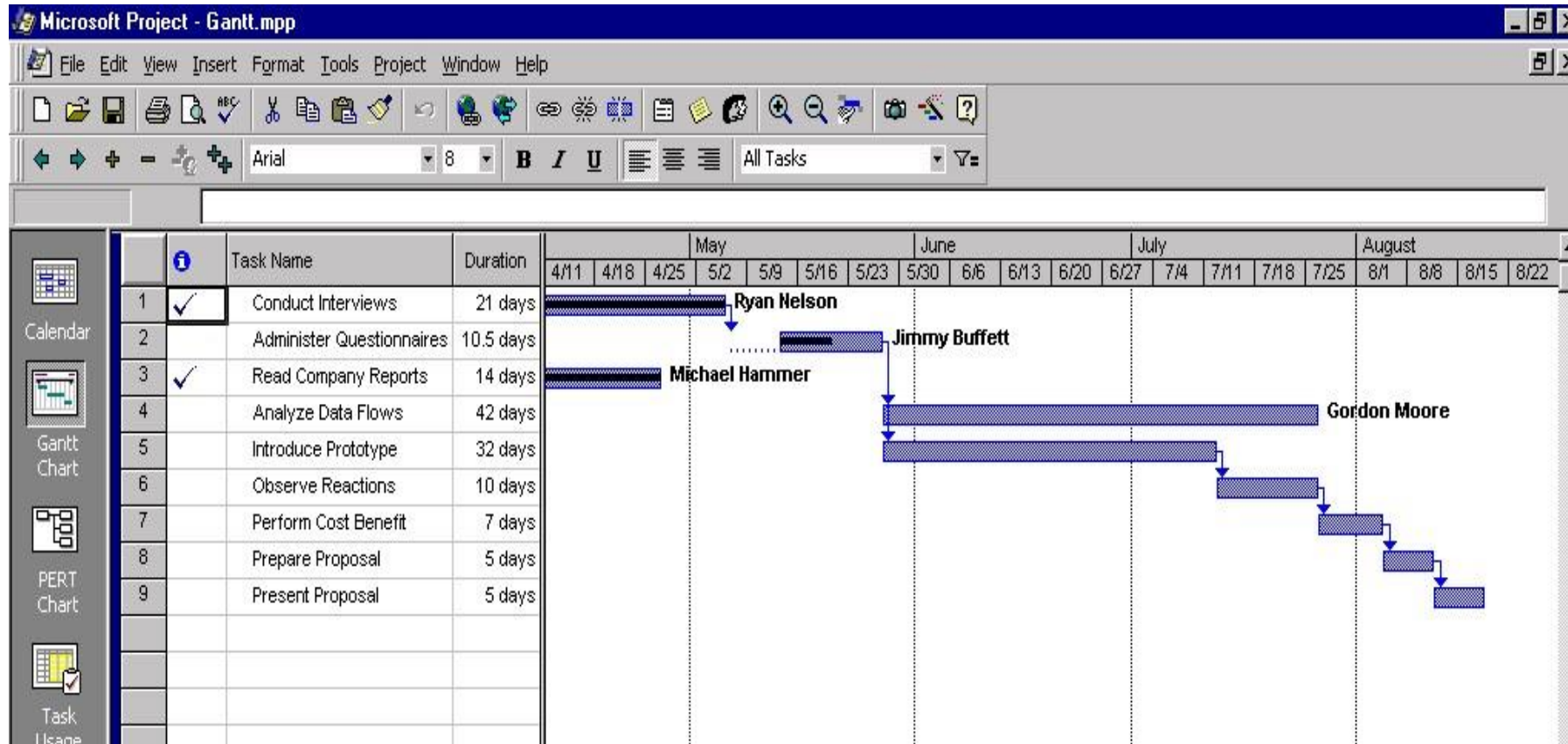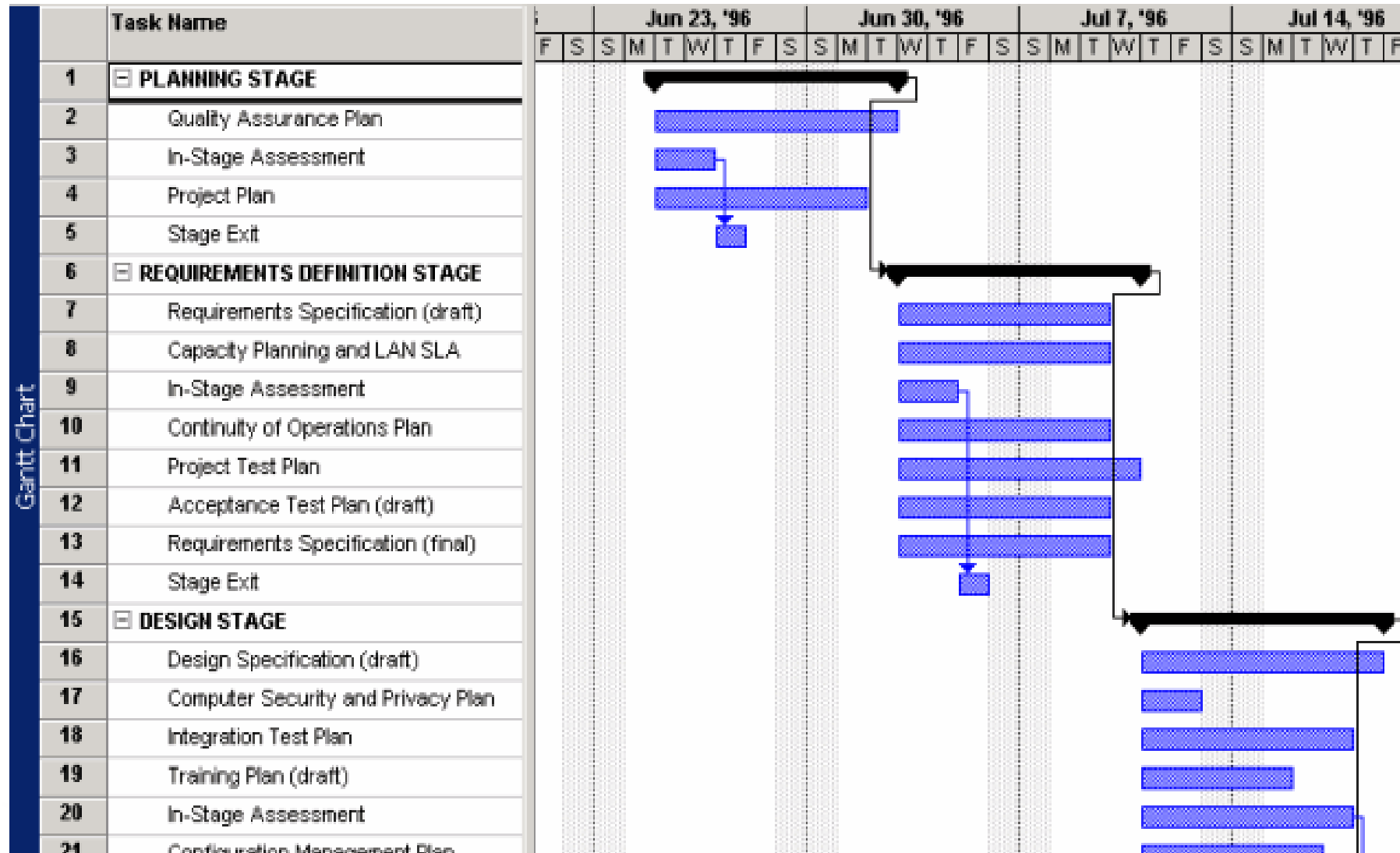✓ A project plan will be drawn up to guide the development towards the goals

2. Project Planning

✓ Two commonly used graphically notations to represent project schedule are:

➢Gantt chart

➢PERT chart/ CPM chart

(**P**rogram **E**valuation **R**eview **T**echnique / **C**ritical **P**ath **M**ethod)
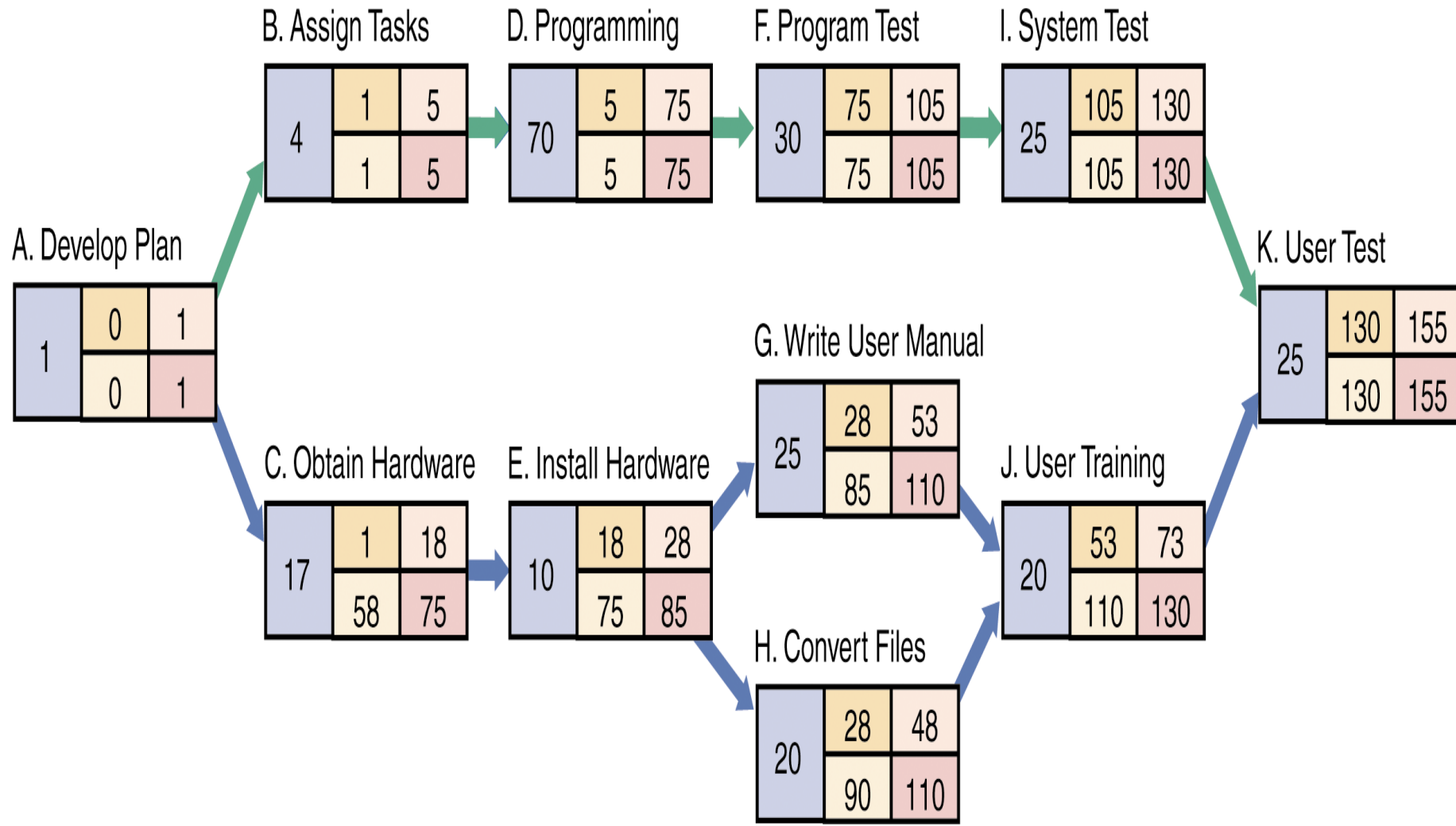
2. Project Planning – Gantt Chart

2. Project Planning – Gantt Chart

2. Project Planning – PERT Chart

Critical Path = A-B-C-D-F-I-K

3. PROJECT COSTING

3. Project Costing

✓ Cost estimation – to estimate the resources required to accomplish the project plan:

  ➢ hardware

  ➢ software

  ➢ people

✓ Cost-benefit analysis techniques include :

  ➢ Payback period

  ➢ Return on Investment (ROI)

  ➢ Net Present Value (NPV)

4. PROJECT MONITORING

4. Project Monitoring

✓ Is a continuing project activity

✓ Project manager must keep track of the project's progress in terms of the time, cost and quality (triple constraints) → compare actual project progress with planned project progress

➢ Problems : behind schedule, over budget, unable to achieve the agreed quality attribute etc.

4. Project Monitoring

✓ Corrective actions need to be adopted depending on the situation.

➢ E.g. add more staff, reassign tasks, using OT, encourage staff etc.

✓ May include informal monitoring besides formal project reviews

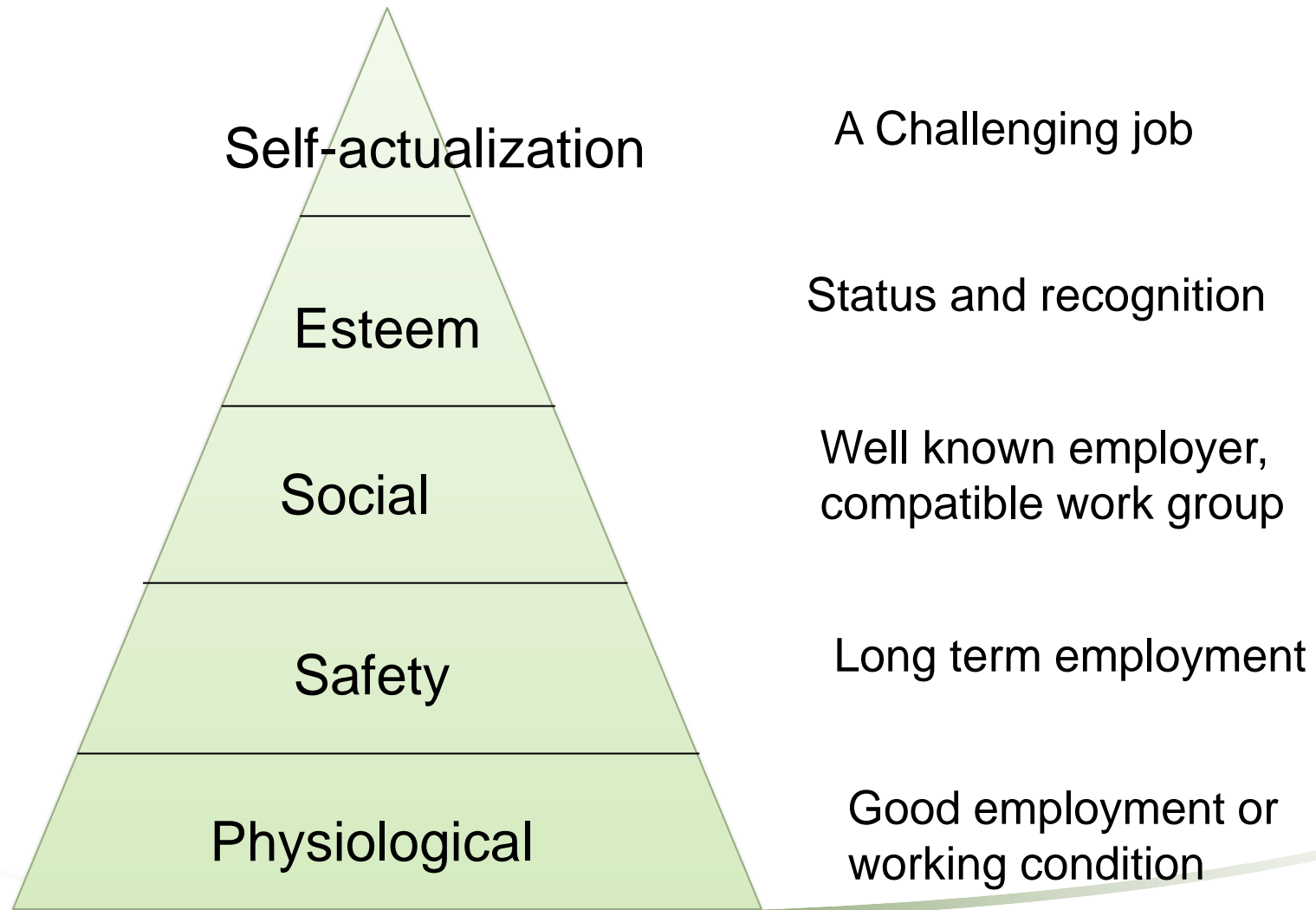# 5. PERSONAL SELECTION & MANAGEMENT

5. Personal Selection & Management

✓ Ideally skilled staff with appropriate experience will be available to work on the project

✓ Project manager should select the right candidates to join their project team.

✓ Factors on staff selection include: application domain and prog. language experience, attitude, communication ability and adaptability.

5. Personal Selection & Management

✓ People may be motivated by money, but they are motivated by other things as well – e.g. Job satisfaction.

✓ Thoughtful job design can increase staff motivation

✓ Different styles of leadership are needed in different situations

5. Personal Selection & Management: Maslow's Motivation Model

Self-actualization — A Challenging job

Esteem — Status and recognition

Social — Well known employer, compatible work group

Safety — Long term employment

Physiological — Good employment or working condition

5. Personal Selection & Management

✓ Putting together a group which works effectively is critical

✓ There are a number of factors that influence group working: group composition, group cohesiveness, group communication, group organization,

5. Personal Selection & Management

Factors that influence Group Working

i. Group Composition

Is there the right balance skills, experience and personalities in the team?

Task-oriented

Interaction-oriented

Self-oriented

5. Personal Selection & Management

ii. Group Cohesiveness

Does the group think of itself as a team rather than as a collection of individuals who are working together?

How to promote group cohesiveness?

Factors that influence Group Working

5. Personal Selection & Management

Factors that influence Group Working

ii. Group Cohesiveness

How to promote group cohesiveness?

1. Establish group identity
2. Team building activities
3. Members are treated as responsible & trustworthy

5. Personal Selection & Management

iii. Group Communication

Factors that influence Group Working

Do the members of the group *communicate effectively* *with each other?*

How to improve group communication?

5. Personal Selection & Management

iv. Group Organization

Is the team organized in such a way that everyone feels *valued* *and is* *satisfied* *with their role in the group?*

Factors that influence Group Working

Did you assign the right job to the right people?
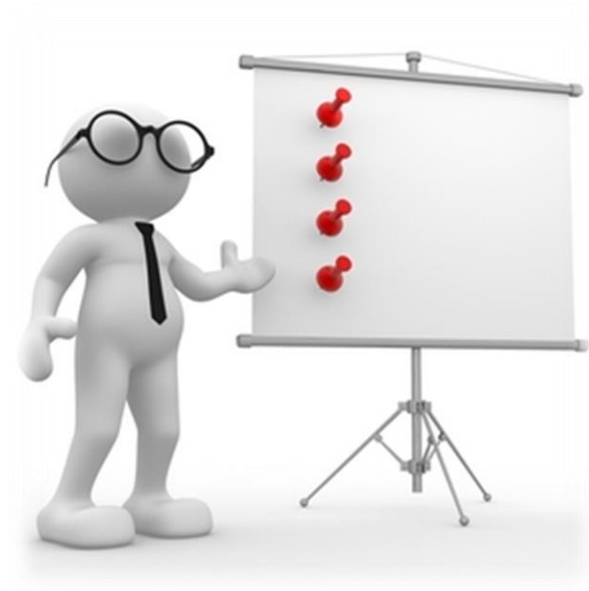
6. REPORT WRITING AND PRESENTATION

6. Report Writing and Presentation

✓ Project managers are responsible for reporting on the project

✓ They must write concise and coherent documents

✓ Communication effectively both orally and in writing is an essential skill for a project manager.
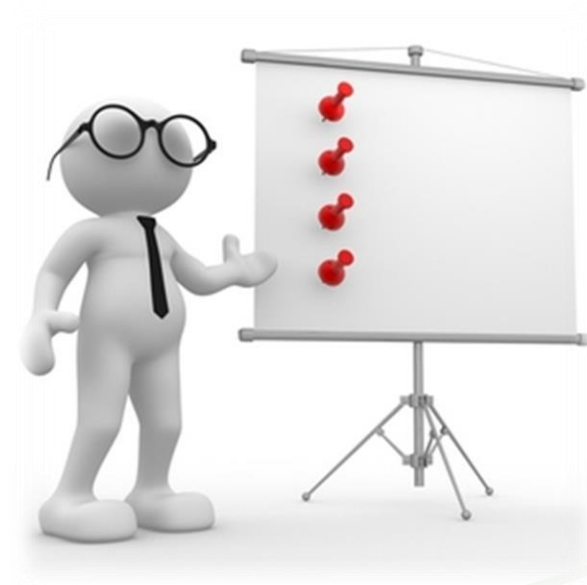
Can good project management guarantee project success?

✓ Good management cannot guarantee project success. However, bad management usually results in project failure. The software delivered late, costs more than originally estimated and fails to meet its requirements.

Exercise

Create a Gantt Chart based on the following information.

Activity	Duration (month)	Predecessor	Overlap
A	½	None	None
B	1	A	None
C	2	B	¼
D	1	B	None
E	½	C, D	None