Wolf Academy

First Development Project

Address Book

I. Overview

Firstly, congratulations on completing the beginners phase of Wolf Academy. Throughout the academy, you have completed modules on a variety of topics such as:

- Programming
- Databases
- Requirements capture
- Software lifecycle
- Software testing

Now is the chance to demonstrate the skills and knowledge that you have acquired. This is achieved through a piece of independent work through which you will:

- Communicate a proposed solution to the problem
- Design, implement and evaluate a software artefact
- Present your body of work through formal documentation and software demonstration

The software development project you are about to embark on will the follow the waterfall model. As you know, the waterfall model is best suited to projects where the requirements are set in stone and the project can simply follow a linear sequence.

Everything you have read so far you should be familiar with, the only questions you are hopefully asking yourself is how am I going to implement this?

Don't worry, this booklet will explain to you what a project is and how a term known as project management can be applied easily to your project to maximise your chance of success.

II. Understanding the basics

Project management is full of jargon and concepts, many of which are unnecessary, except for the largest and most complex of projects. However, there is some basic terminology and some simple project management concepts which are helpful to understand and which will aid you in fulfilling your project.

What is a project?

Essentially, a project is a task with a known end point. For example, building a new house is a project, the end point being when the house is built. Similarly, creating a new piece of computer software is a project, as is launching a new product for a business. Projects can be used to complete many different types of tasks.

Projects fulfill some clear pre-defined objective, in a planned period of time, and to a planned cost. Once the project is complete something will have changed – for example, you have a new house, a new computer system or new product.

What is project management?

Project management is a formal discipline for managing projects. Project management has been developed over the past few decades as it has become apparent that without a structured approach, people are not very good at completing projects successfully.

The aim of project management is to ensure that projects are completed and that the end point (the new house, computer system or new product) is achieved. More than this, project management is about reaching that end point predictably, which usually means to a given cost and within a planned amount of time.

The project's customer

Every project is done because someone wants it to be done. The person who wants it to be done is called, in project management terminology, the project customer. The customer may be yourself, your boss at work, someone who buys products and services from you, or anyone else you work for or with. The customer may be one person or a group of people.

The project team

The project you are about to manage will have a whole range of tasks that need to be performed to complete it. For projects that are smaller and simpler to manage, such as this one, you may be the both the project manager and the person who actually does all the tasks planned. For larger projects a number of people will be involved at different times in the project's life.

Delivery and deliverables

Delivery in the context of projects simply means getting the things done you set out to do. Your role as a project manager is therefore to deliver the project.

Deliverables are what is delivered by a project – so taking examples from earlier, the deliverables from the respective projects are a new house, new computer system or a new product. In a project the deliverables wanted are defined at the start of the project, and your success as a project manager is in delivering them in the planned time and to the expected cost.

III. Creating a project plan

Project management is about ensuring that you achieve your objectives to a predicted time and cost. The basis for doing this is to understand clearly how you will do your project. This understanding comes by developing a project plan.

Professional project managers have a huge set of tools, a vast set of jargon, and usually some helpful experience to produce plans. Planning builds on the normal human approach of breaking problems that are too large to resolve in one go into smaller chunks. The following defines the logical activities in producing a plan.

1. Divide the overall project into its component tasks and continue to divide the component tasks into smaller tasks until you have a comprehensive list of things that must be done to complete the project
2. Estimate the length of time each task will take
3. Order the tasks into the right sequence
4. Determine the people, money and other resources you need to meet this plan and determine their associated costs
5. Check what resources you actually have available and refine your plan to take account of this. Once you have done this you have a complete plan.
6. Review the plan – does it match your needs? Looking at the plan – can you actually do it, and should you do it?

One of the problems for people new to project planning is what level of detail to go to in breaking tasks down. This is a subjective judgement and there no hard and fast rules, but remember the purpose of the plan: you are not defining a detailed step-by-step instruction for carrying out each task in the plan, but a structure you can use to estimate times and costs, allocate work to people, and manage delivery. The questions to ask once you have broken your work into its component tasks are:

- Is it enough to help you manage the work?
- Does the detail help you estimate and schedule the project?

So, for example, consider three different task breakdowns for a decorating project.

INSUFFICIENT DETAIL	SUFFICIENT DETAIL	TOO MUCH DETAIL
Decorate room	Select and buy paint Prepare walls Paint first coat Paint second coat Final touch up	Go to DIY store Get sample pots of paint Try on wall Wait for it to dry Select option Estimate how much paint you want Return to DIY store Buy paint Survey walls Identify all bits of walls that need to be fixed etc…

If your project lasts any length of time, especially if it is over a month and you are inexperienced, it is helpful to add some milestones. Milestones are points in a project that identify when you have completed an important stage of the project. They are not activities in their own right, but reflect the completion of a series of activities and the production of some key deliverable.

Examples of milestone for two projects are shown below

	PROJECT ONE	PROJECT TWO
PROJECT DESCRIPTION	Building your own house	Developing a computer system
POSSIBLE MILESTONES	Completion of foundations Completion of walls and roof Completion of internal walls, plumbing and electrics Completion of internal fitting and decorating	Requirements gathered System designed Programming code written System tested Bugs fixed and system handed over for live use

On the next page you will see an example project plan which includes tasks broken down into sufficient detail with start and end dates as well as the allocated resource.

You will find a column called WBS Number. This stands for Work Breakdown Structure and is a method for organising a team's work into manageable sections.

Project Plan	**Project Name:** Office Re-fit project					
Task Number	WBS Number	Task Description	Dependencies	Who does it	Start	End
1	1	Select contractor to work with				
2	1.1	Document requirements		Dave	31st May	31st May
3	1.2	Write tender	1.1	Dave	31st May	31st May
4	1.3	Select possible contractors	1.2	Dave	1st June	1st June
5	1.4	Send to possible contractors	1.3	Dave	1st June	1st June
6	1.5	Wait for responses	1.4	Delay	2nd June	15th June
7	1.6	Review responses	1.5	Dave	16th June	17th June
8	1.7	Select contractor	1.6	Dave	20th June	20th June
9	2	Prepare office				
10	2.1	Design office layout based on requirements	1.7	Contractor	21st June	23rd June
11	2.2	Install new sockets	2.1	Contractor	24th June	27th June
12	2.3	Fit carpets	2.1, 3.4	Contractor	6th July	7th July
13	Milestone 1 – Office Fitted (excl. phones)				7th July	
14	2.4	Install phones	3.5	Adam	1st August	4th August
15	3	Install furniture				
16	3.1	Choose new furniture	1.7	Dave	21st June	22nd June

17	3.2	Order furniture	3.1	Dave	23rd June	23rd June
18	3.3	Wait for furniture to be delivered	3.2	Delay	24th June	21st July
19	3.4	Remove old furniture		Contractor	1st July	6th July
20	3.5	Fit new furniture	2.3, 3.3	Contractor + 1	2nd July	29th July
21	Milestone 2 – Office Furnished				29th July	
22	4	Install new PCs				
23	4.1	Choose new PCs		Mary	17th June	20th June
24	4.2	Select software		Mary	21st June	22nd June
25	4.3	Order PCs and software	4.1, 4.2	Mary	23rd June	23rd June
26	4.4	Wait for PCs to be delivered	4.3	Delay	24th June	21st July
27	4.5	Install software on PCs	4.4	Mary, Bob	22nd July	1st August
28	4.6	Install configured PCs	3.5, 4.5	Mary, Bob	2nd August	12th August
29	Milestone 3 – Project Complete				12th August	

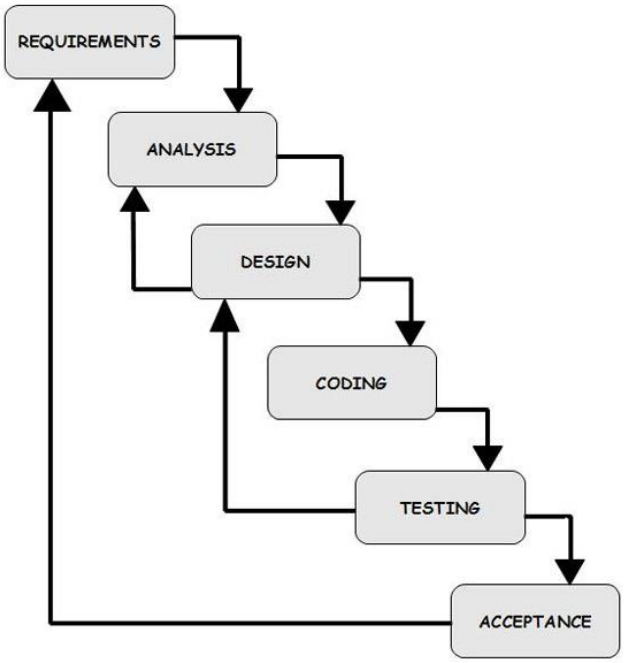
Now that a plan has been created, the above project is ready to go.

When you do your own software development project, resist the temptation to skimp on planning so you can start the development of your application or database immediately. The time you spend up-front on planning will be repaid several times over in time saved later.

Focus on getting your plan complete more than worrying about estimates. A poor estimate could delay completion of the project, but a missed task may mean you cannot complete the work at all.

IV. Scenario

For your first development project you will develop an address book program. You will follow the waterfall model as shown below



You will begin this project by gathering the requirements from an academy tutor and sorting them into functional and non-functional requirements

You are **not** to move onto the next phase until your documentation from each phase has been reviewed and verified by an academy tutor.

V. Solution

To complete this project you will use tools and techniques that you learned throughout the academy.

- Wolf Data Objects
- SQL Server 2008 R2
- C#
- WPF
- Project planning and management
- Database Normalisation and Database Design

VI. Deliverables

Use the following checklist to ensure you have all the necessary deliverables of the project

- Project plan
- Business Requirements Document
- Design Documentation
    - Application Wireframes
    - Database Design
        - Primary and Foreign Keys with correct relationships established
        - Correct Data Types
        - Appropriate use of NULL and NOT NULL values
- Testing Documentation
    - Test plan
    - Test data
    - Test log
- Demonstrable working software

VII. Resources

To complete this project you should use the resources which can be found in the following directory

```
\\wolfdata1\Data\AcademyShare\Academy Resources\Templates
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Resources include:

- Document Template