

Teamwork

CS 346: Application
Development

Team Assembly

How to form teams successfully.

Why teamwork?

In this section, we'll discuss the importance of teamwork and how to build a successful team. Why are we learning this?

- You will work in teams in this course, and likely in your future career.
- You will experience conflict at some point.
- You will have time management issues.
- You will have team motivation challenges.

We want you to be prepared for these challenges and have tools to overcome them!

This module is based on the larger [Teamwork Skills Project](#) in the Faculty of Math. That site contains extensive notes, slides and sample charts that you can use.

Attributes of a successful team

Attribute	What does it mean?
Shared mission and goals	The team understands and agrees with the goals of the project.
Leadership	The team has a leader who can guide the team to success. Leadership tasks are performed reliably and consistently.
Communication	The team communicates effectively and efficiently.
Team culture	The culture that you collectively build provides structure and support.
Decision making	The team has an agreed-upon decision-making process.
Conflict management	The team has a process for resolving conflicts and addresses conflict productively; it avoids personal conflict.
Team meetings	Meetings are held regularly to facilitate communication and group decision making.
Self-management	Individual team members complete tasks and assignments effectively.

Team roles - required

You will be in teams of 4 for this course.

It is useful to assign team roles. **Required** roles include:

Team Lead

- Responsible for keeping the team on track and ensuring milestones are met.
- Ensures that the requirements are accurate & the team is tracking work properly.
- Help the team coordinate to meet its goals for each deliverable.
- Define the agenda for team meetings, and ensure the team is following the contract.

Technical Lead

- The person responsible for ensuring the technical aspects of the project are correct.
- Ensure that the team follows best practices, code is complete, reviewed and merged.
- May be the code reviewer for other team members, assists with merges to main.
- May be responsible for packaging the software release.

Team roles - optional

Teams often split design responsibility between front-end (user interface) and back-end (data/services), resulting in these **optional** roles:

Front-End Designer

- Responsible for the UI/UX design, including prototypes.
- Leads the team in design decisions around UI implementation.
- Not the only person to code the UI! That work should be shared.

Back-End Designer

- Responsible for data representation, data models.
- Leads the team in database and service integration.
- Not the only person to code the backend! That work should be shared.

Team roles - rules

Everyone still contributes to the entire project.

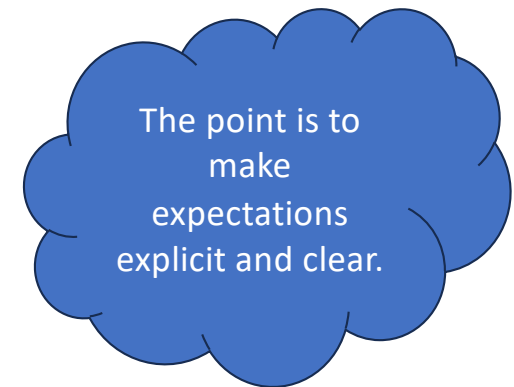
- Team leads still write code. Managing the project is not a full-time job.
- Technical leads can still take meeting minutes and write code. They are not just code reviewers. Most of their time should be spent on code.
- Design leads can still help with other parts of the project outside of their immediate area of responsibility.

No single person is "the boss" of the project

- Significant decisions should be made with the input of the **entire team**.
- Team and technical lead roles help with project coordination.
- Design lead roles help with early design around code parts of the project.

Team contract

- A team contract is a document that outlines the expectations and responsibilities of each team member. It is a tool that helps the team establish a shared understanding of the project and the roles of each team member.
- The exact content is decided by the team, but the contract typically addresses:
 - Team leadership and communication
 - Team meeting expectations
 - Team & individual expectations
 - Managing team challenges and conflict
 - Other considerations



Team contract

- It may include contract clauses such as:
 - "All members will attend meetings or notify the team by email or phone in advance of anticipated absences."
 - "All members will be fully engaged in team meetings and will not work on other assignments during the meeting."
 - "All members will come to meetings prepared by reading the assigned material and/or watching assigned lecture videos ahead of time."

See the [Public Gitlab Repo > Templates](#) for a sample team contract.

Project Planning

- A **project plan** is a document that outlines the tasks, resources, and timeline for a project. It helps the team stay on track and meet deadlines. This can help with time management issues.
- > As an Agile team, you are not expected to plan everything up-front. Instead, you will plan in short iterations, called sprints. This allows you to adjust your plan as you learn more about the project and the team's capabilities.
- However, it is still useful to have a high-level plan that outlines the project's goals, timeline, and resources. This plan can be used to guide the team's work and ensure that everyone is on the same page.

Gantt Chart

A Gantt chart is a list of what tasks the team will complete, in what order, along with a bar chart indicating when each task will be complete. It looks something like this:

Gantt charts are great when you know the order of tasks, and how long each will take, but as we've discussed, we rarely know those details with great accuracy.

In early project stages, they are a great way to identify milestone dates, and high-level goals.

See [Toolchain > Markdown](#) to draw one.

Gantt Chart

Task Name	Q1 2019			Q2 2019		Q3 2019
	Jan 19	Feb 19	Mar 19	Apr 19	Jun 19	Jul 19
Planning						
Research						
Design						
Implementation						
Follow up						

Communication

How to communicate effectively within your team.



How the Customer explained it



What the Project Manager understood



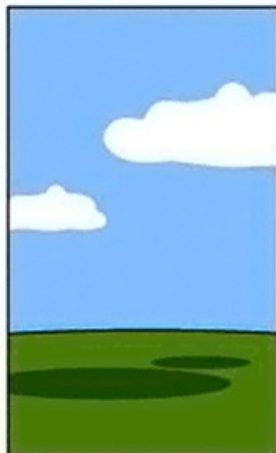
How the Analyst designed it



What the Programmer wrote



What the Business Consultant presented



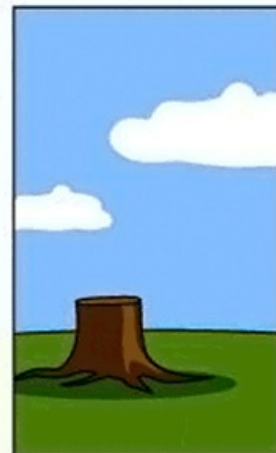
How the Project was documented



What Operations installed



How the Customer was billed

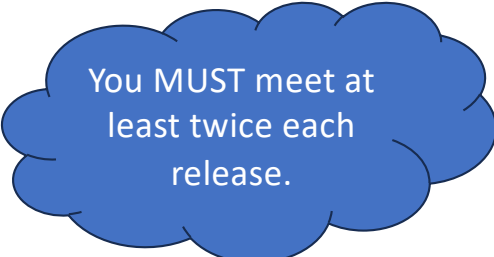


How the Solution was supported



What the Customer really needed

Team meetings



You MUST meet at least twice each release.

- Team meetings provide an opportunity for team members to discuss progress, share ideas, and make decisions. They are most effective when you have a clear goal for the meeting.
- For each meeting:
 - A team lead should circulate the agenda ahead of time.
 - Everyone should come to the meeting prepared to discuss what's on the agenda. This may include reading course notes or researching a new feature.
 - The project lead should keep the team organized around the agenda and ensure that the meeting stays on track.
 - Someone should be designated to take notes during the meeting.
 - Agenda and notes should be stored in the Wiki as part of your project.

Informal communication

- It's often necessary to communicate outside of meetings!
- Identify other channels:
 - Messaging applications e.g., Slack, Discord, Microsoft Teams.
 - Shared online spaces e.g., Google Docs, MS Teams channels.
 - Email. e.g., your UW email account.
- These tools can be used to share information, ask questions, and discuss ideas. They can also be used to share files and other resources.
- Use both planned team meetings and informal communication to keep the project moving.
- **The team should agree on one channel to use. Put it in your contact.**

Conflict Management

What to do when conflict arises in a team.

Team conflict

- Conflict is a natural part of work on a team. It can arise from personality differences, differences in opinion, or differences in work style.
- Conflict can be beneficial to a team, as it can lead to better decision-making and more creative solutions. However, if not managed properly, it can also lead to stress and demotivation.
- *When conflict arises, your goal should be to address it immediately so reduce the negative impact on the project. Letting things “simmer” never improves the situation.*

Sources of conflict

There are seven main sources of potential conflict on a team:

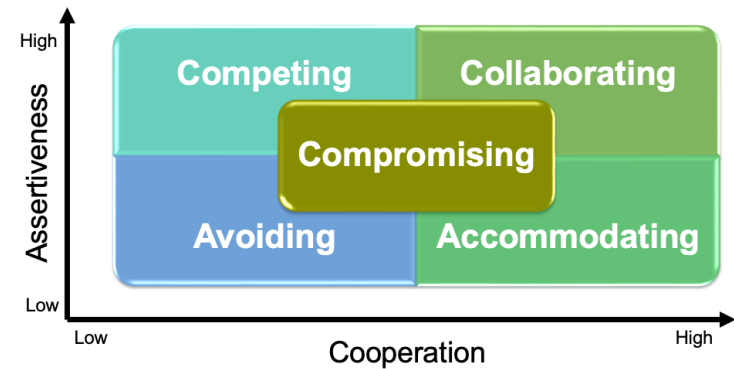
1. **Work Scope:** Differences of opinion on how work should be done, how much, level of quality.
2. **Resource Assignments:** Who is assigned certain tasks, what they are assigned.
3. **Schedule:** The sequence in which the work should be completed, or how long it should take.
4. **Cost:** How much the work should cost (n/a in this course).
5. **Priorities:** People being assigned multiple conflicting tasks, or when various people need to use a limited resource at the same time.
6. **Organizational:** Disagreement over the need for certain procedures, or ambiguous communication, or failure to make timely decisions.
7. **Stakeholder:** Issues with certain stakeholders e.g., disagreement with the instructor.
8. **Personal:** Differences in individual values/attitudes on the team. ←NEVER beneficial

Handling Conflict (2/2)

Strategies can be seen as competing (valuing individual interests), or accommodating (valuing team interests, including team harmony).

We recommend team-friendly strategies: **accommodating, compromising or collaborating.**

When possible, you should attempt to negotiate outcomes in a way that addresses everyone's concerns.



Of course, this presumes that everyone is acting in good-faith and being respectful. Disrespectful behaviors are not negotiable - and you should speak with the instructor if that is an issue.