PROJECT MANAGEMENT

Project Management

- a set of principles, methods, and techniques for planning, scheduling, organizing, leading, and resourcing to achieve specific goals
- helps to complete projects on schedule, within budget, and in accordance to project **specifications** (criteria and constraints).
- ensures that projects meet time, scope, quality and cost

Project Management

- is about structure, control, attention to detail and continuously monitoring the process.
- The following gives an overview of the things a project manager needs to do to deliver a project:
  - ensure there is a clear understanding why a project is being done and what it will produce;
  - plan the project to understand how long it will take and how much it will cost;
  - manage the project to ensure that as it progresses well, achieves objectives, and is delivered within the set timeframe and budget;
  - complete the project properly as per the quality expectations

Project

- a **project** is a temporary endeavor to create a product
- has a defined beginning and end
- the temporary nature of projects stands in contrast with business as usual (or operations), which are repetitive, permanent, or semi-permanent functional activities to produce products or services.
- In practice, the management of these two systems is often quite different, and as such requires the development of distinct technical skills and management strategies
- A successful project is one that meets or exceeds the expectations of your stakeholders

Project Components

There are some fundamental components of project management that are useful to understand.

Scope:

- work that needs to be accomplished to deliver a product, service, or result with the specified features and functions

Methodology:

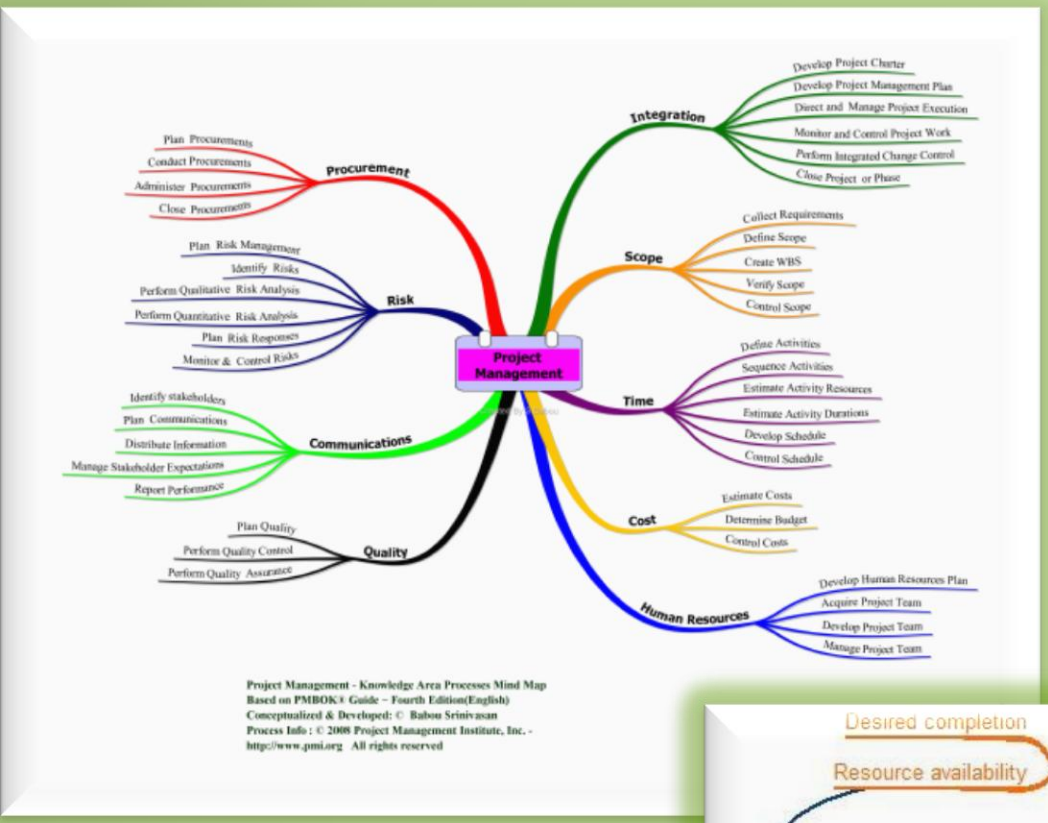
- states how the project will be completed

Time:

- states the start date, finish dates and milestone dates such individual times for the different phases of the project.

Cost:

- define sources of funds and an initial budget, if known


Project Management
Integration
Develop Project Charter
Develop Project Management Plan
Direct and Manage Project Execution
Monitor and Control Project Work
Perform Integrated Change Control
Close Project or Phase
Scope
Collect Requirements
Define Scope
Create WBS
Verify Scope
Control Scope
Time
Define Activities
Sequence Activities
Estimate Activity Resources
Estimate Activity Durations
Develop Schedule
Control Schedule
Cost
Estimate Costs
Determine Budget
Control Costs
Human Resources
Develop Human Resources Plan
Acquire Project Team
Develop Project Team
Manage Project Team
Procurement
Plan Procurements
Conduct Procurements
Administer Procurements
Close Procurements
Risk
Plan Risk Management
Identify Risks
Perform Qualitative Risk Analysis
Perform Quantitative Risk Analysis
Plan Risk Responses
Monitor & Control Risks
Communications
Identify stakeholders
Plan Communications
Distribute Information
Manage Stakeholder Expectations
Report Performance
Quality
Plan Quality
Perform Quality Control
Perform Quality Assurance
Project Management - Knowledge Area Processes Mind Map
Based on PMBOK® Guide – Fourth Edition(English)
Conceptualized & Developed: © Babou Srinivasan
Process Info : © 2008 Project Management Institute, Inc. -
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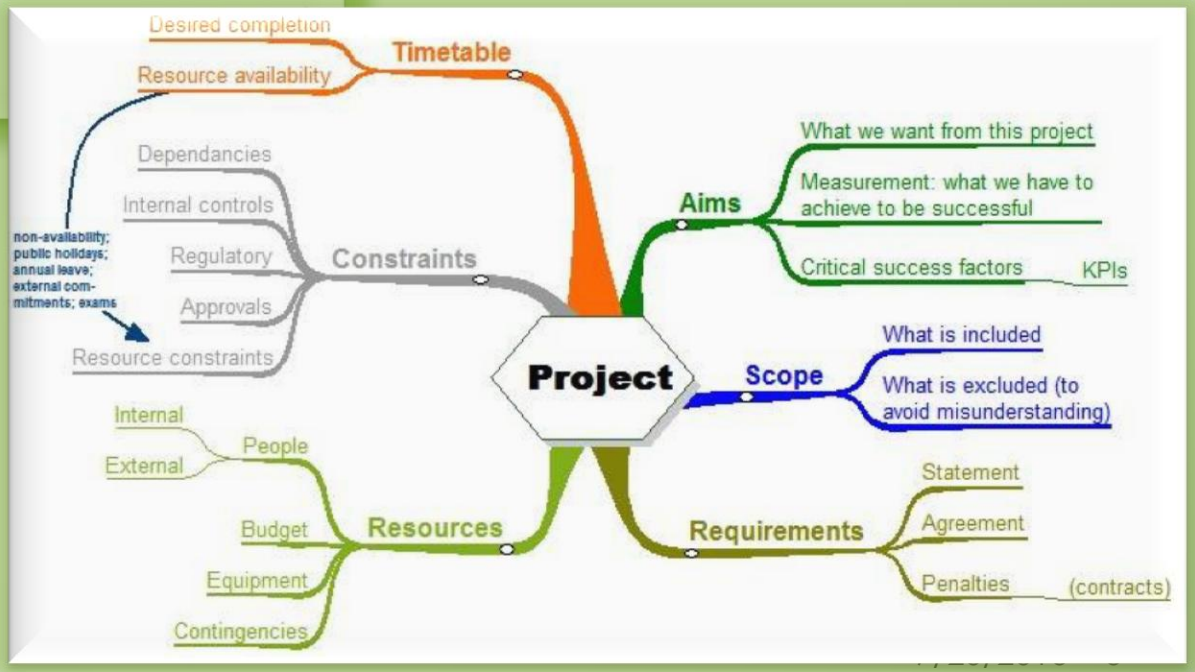

Project
Timetable
Desired completion
Resource availability
Constraints
Dependancies
Internal controls
Regulatory
Approvals
Resource constraints
non-availability; public holidays; annual leave; external commitments; exams
Aims
What we want from this project
Measurement: what we have to achieve to be successful
Critical success factors
KPIs
Scope
What is included
What is excluded (to avoid misunderstanding)
Requirements
Statement
Agreement
Penalties
(contracts)
Resources
People
Internal
External
Budget
Equipment
Contingencies

Project Planning

Project planning is a process of sequencing activities and organizing resource

- Includes the project challenge, design brief, an itemized budget and a chart that schedules all the tasks to complete the project
- scheduling chart shows the order of the tasks, the length of time each task will take and who is responsible for doing each one.
- also shows ‘dependencies’ – tasks that are dependent on previous tasks being started or completed.
- will help you to identify problems before they occur and ensure the project is completed on time

Project Planning

Some helpful steps in establishing your plan:

- write down every task you think you need to do for the project making each task discrete and separate
- identify the categories in the project and then the main tasks within those categories.
- use yellow sticky note pads with each task written on a separate sheet. It helps to think of the project in categories.
- break each main task into sub tasks and then, if necessary, break those sub tasks into even smaller tasks until you have identified all the tasks associated with the project.

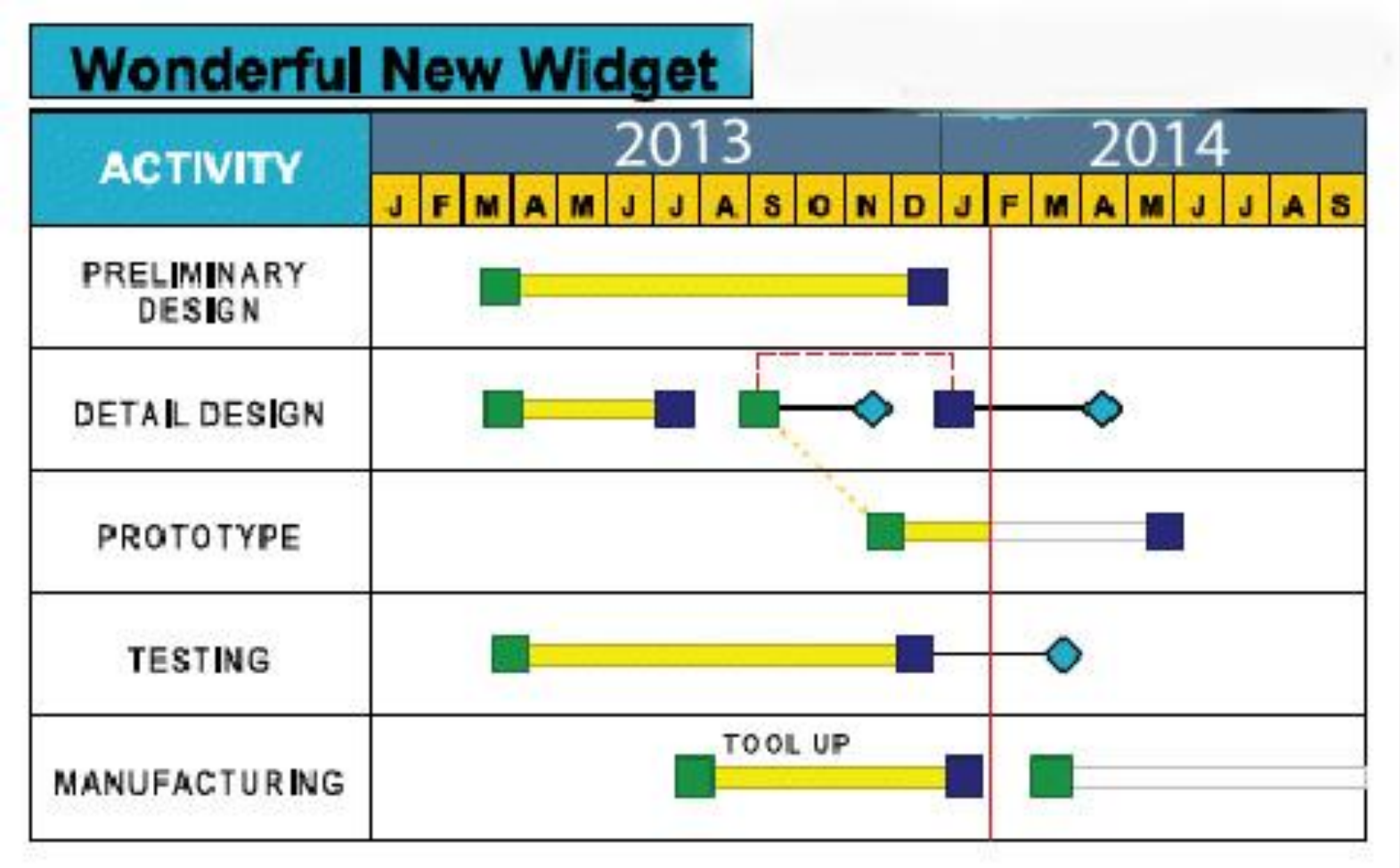
Project Planning

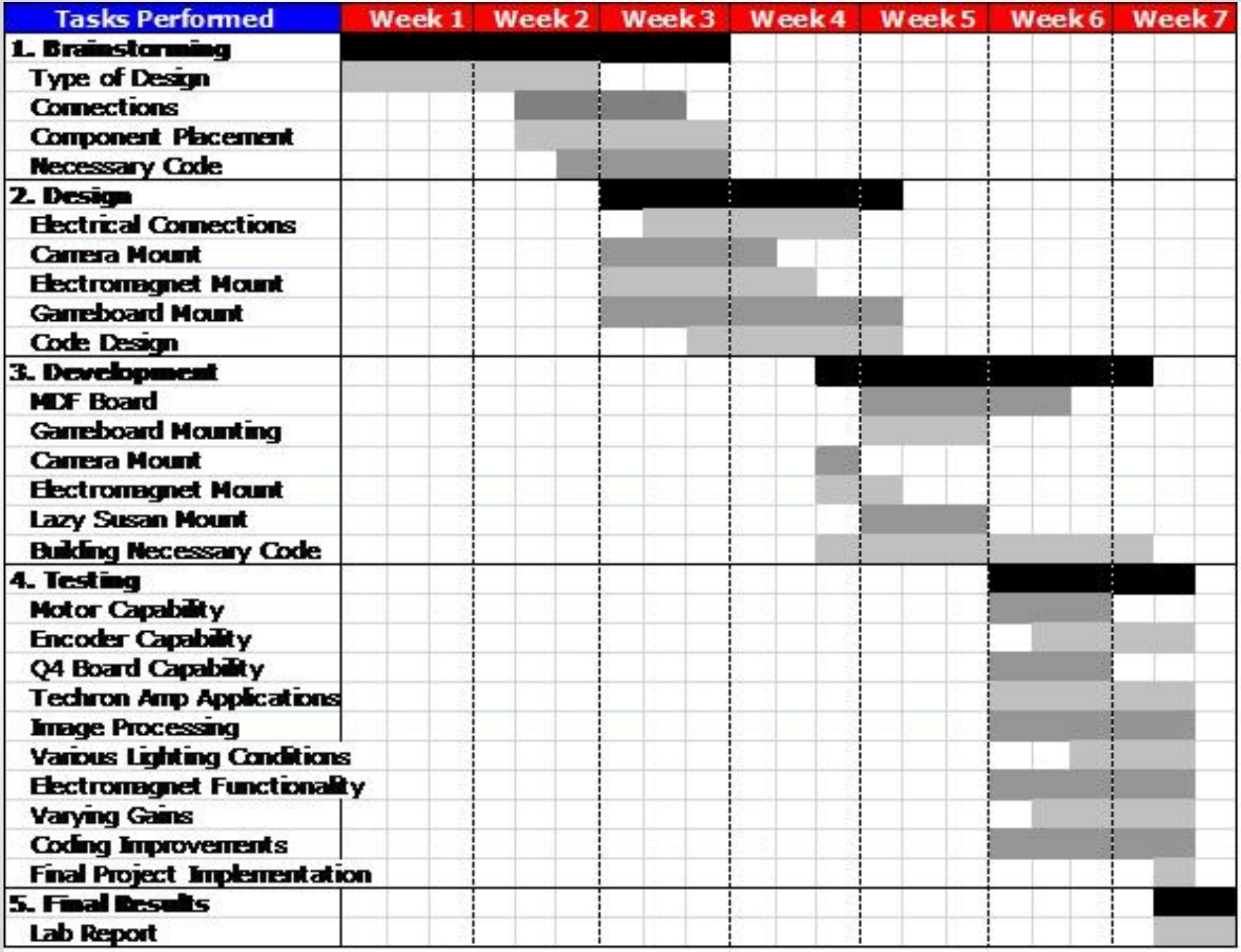
There are several recommended steps to follow to develop your scheduling chart.

1. Identify tasks and possible milestones
2. Place the tasks in order
3. Estimate task times
4. Allocate tasks to team members
5. Identify costs and resources and update your budget
6. Review the project plan and develop contingencies that may be required
7. present the project plan as actions in a planning tool such as a Gantt chart.

Gantt Chart

- a type of bar chart that illustrates a project schedule.
- illustrate the start and finish dates of the elements of a project.
- elements comprise the work breakdown structure of the project.
- can be used to show current schedule status using percent-complete shadings and a vertical "TODAY" line as shown here.


Wonderful New Widget
ACTIVITY
2013
2014
J F M A M J J A S O N D J F M A M J J A S
PRELIMINARY DESIGN
DETAIL DESIGN
PROTOTYPE
TESTING
MANUFACTURING
TOOL UP


Tasks Performed
Week 1
Week 2
Week 3
Week 4
Week 5
Week 6
Week 7
1. Brainstorming
Type of Design
Connections
Component Placement
Necessary Code
2. Design
Electrical Connections
Camera Mount
Electromagnet Mount
Gameboard Mount
Code Design
3. Development
MDF Board
Gameboard Mounting
Camera Mount
Electromagnet Mount
Lazy Susan Mount
Building Necessary Code
4. Testing
Motor Capability
Encoder Capability
Q4 Board Capability
Techron Amp Applications
Image Processing
Various Lighting Conditions
Electromagnet Functionality
Varying Gains
Coding Improvements
Final Project Implementation
5. Final Results
Lab Report

Time / Task	24th March Week1	31st March Week2	7th April Week3	14th April Week4	21st April Week5	28th April Week6	19th May Week9	26th May Week10	2nd June Week11	9th June Week12	16th June Week13	23nd June Week14
Project Definition												
Material Testing												
-Standard of Specimens												
-Build specimens												
-Testing												
-Data Analysis												
-Material Properties												
Mechanical Design												
-Research on approaches												
-Selection of apporaches												
-Conceptual Designs												
-Evaulate conceptual designs												
-Final design												
-Design Analysis												
-Finalized drawings												
-Manufacturing												
Presentation and Report												

Responsible List:
Material Testing - Kerry Yeung, Nikki Wong, Ken Ting
Mechanical Design(Research Stage) - Kate Shih, Karen Wong
Machine Testing - Maria Ma, Bill Wong, Mic Wong

Helpful Hints

- involve others……try to work with others for brainstorming sessions
- NOTE: you won't get it right the first time, nor will they be in the correct order
- you'll find you keep thinking of more things and you keep adding them in
- that's OK during this initial planning stage

Proper Planning Prevents Poor Performance

Review, Reflect, Report

- review and reflect on your experience.
- Ensure you understand what happened and why.
- Reflect on any failures and mistakes positively and objectively.
- Reflect on successes gratefully and realistically.
- Include a reflection report in your portfolio and make observations and recommendations about future project management activities.
  - Did the project fully solve the problem that it was designed to address?
  - Can we take things further, and deliver even bigger benefits?
  - What lessons did we learn that we can apply to future projects?

Project Management Analogies

- To the optimist, the glass is half full.
- To the pessimist, the glass is half empty.
- To the project manager, the glass is twice as big as it needs to be.

Amusing Project Management Analogies

A clergyman, a doctor and a project manager were playing golf together one day and were waiting for a particularly slow group ahead. The project manager exclaimed, "What's with these people? We've been waiting over half and hour! It's a complete disgrace." The doctor agreed, "They're hopeless, I've never seen such a rabble on a golf course." The clergyman spotted the approaching greenkeeper and asked him what was going on, "What's happening with that group ahead of us? They're surely too slow and useless to be playing, aren't they?" The greenkeeper replied, "Oh, yes, that's a group of blind fire-fighters. They lost their sight saving our clubhouse from a fire last year, so we always let them play for free anytime." The three golfers fell silent for a moment. The clergyman said, "Oh dear, that's so sad. I shall say some special prayers for them tonight." The doctor added, rather meekly, "That's a good thought. I'll get in touch with an ophthalmic surgeon friend of mine to see if there's anything that can be done for them." After pondering the situation for a few seconds, the project manager turned to the greenkeeper and asked, "Why can't they play at night?"

A project manager was out walking in the countryside one day when a frog called out to him. He bent down, picked up the frog and put it in his pocket. The frog called out again, saying, "If you kiss me it shall turn me back into a beautiful princess, and I'll stay with you for a week as your mistress." The project manager took the frog out of his pocket, smiled at it, and put it back into his pocket. The frog called out once more, "If you kiss me and turn me back into a princess, I'll stay with you for as long as you wish and do absolutely anything that you want. Again the Project manager took the frog out of his pocket, smiled at it and put it back. Finally, the frog demanded, "What's the matter? You can turn me back into a beautiful princess, and I'll stay with you for ever and do anything you want. Why won't you kiss me?" to which the project manager replied, "Understand, I'm a project manager. I simply don't have time for a girlfriend, but a talking frog .... that's cool."