

Chart Generator Tool

Group - 6, CS-B
Software Engineering

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Outline

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Introduction

- Humans are visual creatures
- Much easier to infer meaning from pictures than text
- Charts are an excellent way to condense large amounts of information into easy-to-understand formats
- Charts can be read quickly
- Charts are used during project management
- They help in letting members know what to do



Problem statement

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Create a tool that will generate charts for project management and help teams create visualisations quickly and hassle-free.

There are very few softwares in the market that generate charts for project management.

Most of them require making extensive spreadsheets and don't have an easy learning curve.

We aim to develop a tool that has easy and simple input options for generating charts.



Subproblems

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Find an easy to use design

Users must be given an easy and intuitive UI so that the learning curve to generate the charts in as small as possible.

Gantt chart implementation

A type of bar chart that is used for tracking progress and demonstrates project scheduling.

PERT chart implementation

Used to show the dependencies of each subproblem and how these subproblems should be scheduled according to priorities. Helps find the 'critical path' to the tasks at hand.

Work Breakdown chart implementation

Illustrates the entire project broken down into components and then further divided into even smaller subcomponents. Helps arrange project's team work into manageable pieces and helps to estimate the time and cost requirements.



Software Requirements

1. Operating System

- 1.1 Windows - Windows 7, 8.1 and 10
- 1.2 Mac - MacOS 10.12+
- 1.3 Linux - Ubuntu LTS releases 14.04 or later

2. Browser

- 2.1 Chrome v61+
- 2.2 Firefox v60+
- 2.3 Internet Explorer v11+

NOTE: Must have Java (Version 8 Update 201) or later installed



Hardware Requirements

1. Processor:

Intel® Core i5 4th generation (or an equivalent AMD processor) or greater. Intel® Celeron, Pentium, Atom or Core i3 processor not recommended.

2. RAM:

4 GB is sufficient for proper functionality of the software. This amount of RAM will allow the user to run the software without any lag. It would be beneficial for the user to have RAM greater than that specified in the requirements for better overall experience and enhanced multitasking.



Hardware Requirements

3. Graphics Card:

NVIDIA GeForce GTX 650 (or equivalent AMD Radeon HD 5770) or better recommended Use of an integrated Intel HD Graphics GPU embedded within at least 5th generation Core i7 or Core i5 may be enough. In this case, True Color (32 bit) mode required.

4. Storage:

SSD (Solid State Drive) at least 120GB. The storage space of the computer should also be sufficient enough for proper functionality of the application along with the other already installed softwares.



Software Development Life Cycle (SDLC)

*Using the **Prototype Model***

The life cycle defines a methodology for improving the quality of software and the overall development process.

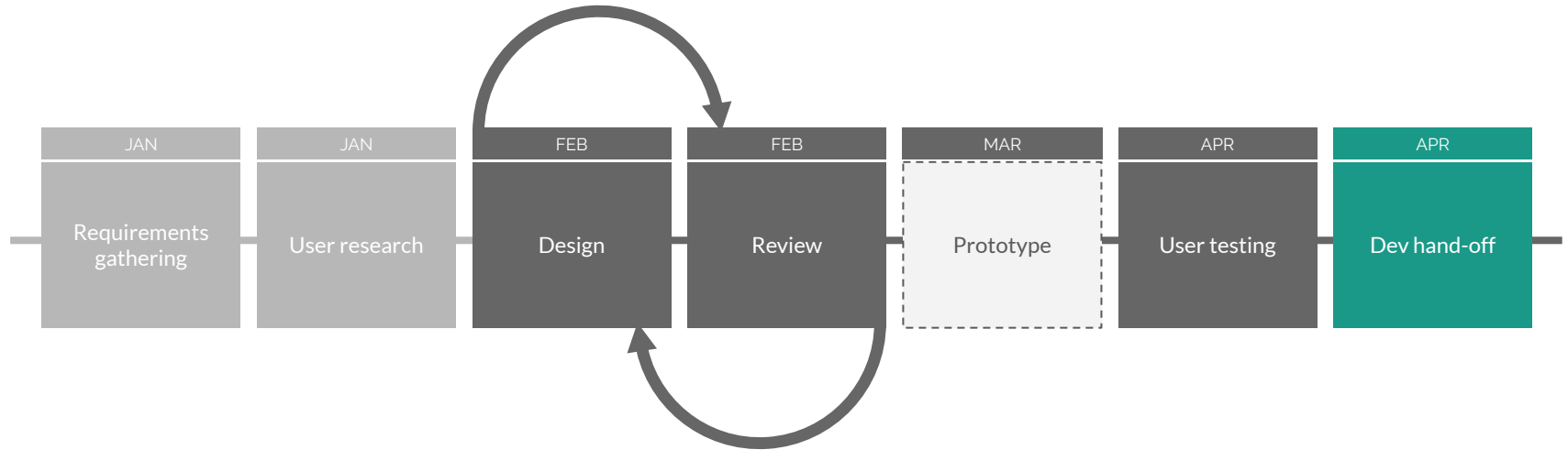
Why prototype? Because...

- Initially we don't know the all requirements.
- Requirements will be changed quite often here.
- We have less experience on similar project.
- Limited user participation here.
- Due to tight project scheduling.

After evaluating the prototype, need to refine the requirements and prepare the final specification document.



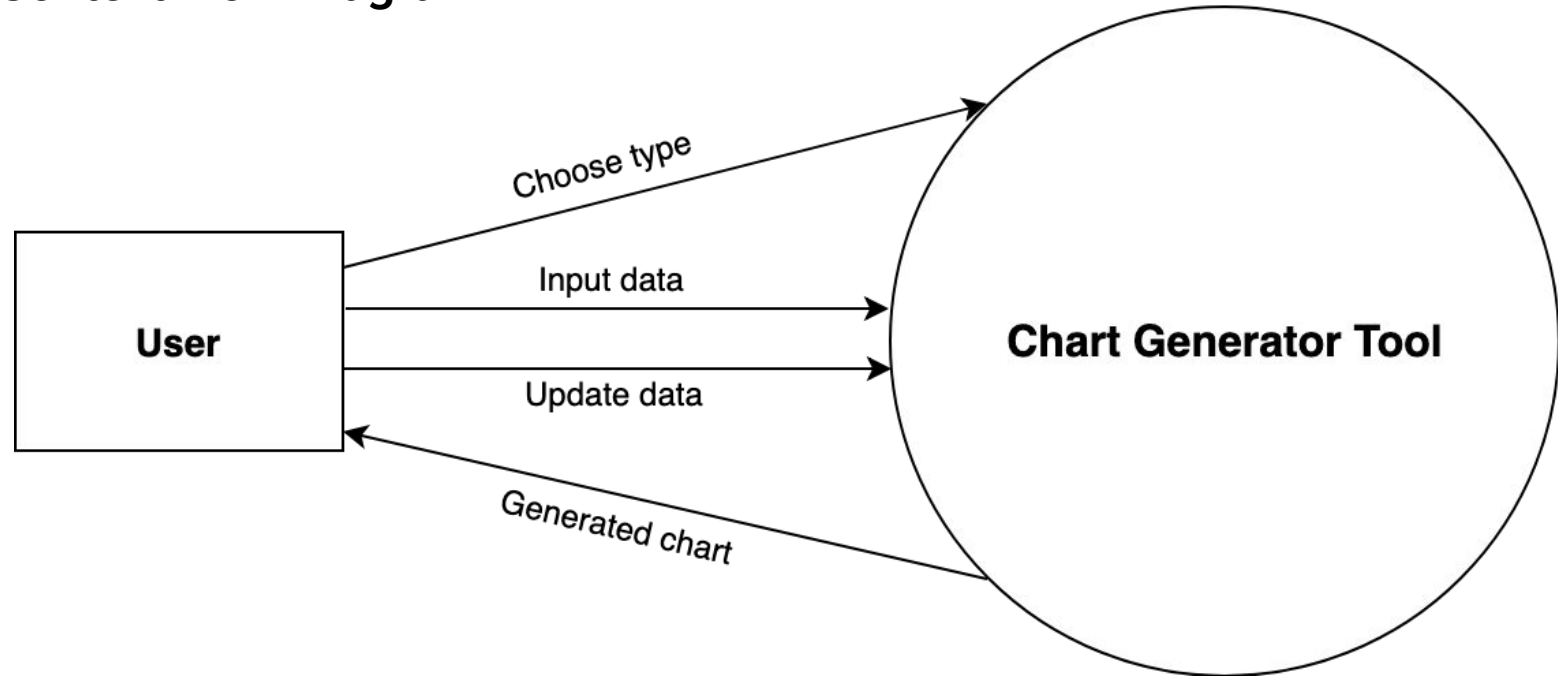
Timeline



Design

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Context Flow Diagram



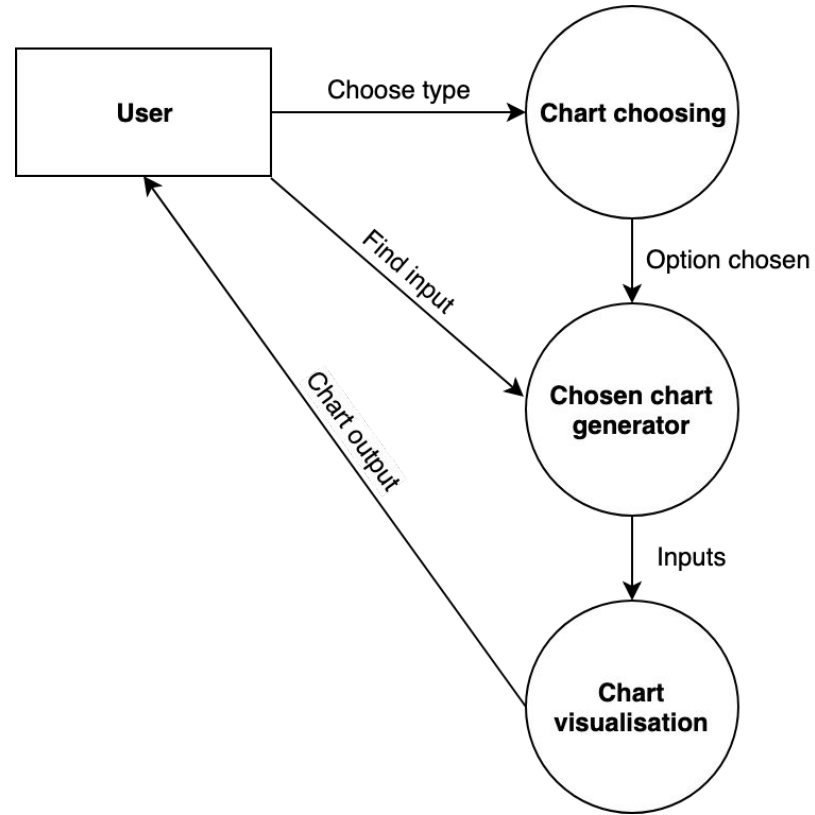


Chart Choosing Process

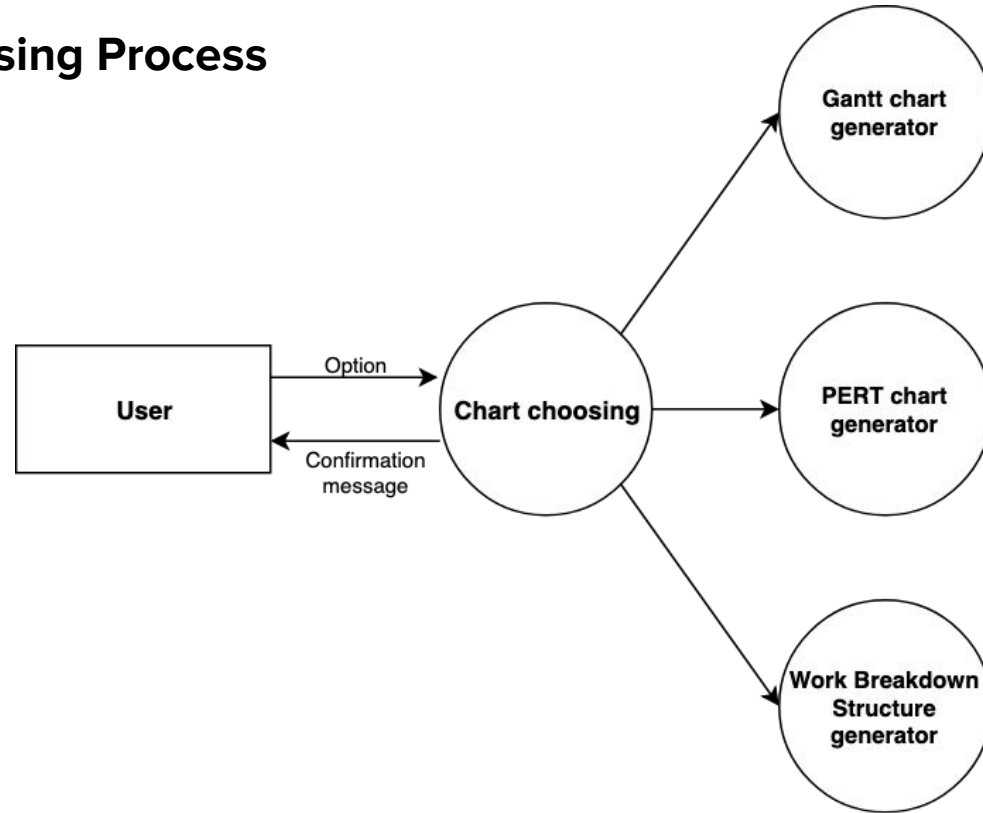
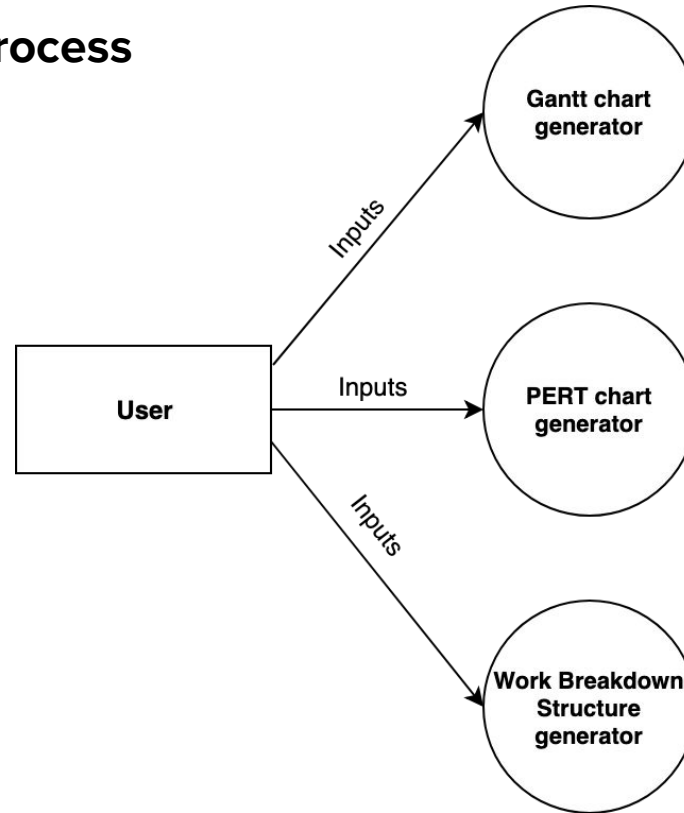


Chart Generator Process



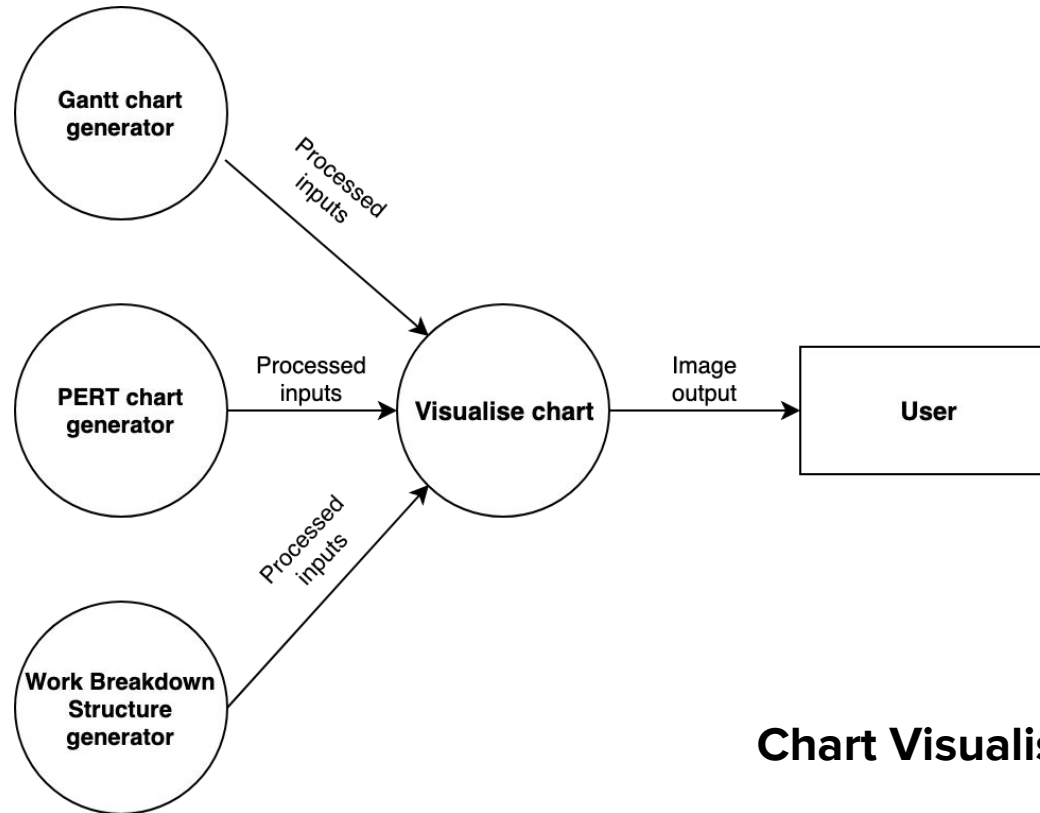


Chart Visualisation Process

Status of the project

Working except for one module

The GUI is ready along with the module for Gantt Chart and PERT Chart
No proper resources found for creating Work Breakdown Structure





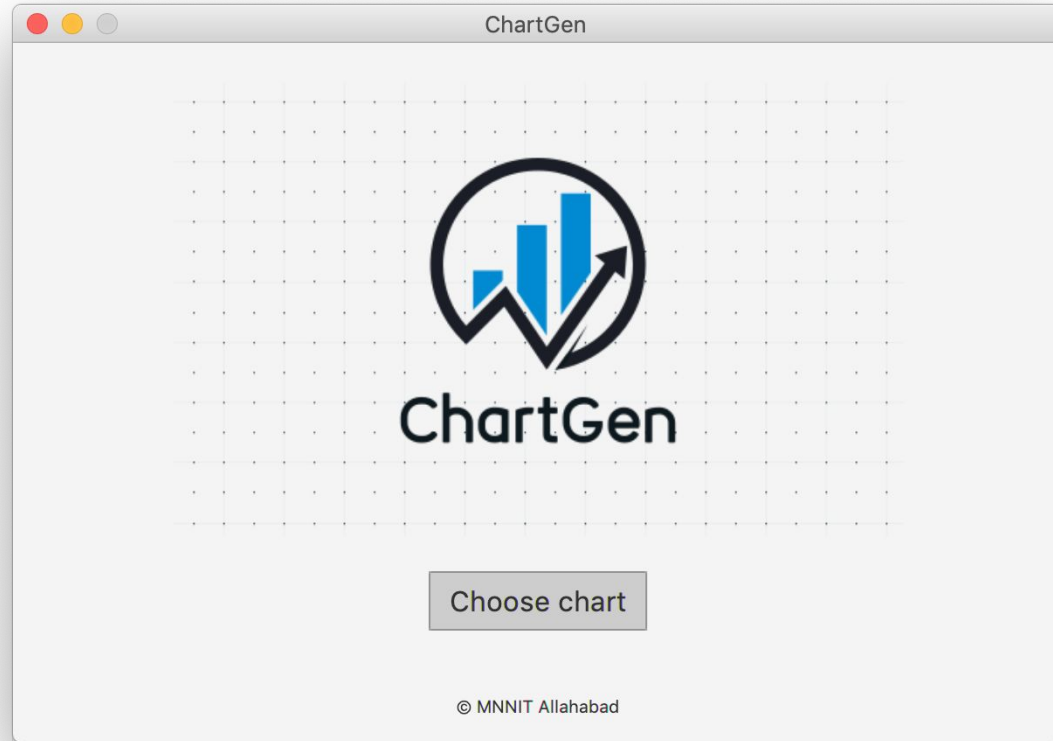
Coding platform

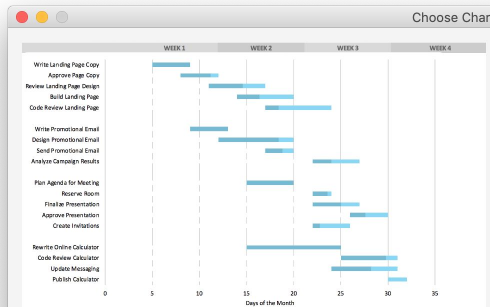
NetBeans IDE is a free and open source integrated development environment for application development on Windows, Mac, Linux, and Solaris operating systems. The IDE simplifies the development of web, enterprise, desktop, and mobile applications that use the Java and HTML5 platforms.

IntelliJ IDEA is a Java integrated development environment (IDE) for developing computer software. It is developed by JetBrains (formerly known as IntelliJ), and is available as an Apache 2 Licensed community edition, and in a proprietary commercial edition. Both can be used for commercial development.

Outputs

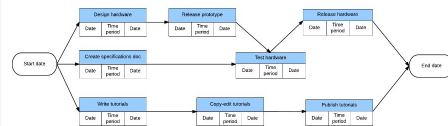
Raman Sehgal, 20164130





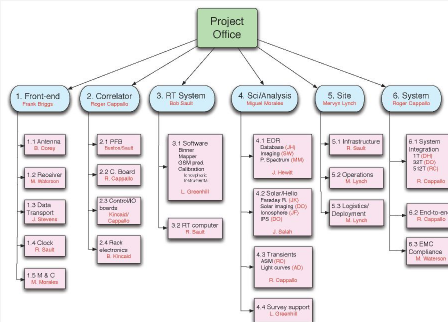
Gantt Chart

A Gantt chart is a type of bar chart that illustrates a project schedule. Modern Gantt charts also show the dependency relationships between activities and current schedule status.



PERT Chart

A PERT chart is a project management tool used to schedule, organize, and coordinate tasks within a project. PERT stands for Program Evaluation Review Technique.



Work Breakdown Structure

A work-breakdown structure in project management and systems engineering, is a deliverable-oriented breakdown of a project into smaller components. A work breakdown structure is a key project deliverable that organizes the team's work into manageable sections.

Gantt Chart

Gantt Chart Inputs

Number of items on Y axis

Label of X axis Label of Y axis

Insert the names of items on Y axis
Space separated names

Insert the names of scenarios
Space separated names

Insert the start times of first task Insert the end times of first task
Space separated times Space separated times

Insert the start times of second task Insert the end times of second task
Space separated times Space separated times

Gantt Chart input screen

PERT Chart

Activity Information

Activity ID	Optimistic	Most Likely	Pessimistic	Predecessors	Resources
<input type="text"/>					

Project Information Time Unit

Total Resources:

PERT Chart input screen

Gantt Chart

Gantt Chart Inputs

Number of items on Y axis

5

Label of X axis

Timeline

Label of Y axis

Software Development F

Insert the names of items on Y axis

Requirement Design Coding Testing Deployment

Insert the names of scenarios

EstimatedDate ActualDate

Insert the start times of first task

3 10 17 24 28

Insert the end times of first task

7 14 21 27 31

Insert the start times of second task

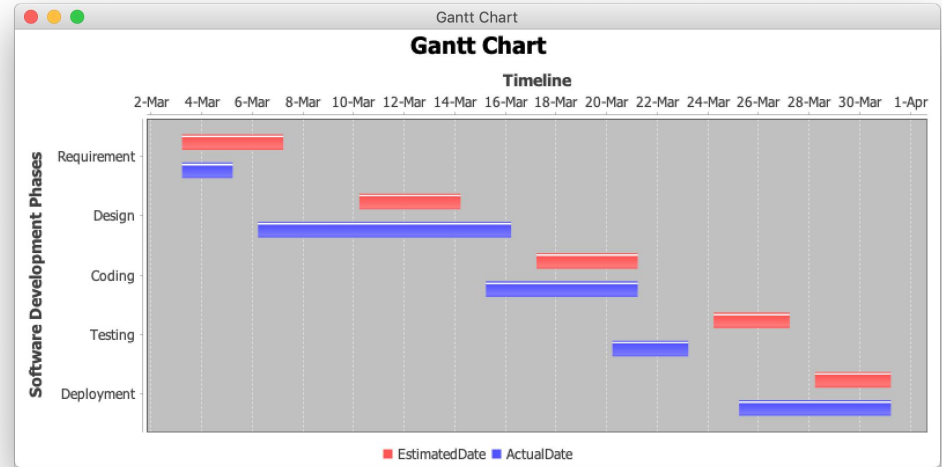
3 6 15 20 25

Insert the end times of second task

5 16 21 23 31

Confirm inputs

Testing input screen



Testing output screen

PERT Chart

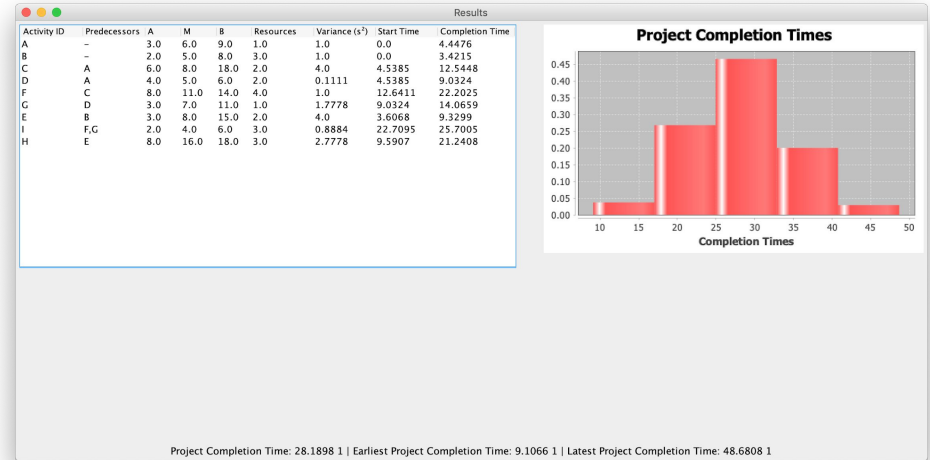
Activity Information

Activity ID	Optimistic	Most Likely	Pessimistic	Predecessors	Resources
A	3	6	9	-	1
B	2	5	8	-	3
C	6	8	18	A	2
D	4	5	6	A	2
F	8	11	14	C	4
G	3	7	11	D	1
E	3	8	15	B	2
I	2	4	6	F,G	3
H	8	16	18	E	3

Project Information Time Unit

Total Resources:

Testing input screen



Testing output screen

Conclusion

- PERT and CPM give an opportunity to eliminate an extra cost on unnecessary activity which doesn't affect the total time of project.
- Gantt chart helps to determine how long a project should take, figure out the resource needed and plan the order in which you'll complete the task.
- PERT charts are generally used before a project begins to plan and determine the duration of each tasks.
- Gantt charts, on the other hand, are used while a project is happening to break and highlight scheduling constraints.



Why use?

- The most important aspect of using Gantt is that it allows you to create project plans and schedule projects in a visual way.
- Improved collaboration and communication are another key benefits of using a Gantt chart for project management. It's no secret that a successful completion of a project is the combined effort of every member of the team.
- A Gantt chart helps to identify sequential and parallel relationships between various tasks and activities involved in a project.
- You can see how each task within a project is progressing and use this information to predict the future of the project

References



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