

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 requirements are accurate & the team is tracking work properly.
- Help the team coordinate to meet its goals for each deliverable.

Technical Lead

- Responsible for ensuring the technical aspects of the project are correct.
- Ensures that code is complete, reviewed and properly merged by the team.
- May be a code reviewer or assist others in merging branches.
- 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 **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

Everyone must contribute to the entire project.

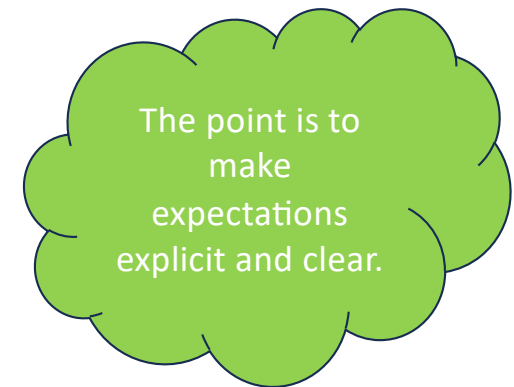
- Team leads still write code and perform other tasks. Managing the project is not a full-time job.
- Everyone can still help with parts of the project outside of their immediate area of responsibility.
- Nobody is allowed to “take time off” i.e., you cannot “double up” work one iteration and then ghost the team for the next one.

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 - required

- 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 contents are decided by the team, but typically addresses:
 - Team leadership and communication
 - Team meeting expectations
 - Team & individual expectations
 - Managing team challenges and conflict
 - Other considerations



Team contract - required

It *must* include:

- Team member names, roles and contact info.
- When you will meet.

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."

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

Communication

How to communicate effectively within your team.



How the Customer explained it



What the Project Manager understood



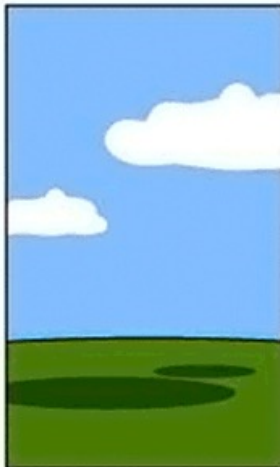
How the Analyst designed it



What the Programmer wrote



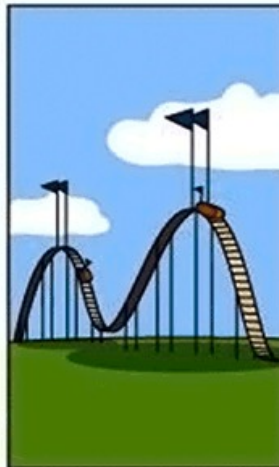
What the Business Consultant presented



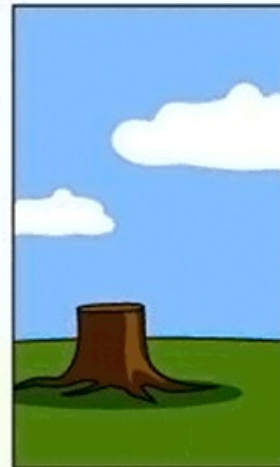
How the Project was documented



What Operations installed



How the Customer was billed



How the Solution was supported



What the Customer really needed

Team meetings - required

- 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.
- **You are required to meet twice each week** (in-class is fine).
- 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.
 - The project lead should 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 (1/2)

1. **Avoiding or Withdrawing.** Individuals in conflict retreat from the situation to avoid the disagreement. This can cause the conflict to fester and then escalate later.
2. **Competing or Forcing.** Conflict is viewed as a win-lose situation i.e., winning the conflict is seen as more important than the relationship between the individuals. This can result in resentment and deterioration of the work climate.
3. **Accommodating or Smoothing.** This approach emphasizes finding areas of agreement within the conflict and minimizes addressing differences. Topics that may cause hurt feelings are not discussed. This may make a situation bearable but doesn't solve the issue.
4. **Compromising.** Team members search for an intermediate position. Compromise may not result in the optimal solution.
5. **Collaborating, Confronting, or Problem Solving.** Team members confront the issue directly, with a constructive attitude, and look for a win-win outcome. They place high value on both the outcome and the relationship.

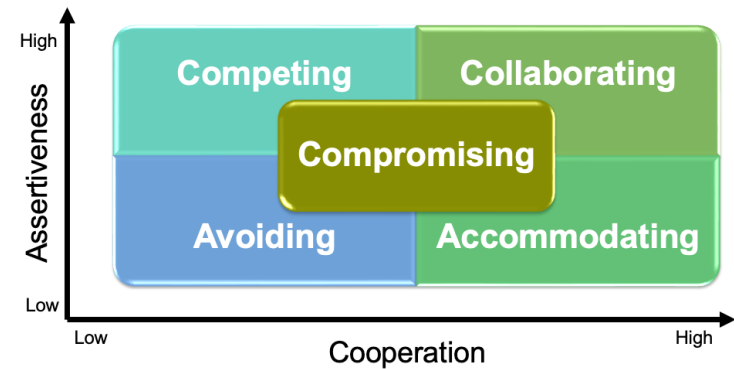


Handling Conflict (2/2)

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.

Wrap-up!

What you should be doing next! Any questions?

Week 01: Introduction

- Wed lecture (today)
 - [Introduction](#) ✓
 - Course website ✓
 - Teamwork ✓
 - *Meet people and form teams*
- Fri lab
 - [Forming and registering teams](#)
 - [Setting up your project space](#)
 - [How to write project documentation](#)
 - *Free time for teams to work ahead*

Find a team this week!

You must work in teams of 4 people.

- Everyone must be physically present (meetings 2/week+).
- Everyone must be registered in the same sections -- *talk to me for an override*

You are expected to find your own team.

- Talk to people in class!
- Invite your friends to the course! We'll make space -- *I'll override them in.*
- Use the "Search for teammates" [Piazza post](#).

Ideally:

- Look for people with similar interests e.g., running, music, cooking.
- Look for people that work similar hours/have compatible schedules.

<https://student.cs.uwaterloo.ca/~cs346/1259/getting-started/project-team/>