

Computer Engineering Department

Fourth Stage

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Lecture: Project Planning, Scheduling, and Control

- **Project Planning** :Planning is the process of defining goals and setting strategies to achieve them, along with determining the necessary resources, tasks, and timeline required for execution.

Importance of Planning

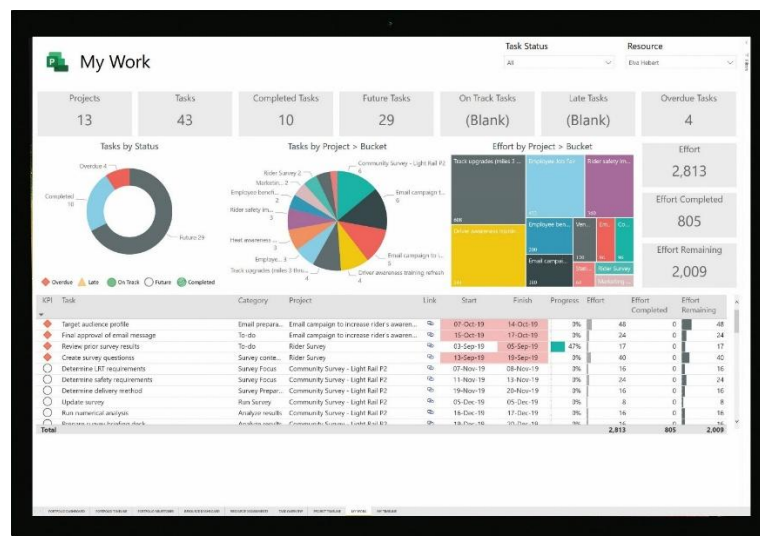
- **Clarity of objectives and vision.**
- **Better resource utilization.**
- **Reduced potential risks.**
- **Facilitated communication among team members.**

➤ Planning Support Tools

1. Microsoft Project

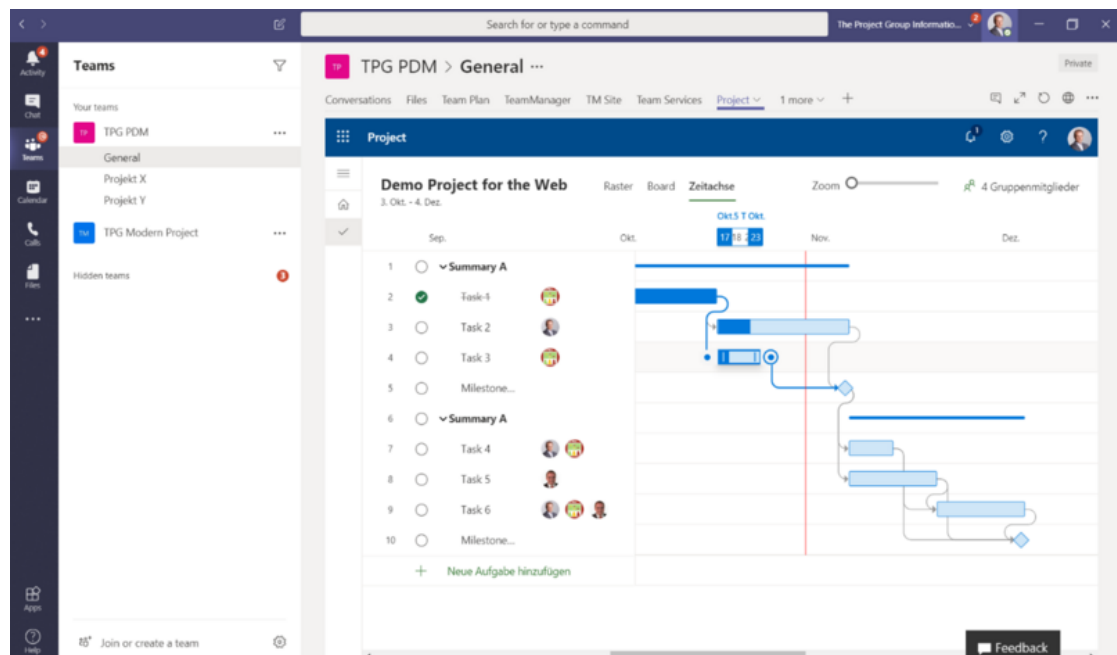
a. Tool Definition

- **Microsoft Project**: A project management software launched by Microsoft in 1984. It is used for scheduling, resource management, and monitoring project progress. It began as an assistant for project managers on MS-DOS systems and evolved into one of the most popular project management tools.



b. Advantages

- **Familiar interface:** Resembles Microsoft Office layout.
- **Integrated resource management.**
- **Collaboration support** through integration with Microsoft Teams.
- **Data analysis:** Provides detailed project performance reports.



c. Disadvantages

- **High cost.**
- **Complexity for beginners.**
- **Lack of flexibility** in integration with some other tools.

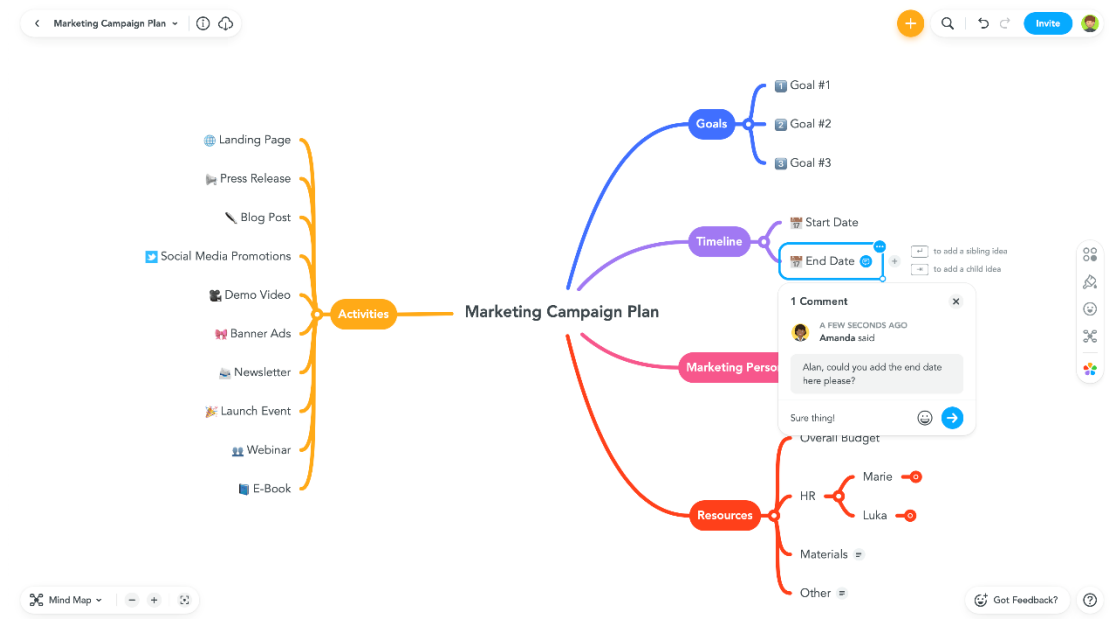
d. Practical Examples

- **Mobile Application Development Project:** It can be used to define tasks such as UI design, coding, and testing.
- **Computer Network Deployment Project:** For planning tasks like device setup, network configuration, and security testing.

2. MindMeister

a. Tool Definition

- **MindMeister:** A tool for creating mind maps and visualizing ideas. It was launched in 2007. It started as a brainstorming tool and has now evolved into a collaborative platform.



b. Advantages

- **Easy to use.**
- **Real-time collaboration.**
- **Integration with Google Drive and Slack.**

c. Disadvantages

- **Limited features in the free version.**
- **Lacks advanced project management functionalities.**

d. Practical Examples

- **Smart Home System Design Project:** To organize ideas and map out workflows for different functionalities.
- **Big Data Analysis Project:** To arrange ideas and stages like data collection, analysis, and results extraction.

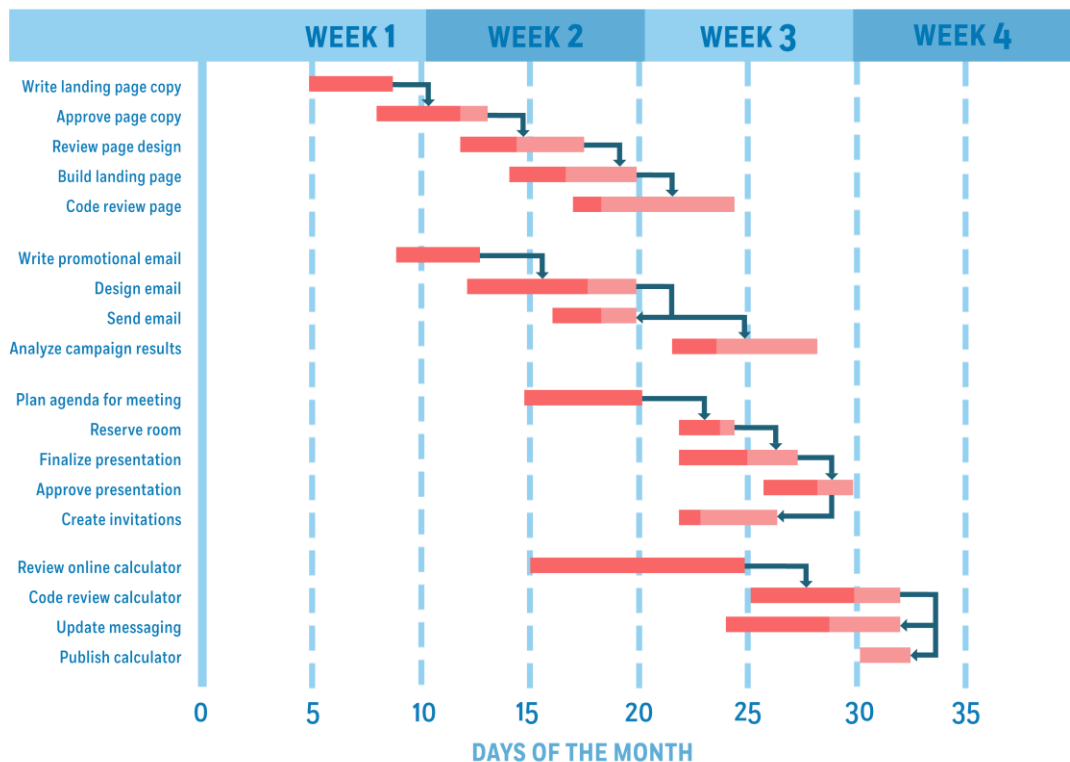
➤ **Project Scheduling:** Project scheduling is the process of organizing tasks, activities, and milestones within a project timeline. It involves determining the start and end dates for each task, establishing dependencies between tasks, and allocating resources to ensure the project is completed on time.

➤ Scheduling Support Tools

1. Gantt Chart

a. Tool Definition

- **Gantt Chart:** A visual tool that displays the sequence of activities and their timelines. It was invented by Henry Gantt.



b. Advantages

- **Clear view of the project timeline.**
- **Shows dependencies between tasks.**

c. Disadvantages

- **Difficult to modify in large projects.**

d. Practical Examples

- **Dynamic Website Development Project:** To schedule phases like design, coding, testing, and deployment.
- **Control Support:** Control Support refers to the tools, techniques, and systems used to monitor, track, and manage the progress and performance of a project. It ensures that the project stays on schedule, within budget, and meets quality standards. Control support also involves

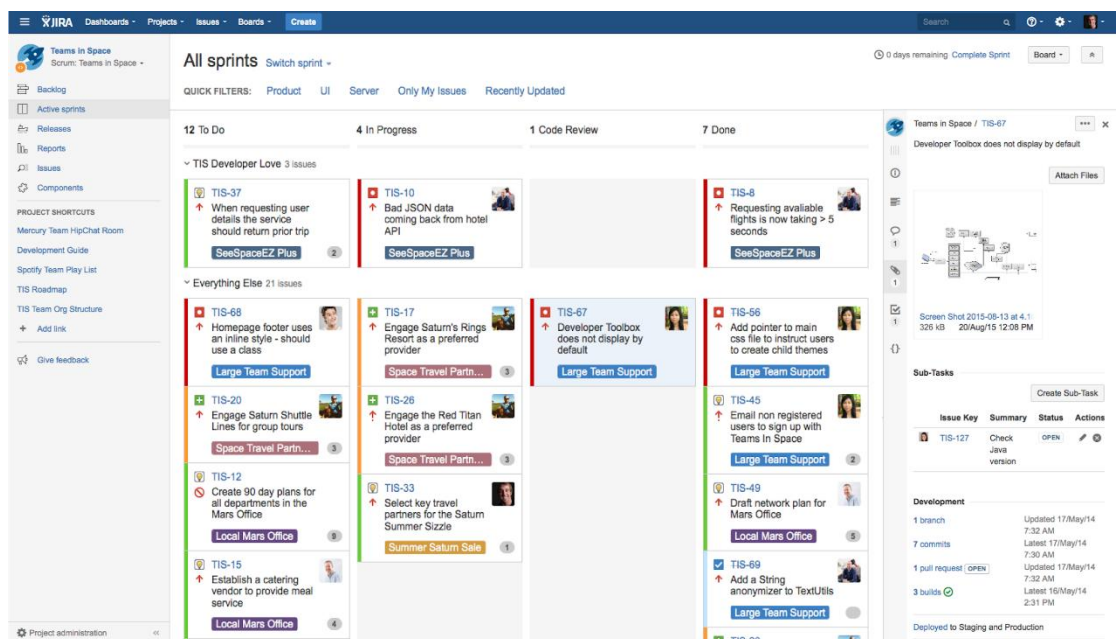
identifying and addressing any issues or risks that could impact the project's success.

➤ Control Support Tools

1. JIRA

a. Tool Definition

- **JIRA:** A project management and bug tracking tool launched by Atlassian in 2002. It started as a bug tracking tool and has become one of the most popular project management tools in software development.



b. Advantages

- **Effective task and project management.**
- **Fast bug tracking and resolution.**
- **Integration with development tools like GitHub and Bitbucket.**

c. Disadvantages

- **Complexity for beginners.**
- **High cost for large enterprises.**

d. Practical Examples

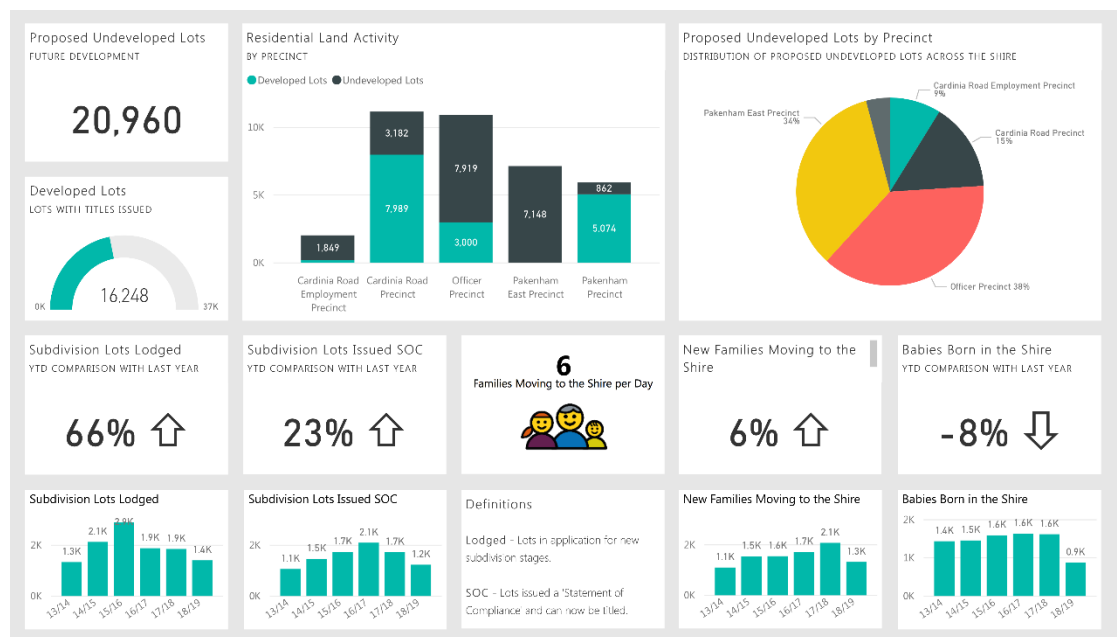
- **Enterprise Resource Planning (ERP) System Development Project:** To track bugs and assign tasks to the development team.

- **Video Game Development Project:** To monitor software bugs and improve performance.

2. Power BI

a. Tool Definition

- **Power BI:** A data analytics and reporting tool developed by Microsoft. It was launched in 2015.



b. Advantages

- **Visual data analysis.**
- **Real-time data updates.**
- **Integration with multiple data sources.**

c. Disadvantages

- **Complexity in creating advanced reports.**
- **Additional costs for professional features.**

d. Practical Examples

- **Mobile Application Performance Analysis Project:** To monitor user numbers, app performance, and errors.
- **Computer Network Monitoring Project:** To analyze security data and network performance.

Planning, scheduling, and control tools are essential for project success, especially in Computer Engineering. By choosing the right tools and using them effectively, project goals can be achieved efficiently, and overall project performance can be enhanced.

References

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