PIZZA SHOP

Project Plan

Date: <Datum voltooid>
Group: Group ##

Version: Version 1.0
Status: Open for Student

Project plan Introduction project

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1 Reading Guide

This project plan is written as an example and is by no means a template you can copy literaly. The principle of this document is to show which components could go into a project plan. Where needed an explanation and reasoning is added in italic. It is the goal to aid you as a student in your future career when writing these types of documents.

A project plan has different sections, in this plan we have added six sections, a description of the project; agreements that were already made; A overview of the project organization; a risk assesment; a planning of all deliverables; and a PERT. Therefor, it should give all stakeholders a clear overview of the project and what is going to happen in the next 12 weeks. When projects become larger, or when a different type of project management is needed, a different set of sections is going to be in your project plan. As with all documents, make sure that you know why you add certain sections.
Let us no have a look at the different sections. Starting with the description, this section gives you an idea of the project and what we expect from you. In this case it describes the starting situation of the Pizza shop and what problems it is facing. This is only to give you a more complete overview of what is known before you start the project. If you would compare this to a contractor that would have to build a house, they would need to know a number of things: where will it be built, what should it look like, what tools do I need, etc. The introduction of a project plan should give you an indication about such matters. However, you would still have to interview your client for more details. The introduction never has all the final information, because there is always reasons why things can change, or were unknown at the beginning of the project. Therefore make sure to keep an open mind and keep in contact with your client.
When there are disagreements within the proiject, the agreements that you have set up are important, but also give some guidance as to how often to have contact. Agreements are not only rules and regulations you have to strictly follow, they also contain solustions for scenarios you could encounter. When starting a project you first look at the risks, knowing these risks you can make some precautions. In most cases these precautions are captured in your agreements. Taking again the example of building a house, one of the agreements before you start building, will be about the blue print. It would be problematic if the client wants to have a bathtub while the contractor thinks it should be an indoor swimming pool. here are many kinds of risks, including communication, time, resources, etc. In most cases these risks can be mitigated by having different meetings with the relevant stakeholders, planning them regularly will make it easier for all parties to remain up-to-date.
Lastly and most importantly your planning. Taking the house building, you as a client want to know when you can move in. However the contractor also needs to know when the bricklayer has to show up and when the roofer has to do his thing. Without having the walls up, there will be nowhere to put the roof. So a planning is the most important part for you as a project group and for the client, as well as all other stakeholders. Making a planning is very hard to do and you will find in larger projects that some deadlines will have to be delayed. This is not a problem, as long as this is communicated with all parties (again, you need to get your walls up before the roof can go on). For this reason are two tools to help you, a Pert (a graph showing the relations between different tasks) and a Gantt chart (a chart showing the planning through time). To make these, first you need to define all tasks, make sure to write down what each task is about, and what the prerequisite and out come of the task is. After this, making both charts is childs play. (you already wrote everything down, all you have to do is colour a graph 😉)

Having all this information will help you to get started with a project, normally this is made in the first step of a project and should be finished afterwards. (so don't touch it unless you want to read something). When changes need to be made, you need to agree this in the minutes you make of every meeting.

2 Project definition

This chapter starts by defining the project and its relevance. It is important to understand what the project encompasses and the situation it is placed in. In this part the background is described, the goals and the different deliverables. In total, it should provide a good overview of the project as a whole.

2.1 Project background

Mario is the owner of a small family pizza shop which has been in the family ever since his birth. The pizza shop is known for the good quality and delicious tasting homemade pizza.

Recently, Mario's business has been gaining popularity and some changes must be made to accommodate for the new flow of customers. Currently, the whole pizza making process is handled by the two employees, Mario and his brother Luigi. It is difficult for Mario to expand his staff, the shop is rather small and the profits are not large enough to sustain an extra staff member. Mario wishes you to help him automate some of the processes using smart ICT systems. Currently, the workflow looks something like this:

- The cashier receives an order from the customer.
- The same employee shouts the order to the kitchen.
- The cook attempts to comprehend the shouting and writes it down on a note.
- The cook places the prepared pizza on a production line which goes through an oven.
- The pizza reaches the end of the production line and is ready to be served.
- The cook periodically looks at the end of the production line and shouts to the cashier if a pizza is ready.
- The cashier picks up the pizza, if he hears the cook, and brings it to the customer.

2.2 Problem definition

Mario needs help with improving the workflow of his business. Currently, there are only two employees in the shop. More people cannot be employed because of budget and space constraints. As the shop increased the number of customers problems started to arise. More and more complaints got in about receiving the wrong pizza, a cold pizza or not getting anything at all.

With the help of a group of students, some of the processes can be automated. Using your ICT skills, you can modernize the shop, improve the work conditions of the employees and enable the owner to make delicious pizzas for his new clientele.

2.3 Project goal

The project goal is to help Mario and his brother to create a more efficient operation. Make Mario's shop great again, using IT solutions!

In the planning you can find all the deliverables required for the successful software solution for the pizza shop. The goal itself can be written as the research question for some projects. With describing the goal you can also describe the moment your project is completed.

2.4 Expected result

There are five different courses which will be necessary for this project. Each of them is tightly coupled with this project. Every week new content is thought, which can directly be applied to the project. Combining all these lessons will complete the deliverables for this project.

Project Deliverables

Application Development	• An order application A finished items application
Data Design	• A process review with advice
Media	• A user interface design
Infra	• A network connection between the two applications
Embedded Systems	• A hardware solution with break beam, temperature sensor and counter.

2.5 Way of working

The project group consist of 3 students. In the kickoff (week 2) these groups will be made. Before starting, it is important to keep a few rules in mind:

- All students must participate in this project
- Each student must participate in the 5 different courses given in the first semester
- One group can have at most one student who is retaking this project

The tutor will arrange for the first meeting (week 2). For the rest of the project, it is the responsibility of the group to arrange the weekly meetings with the tutor and the group. It is important to inform the tutor about the progress of the group and discuss challenges that will occur in a timely fashion (in other words, as soon as something goes wrong let your tutor know).

2.6 Scope

The scope of the project is only to improve the situation in the Pizza shop with available IT solutions. It is not needed to buy or get external sources to run this project. At the end of the project you will be able to present a full working prototype. The suggestion solution within the project is a proper and complete solution for a prototype. When a group wants to do more than suggested, this needs to be discussed with the tutor. When both parties agree the scope of this project can be increased.

3 Project structure organization

Describe the project organization in this chapter. Indicate which roles there are, what the tasks and responsibilities are, and which person has which roles. Also make sure to mention the different responsibilities of each role, as well as a communication plan. Especially when working with larger groups, it could be that not everyone has to attend every meeting or knows all the details. In such a situation you need to ensure that the right person for the information or contact point is known.

If a project group becomes bigger you can add a correct organizational structure with an organization chart. Indicate in the organization chart who has which role.

<Describe the project organization as clearly and concretely as possible: if you must carry out an assignment as an individual, you may have multiple roles>

3.1 Project leader

- Responsible for communication between the team and the tutor
- Keep track of deadlines
- Motivate the team
- Work on the project

3.2 Project members

- Each week one of the team members is responsible for the meeting minutes
- Work on the project

3.3 Tutor

- One of the teachers in this project will be your tutor. You can go to him every time when there is something unclear or a problem. Do not hesitate to go and ask all kind of questions.
- Weekly communication with the team.
- Review all the deliverables received from the team.

4 Risk assement

The risk analysis is done to make some agreements on how to negate the risks before you star the project. The described risks are threats towards the success of the project. For larger projects these will include some typical project related risks. For example when you build a house, the risk of a long frost period in which you cannot build. For smaller student run projects the risks are more related to the participation and group work of the student.

Within this project we have defined the following risks:

1. **Project team misunderstands requirements,** even though we have tried to be as clear as possible within the description, it is possible that misinterpretation and misunderstanding of the project occurs. For example the project group assumes to make a complete pizza production line, where only a sensor is required.
2. **Users have inaccurate expectations,** the level of delivery could differ between project group and client. When miscommunication about the level of detail, or the actual product occurs.
3. **Impacted individuals aren't kept informed**, when the communication between the different parties is lost, participants don't know what the current state is of the project and can't react properly to occuring issues.
4. **Decisions are incomplete**, when a discussion is had about a topic the decision has to be properly justified to continue the project, otherwise the project will get stuck quickly after.
5. **Project team lack structure to complete work,** when the project team is ill organized and all work is subdivided with some of it missing. It can happen that some of the work is not delivered, however the whole project group is held accountable.
6. **Delays to training impact the project**, we try to keep all lessons in sink with the project deliveries. It can happen that some of the required knowledge is missing at the moment you start the delivery and run into some delays.
7. **Failure to follow methodology,** when you are not following the described steps you can run into trouble during the project track. Either you move to quickly and mis some essential content, or you move to slow and cannot deliver everything in time.
8. **Lack of management or control**, without a project organization you will run into some problems along the way. Every project has a management or some for of control to run the project smoothly. It could be as simple as one person keeping all deliveries in control.

Risk	probability	impact	Mitigation
1	Highly unlikely	Extremely harmful	By setting up this project plan with all required details all parties can know exactly what is required. Referring back to the plan frequently will prevent most of this risk.
2	likely	Harmful	Between student and teacher clear discussion about the quality and expectations should be discussed.
3	unlikely	Harmful	The students will report frequently about their progress.
4	likely	Slightly Harmful	When decisions are made, these should be documented (Canvas) and agreed upon by both parties, answering all questions..
5	likely	Slightly Harmful	The team as a whole is responsible for all deliverables. All deliverables can be tracked using the Canvas course.
6	Highly unlikely	Harmful	When one of the courses is delayed, this should be communicated between team and teacher to find an appropriate solution.
7	likely	Harmful	Not following the method described in the project plan will cause misinformation and delays. Frequently referring back to the planning in the project plan will help prevent this.
8	likely	Harmful	The Canvas course is created to aid all parties in the structure of the management. Keeping track here will aid significantly.

If one of these risks occur make sure to contact your teacher and find a way to recover from the problems in a structured manner.

Severity/Consequence

Likelihood		Slightly harmful (1)	Harmful (2)	Extremely harmful (3)
	Highly unlikely (1)	Trivial risk (Score 1)	Tolerable risk (Score 2)	Moderate risk (Score 3)
	Unlikely (2)	Tolerable risk (Score 2)	Moderate risk (Score 4)	Substantial risk (Score 6)
	Likely (3)	Moderate risk (Score 3)	Substantial risk (Score 6)	Intolerable risk (Score 9)

https://management.simplicable.com/management/new/130-project-risks

5 Deliverables

Pizza shop project lasts 12 weeks. The project will focus on 5 courses, where each of them is connected to the project. Based on the planning the group will have to implement the knowledge from the courses directly in the project.

There are the following activities.

Activity name	*The name of the activity*	**Delivery date**	*The expected delivery date*
Input	*What is needed before we can start this activity?*		
#0	**Activities:**		
A description of the activity, try to write this down as a complete assignment which can be understand by someone that is not completely introduced with the project.			
Output	*What are the deliverables when this package is finished.*		

Activity name	Minutes of Meeting (MoM)	**Delivery date**	Weekly
Input	- Previous MoM - Agenda		
#1	**Activities:**		
For every meeting you are going to do it is needed to have a Minutes of Meeting. This will give an overview of discussion points you had during your meetings and helps to retrieve your agreements from previous meetings. The Agenda of a meeting is an overview of topics you will discuss, you can use this to make a clear overview for your MoM. Since you will have a meeting every week, the MoM would be managed every week as well.			
Output	Minutes of Meeting this week		

Activity name	Teams, name and logo	**Delivery date**	Week 2

Input	N/A
#2	**Activities:**

Starting this project you will make groups of 3 students. You can sign yourself up for a group on this Canvas site. This group will work on the project for the next twelve weeks.

The final evaluation of the project will be for all group members, so make sure to exchange contact information with each other and have some ground rules before you continue.

To get you started, every group needs to have its own name and logo. This is your way to show creativity and stand out from the crowd.

To start the final document, one of the things required is a front page. You can upload here a front-page with:

- the team name,
- logo,
- all members names
- roles in your group,
- student number,
- the project title.

Output	- Group of 3 members - Front page for the final report

Activity name	One Pager	**Delivery date**	Week 3
Input	- Project plan		
#3	**Activities:**		

For this assignment, you need to make **one-pager**. This is a simple document where you show your own way of understanding of all kind of problems that the Pizza Shop has. This document shows your ideas to help Mr. Mario.

With your group, you have to make a one-page document with the problems you see in the pizza shop and the solutions to fix these problems.

To find the problems, start by making an overview of the process that is currently within the shop. When you have done this, based on the description you can do an analysis of the bottlenecks in the process. Your solutions should be to solve different bottlenecks you see in the process. (Hint you can use the analysis in the one-pager as well)

Output	- One pager explaining the full project intent

Activity name	Make GUI	**Delivery date**	Week 4
Input	- Project Plan - One pager		
#4	**Activities:**		
Making a nice GUI interface is important for your user. Make sure that you have exactly what your user needs to use and keep it simple, because not every user is comfortable around to many options, or has extended knowledge of your system. You need to provide wireframes (or artist impressions) of the GUIs that you want to make. Ensure to include an explanation of the functionality and the methodology as to how you got to the design. (Note you can use your user experience knowledge here). The submission can be done as a document with the images of the GUI design and the explanation of the functionality.			
Output	- A GUI design you can use for the application		

Activity name	Simple Network	**Delivery date**	Week 6
Input	N/A		
#5	**Activities:**		
You have to connect two PCs together by making a network connection between them. They will share the same network but will have different addresses. You need to be able to show that you can send a signal between the two systems. You have to upload a screenshot of the communication between the two systems. Later you will use this to send actual information between the two systems.			
Output	A communication link between two laptops		

Activity name	Light bridge	**Delivery date**	Week 6
Input	N/A		
#6	**Activities:**		
To detect the finished pizzas we have introduced a light bridge solution. With the classes of embedded systems, you will be able to make this. For building a light bridge with Arduino you will have to make use of an *Ultrasonic sensor,* LED diode, and a counter. The pizza, that is finished will move down the production line. The sensor will be situated in such a way that it will detect the pizza when it passes over. When this happens, a LED will light up and the counter will be updated. the updated counter will be sent to the second system in another task, for now, it is important to remember that this information will be used again. You will show the working principle to your teacher.			
Output	A working light bridge to detect Pizzas		

Activity name	Go / NoGo	**Delivery date**	Week 6
Input	- Light Bridge - Simple Network - Make GUI - One Pager - Front page		
#7	**Activities:**		
All items of previous weeks have been marked as completed to be reviewed in week 6. A Go/NoGo meeting is used to see if you are still on track with all deliverables. As you could see in the earlier deliverables you have been making small sub-parts of the final deliverable. These will be used in the next weeks to build the complete project deliverable. If you are now behind on schedule we don't expect you to finish in time and you will be missing the project in your portfolio.			
Output	A Go to continue the project.		

Activity name	Push Message	**Delivery date**	Week 8
Input	- Go / NoGo - Simple Network		
#8	**Activities:**		
A "push" message has to be constructed for the Arduino, that will be sent out to one of the PCs. This is possible, by making the *baud rate* for both the same and then sending the message as you would send it to a *Serial monitor*. The PC on its part will then listen for this message and work with it further. since you made the sketch for the light bridge you need to make this signal available in the first laptop. When you are able to have the signal in your laptop you can use your earlier connection to a second laptop to "receive" this signal. In the next step, you will have an application reading this signal. Show your tutor that this works for your group.			
Output	You can send a logical message between two laptops.		

Activity name	C# application	**Delivery date**	Week 10
Input	- Go / NoGo - Make GUI - Light Bridge - Push Message		
#9	**Activities:**		
Your C# application needs to have everything Mr. Mario needs in his family Pizza Shop. Make sure that your code is simple and organized. You have to use all the knowledge gained during your courses, nothing more. It is important to be able to explain your code if it is necessary. Making the actual code is the last step, you have a GUI design, your hardware is available, the network is ready and you know what bottleneck your program is going to solve. Combining this into an application will complete the project. The application needs to create a list of ordered pizzas. When the light bridge is triggered the oldest item on the list is deemed ready, your application needs to be able to show this. Make sure that someone without knowledge of the project understands your application.			
Output	The complete application		

Activity name	Peer Review	**Delivery date**	Week 10
Input	- C# application		
#10	**Activities:**		
Before a final presentation, we will do a peer review. You will show your product to the whole group and ask for feedback. This way you are asking your peers what they think of your product and whether there are improvements or bugs that you have overlooked. As it is always better to have a friend tell you what is wrong than a client. Each group needs to present to the class their solution. Another group will be assigned to give honest feedback giving advice on their work. Be honest and fair, there is no need to insult other groups. The feedback will be uploaded here as well, make sure to clearly mention your group name and the group you have evaluated. The feedback will also be shared with the group you have evaluated. Based on the feedback you get you to have another week to improve your product before giving the final presentation.			
Output	- Peer review for you group - Peer review for the group you reviewed		

Activity name	Modifications	**Delivery date**	Week 12
Input	- Peer Review		
#11	**Activities:**		
When out of the Peer Review you find that there are some improvements required you can now make the adjustments. (this includes things not finished or not working 100%)			
Output	- The final application for the Pizza shop		

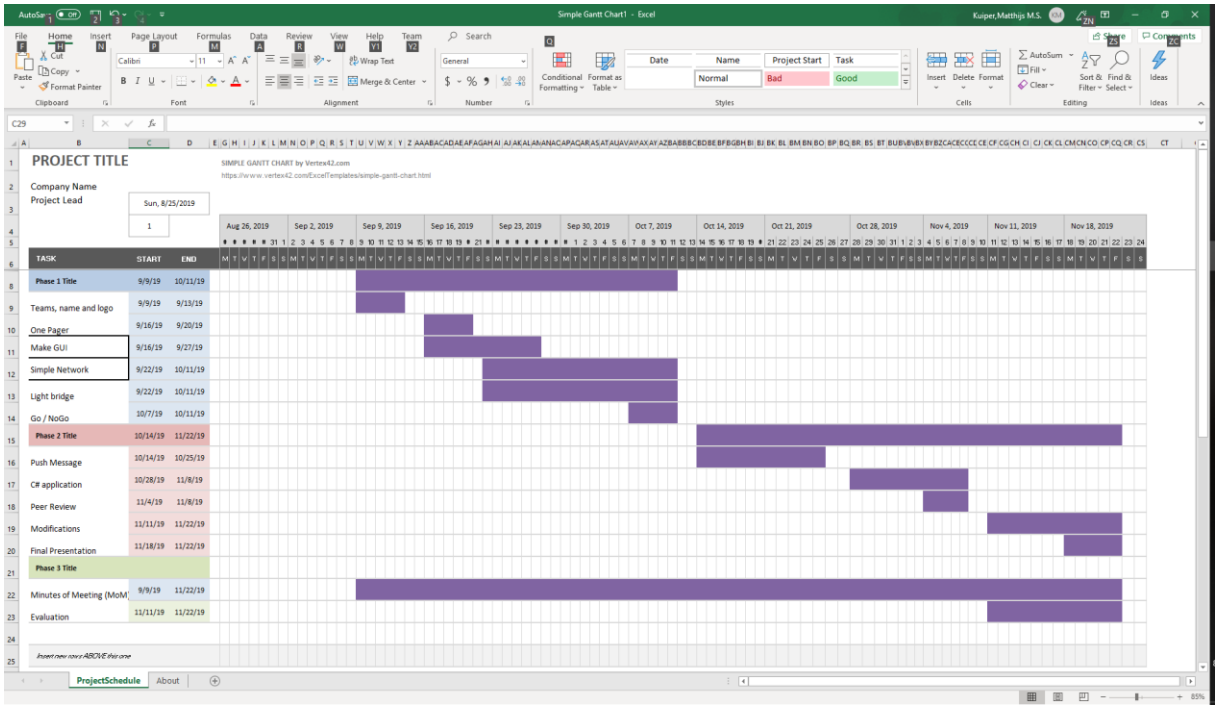
Activity name	Evaluation	**Delivery date**	Week 12
Input	All Activities.		
#12	**Activities:**		
To complete your project you will write a short evaluation of your project. As with every project, it is important that the information is being stored and you write down what the project has accomplished. This is the way to communicate about a project to the management, or in this project your tutor, regarding the successes. You can include: your front page A project description, describing what the situation is and what will be solved How you have solved and worked during this project. Include problems or situations where you got stuck as well. Description of the final results Evaluation over the deliverables and how this will help the Pizza shop. Evaluate the group work and make a list of lessons learned for the next projects.			
Output	- Evaluation report.		

Activity name	Final Presentation	**Delivery date**	Week 12
Input	All Activities.		
#12	**Activities:**		
When everything is done you present the final product to all stakeholders. This is the moment where everything comes together.			
Output	- Evaluation report.		

6 Planning

To make a clear planning for all stakeholders we use a Gantt chart. In this case a Excel macro was used and pasted into the word file. When working a larger project you can also add this as a appendix or addendum which you hand in separately. Make sure that you can always read what has been added to the document.

The full Gantt Chart has been added as a separate Excel file for readability.



As you can see within the Excel file this is a template used form the excel database. Making usee of templates can sometimes make your work a bit easier.

Gantt chart

From Wikipedia, the free encyclopedia

"Gantt" redirects here. For other uses, see Gantt (disambiguation).

A **Gantt chart** is a type of bar chart that illustrates a project schedule, named after its inventor, Henry Gantt (1861–1919), who designed such a chart around the years 1910–1915.[1][2] Modern Gantt charts also show the dependency relationships between activities and current schedule status.

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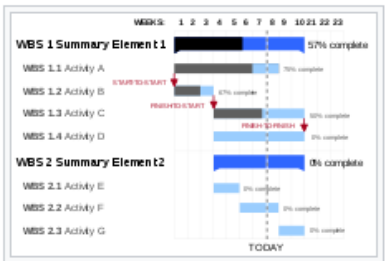
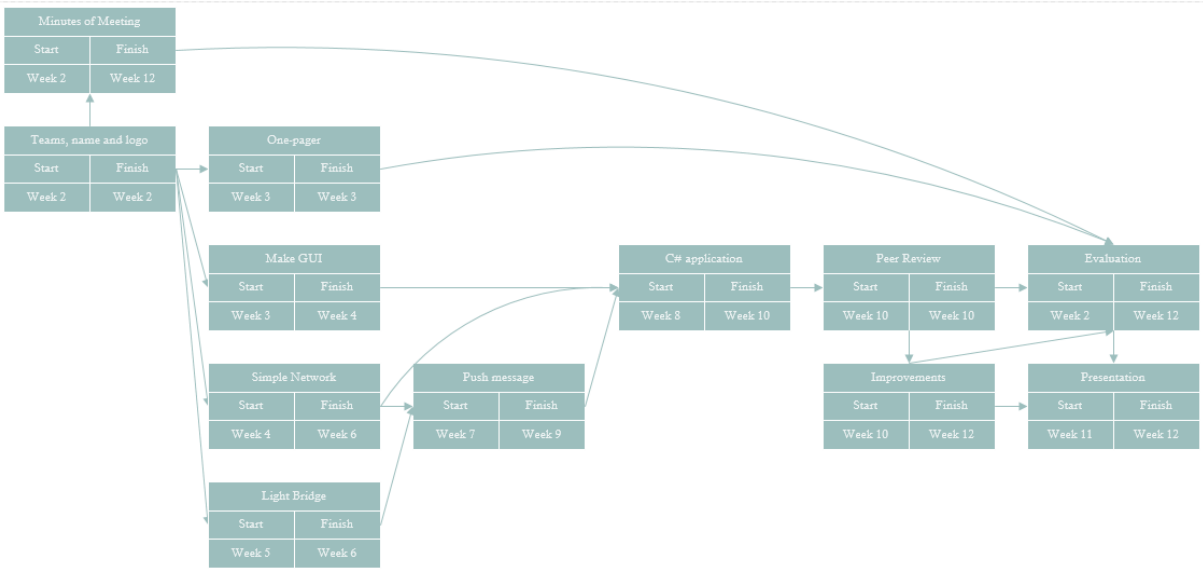


A Gantt chart showing three kinds of schedule dependencies (in red) and percent complete indications.

7 PERT

The full version of the visual drawing is attached in Canvas.



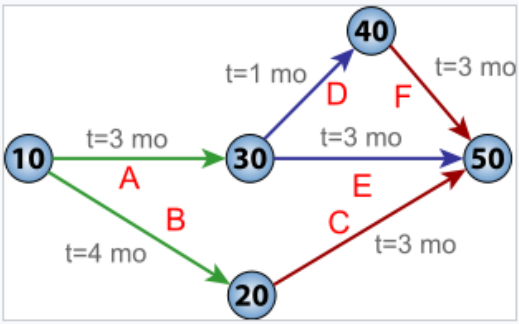
Program evaluation and review technique

From Wikipedia, the free encyclopedia

"PERT" redirects here. For other uses, see PERT (disambiguation).

The **program** (or **project**) **evaluation and review technique** (**PERT**) is a statistical tool used in project management, which was designed to analyze and represent the tasks involved in completing a given project.

First developed by the United States Navy in the 1958, it is commonly used in conjunction with the critical path method in the year 1957 (CPM).



PERT network chart for a seven-month project with five milestones (10 through 50) and six activities (A through F).

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