

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

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

You will be in
teams of 4 for this
course.

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.

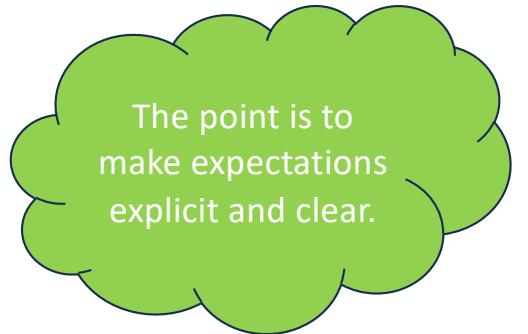
- Team leads still write code and perform other tasks. Managing the project is not a full-time job.
- Everyone can still help with parts of the project outside of their immediate area of responsibility.
- Nobody is allowed to “take time off” i.e., you cannot “double up” work one iteration and then ghost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



The point is to make expectations explicit and clear.

Team contract - required

It must include:

- Team member names and contact info.
- Roles that you wish to define e.g., team lead, tech lead.
- How you will make decisions e.g., "we vote and majority rules".
- When and where 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."

CS 346 Team Contract (Team #123)

Team roles

- _____ is our team lead, and is responsible for coordinating the project.
- _____ is responsible for merging code into Main and producing product releases.
- _____ is responsible for the front-end design and features, including prototypes.
- _____ is responsible for the database and backend design, including diagrams.

Team meetings

- Our team will meet every Wed and Fri during class.
- All members will attend these meetings or notify the team by e-mail in advance of anticipated absences. We all agree that absences should be rare.
- All group members will come to the meetings prepared by
 - (a) reading the assigned material (as much as possible), and
 - (b) coming with ideas pertaining to the tasks and decisions to be made.
- Members will not work on other assignments during meetings and will be engaged.
- Decisions can be made during meetings even some members are absent.
- Each member will take turns listening as well as talking, and active listening will be a strategy for all group discussions.
- _____ will post the agenda for the week on the Team wiki before Wed class.
- _____ will take notes during all meetings and post them on the Wiki within 1 day.

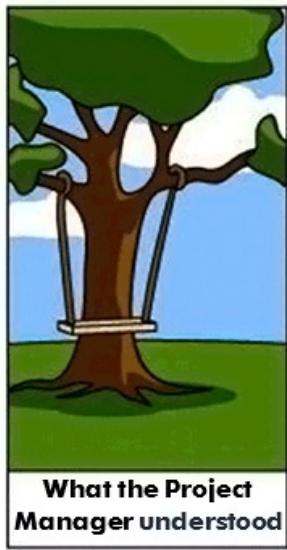
See the [Gitlab > Templates](#) for a sample team contract.

Communication

How to communicate effectively within your team.



How the Customer explained it



What the Project Manager understood



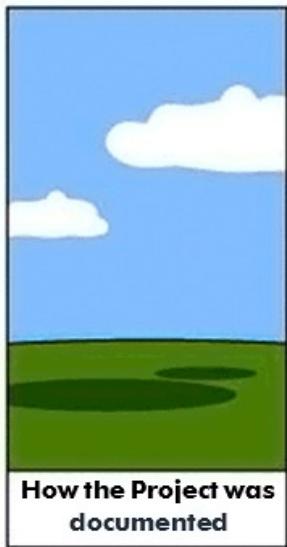
How the Analyst designed it



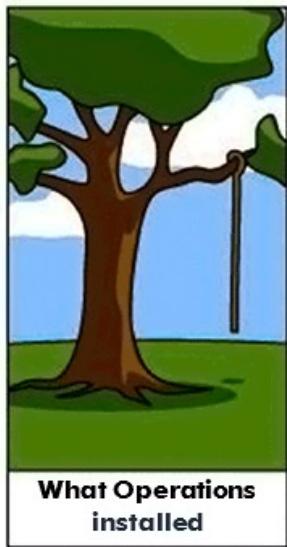
What the Programmer wrote



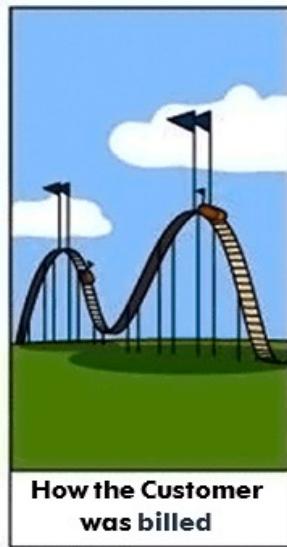
What the Business Consultant presented



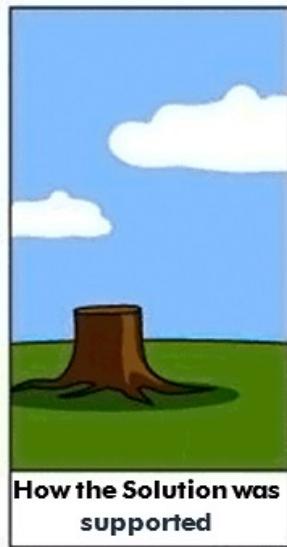
How the Project was documented



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 prepare 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.
2. **Resource Assignments:** Who is assigned certain tasks, what they are assigned.
3. **Schedule:** The sequence of tasks, or how long tasks 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., the instructor.
8. **Personal:** Differences in individual values/attitudes on the team.

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.

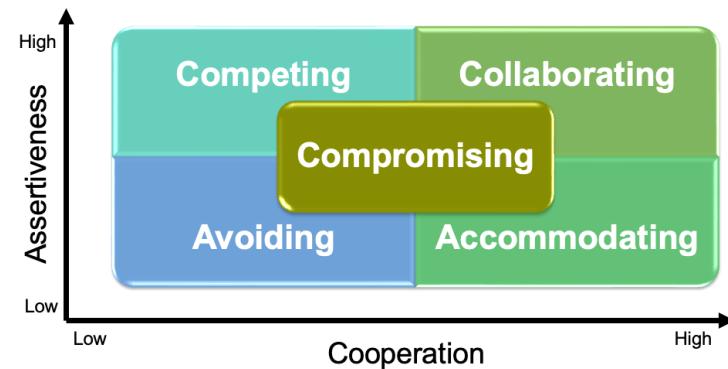


Handling Conflict (2/2)

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.