

TEAMWORK

CS 346: Application
Development

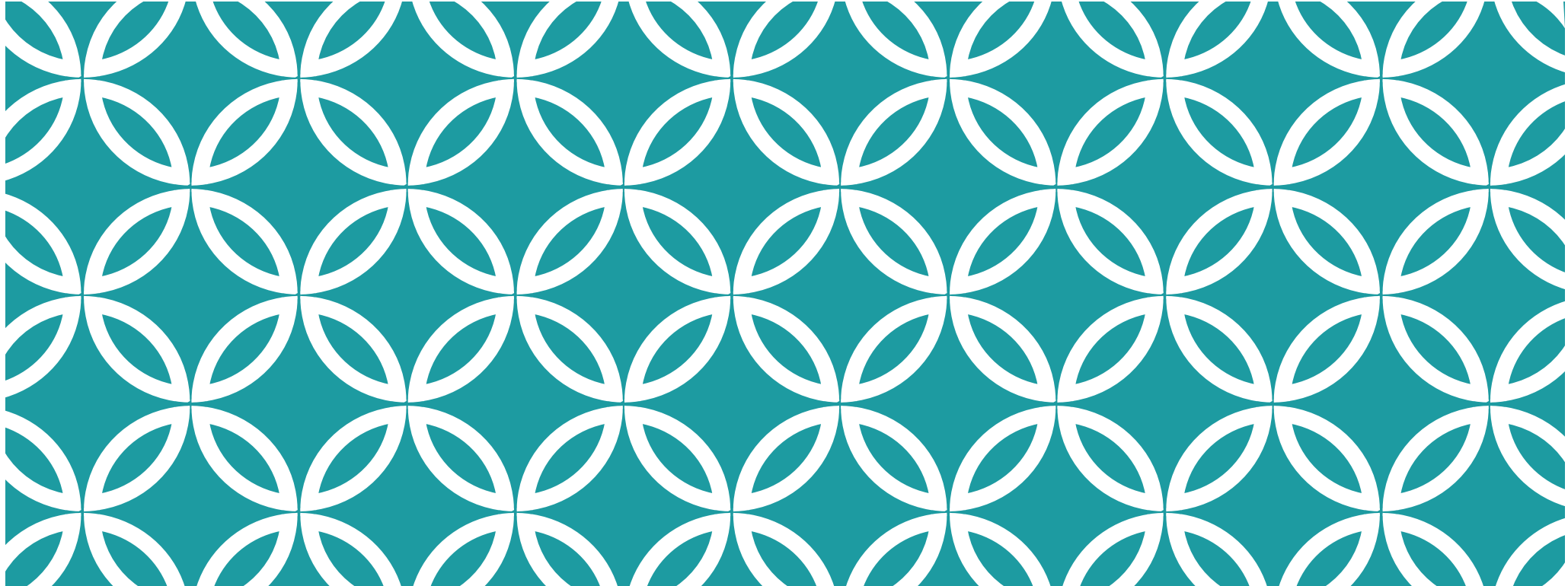
WHY TEAMWORK?

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.



TEAMWORK > ASSEMBLY

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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 (1/3)

You will be in teams of 4 for this course.

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

Team Lead

- The person responsible for keeping the team on track and ensuring that the project is completed.
- Ensures that the requirements are defined accurately, that the team is tracking work properly.
- Help the team coordinate to meet its goals for each deliverable.
- Define the agenda for team meetings, take minutes and ensure the team is following the contract.

Technical Lead

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

TEAM ROLES (2/3)

Teams **may** split design responsibility between front-end (user interface) and back-end (data/services). This can lead to **optional** technical 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 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 should be shared.

TEAM ROLES (3/3)

1. 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.

2. No single person is "the boss" of the project, and significant decisions should be made with the input of the entire team.

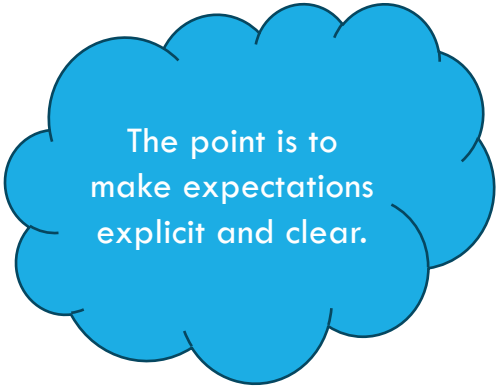
- Team and technical lead roles help with project coordination.
- Design lead roles help with early design around code parts of the project.

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



The point is to
make expectations
explicit and clear.

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.



TEAMWORK > COMMUNICATION

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How the Customer explained it



What the Project Manager understood



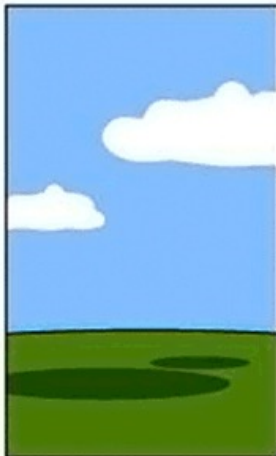
How the Analyst designed it



What the Programmer wrote



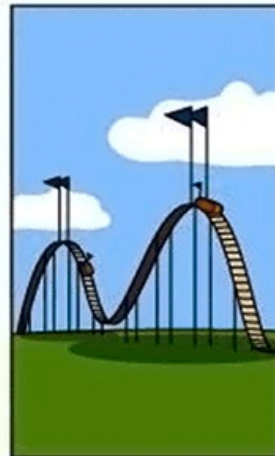
What the Business Consultant presented



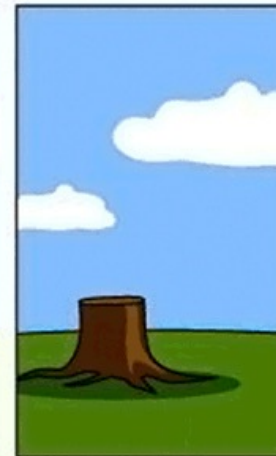
How the Project was documented



What Operations installed



How the Customer was billed



How the Solution was supported



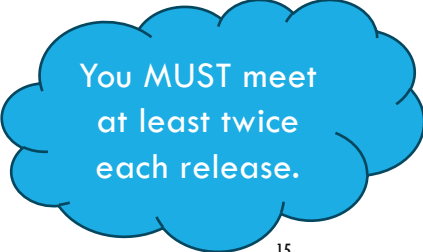
What the Customer really needed

TEAM MEETINGS

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 topics on the agenda. This means reading any required materials, watching lecture videos etc.
- The project lead should keep the team organized around the agenda and ensure that the meeting stays on track. Make sure you accomplish what you intended to accomplish.
- Someone should be designated to take notes during the meeting.
- Agenda and notes should be stored in the Wiki as part of your project.



You **MUST** meet
at least twice
each release.

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.

You should not need to wait for a team meeting to ask questions or collaborate! Use both planned team meetings and informal communication to keep the project moving.

You should agree on using one of of these and include it in your team contract.



TEAMWORK > CONFLICT MGMT

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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:

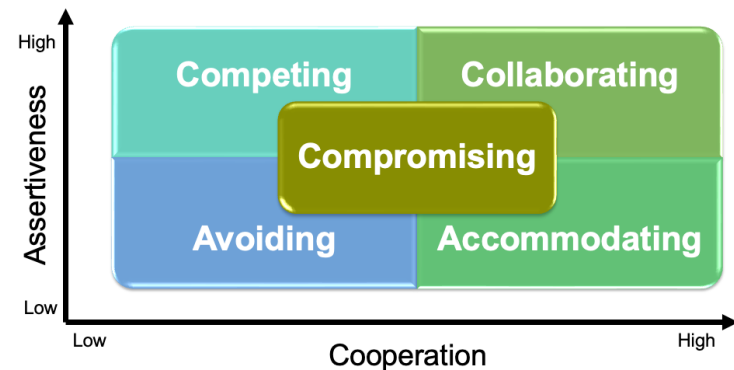
1. **Work Scope:** Differences of opinion on how work should be done, how much, level of quality.
2. **Resource Assignments:** Who is assigned certain tasks, what they are assigned.
3. **Schedule:** The sequence in which the work should be completed, or how long it should take.
4. **Cost:** How much 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).

Not surprisingly, 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.