

# COMP 8037

# Major Project

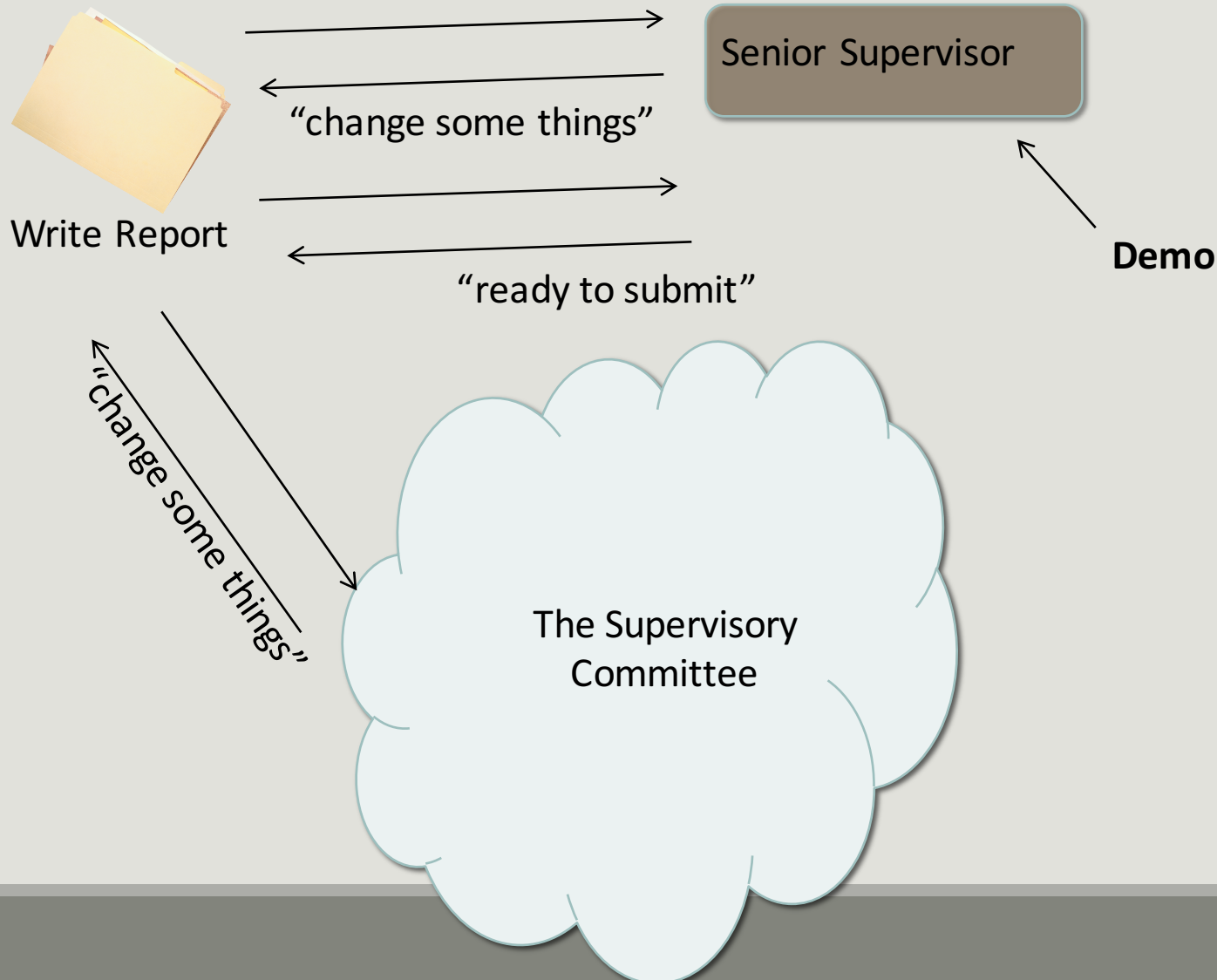
# Proposals

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FINAL REPORT

# Overview of process

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# Responsibilities

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## You:

- Do the project and demo to supervisor
- Write the report and submit to supervisor then committee

## Supervisor (subject matter expert):

- Provide some assistance
- Approve the demo and the report (including letter of approval)

## Industry sponsor (maybe)

- Writes approval letter

## Supervisory Committee

- Gives final comments and (hopefully) approval

# Timeline

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Aim to have demo and first draft of report ready for supervisor **TWO MONTHS** before you want/need to finish

Any less than **ONE MONTH** before, and there is a high risk there is not enough time for the whole process

## Rationale:

- Each iteration of review, receive comments, revise, resubmit takes about 2 weeks
- 1 months basically allows for one iteration with the supervisor and 1 iteration with the committee
- 2 months allows for 2 iterations for each

# Timeline

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**Do NOT** leave things to the last minute and then be upset if supervisor or committee is not fast enough!

Faculty goes on holiday in July and August (and sometimes June), so do not count on people reviewing reports during those months

Faculty also goes on holidays over Christmas break and gets very busy in early December, so best not to count on too much availability in December either

# Submission

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You submit three things:

- Proposal
- Project
- Report

The proposal is like a contract

- If it is approved, we are saying “this is good enough”
- So...DO WHAT YOU SAID IN THE PROPOSAL

# Common Questions

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But what if I hate my proposal?

What if it does not work?

What if I come up with a better idea?

Answer:

- Talk to your supervisor immediately
- If you change the project substantially you need to have a revised proposal
  - AND it has to be approved again

# Approval Letter

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Common question:

- “Can I submit without supervisor approval letter?”

Technical answer:

- “Yes”

Better answer:

- “Normally, that is not a good idea.”



# Approval Letter

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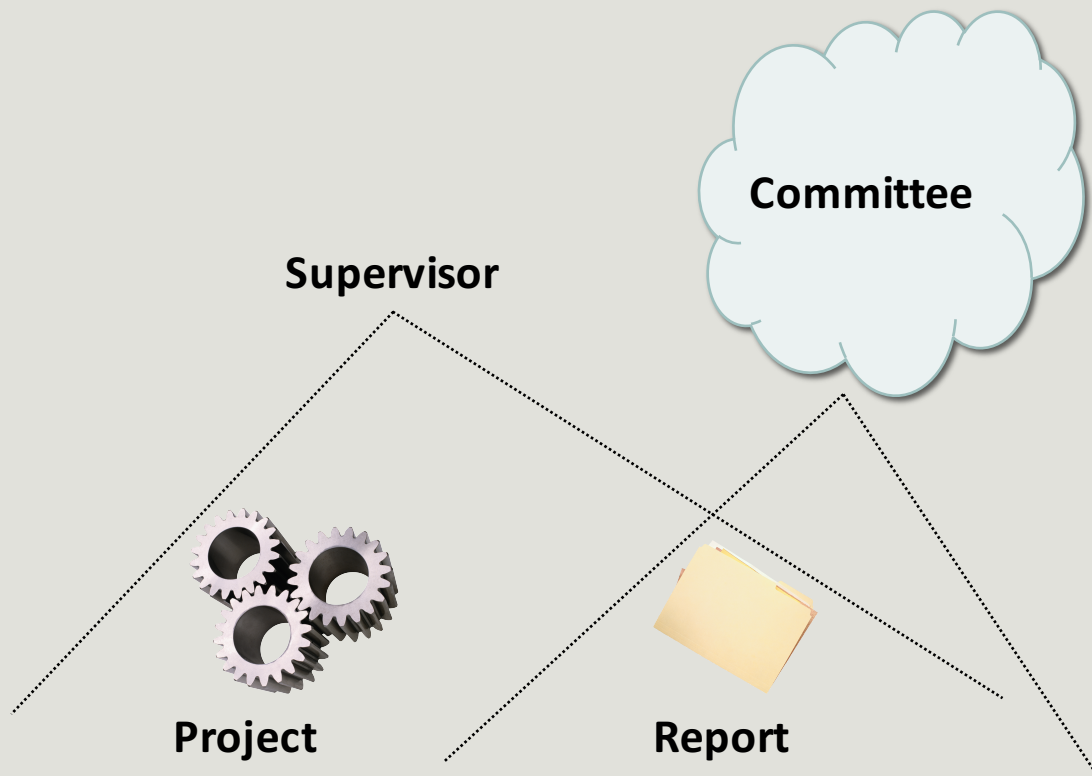
## Reasons to submit without approval letter:

- Your supervisor does not approve
  - S/he might wrong
  - But it's unlikely the committee will agree
  - You are absolutely better off getting approval
- To buy time
  - You have to submit by the due date
  - If it gets rejected... you get two weeks to fix it
  - Sometimes this works out

# Final Project

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**Important picture:**



# Final Report

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## Why this matters:

- Your supervisor sees a demo
- They talk to you for a year
- They understand what you have done
  
- Normally, the committee only looks closely at the report
- You must describe/sell the work

So... let's talk about the report

# Guidelines

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The guidelines for the report are online

<https://commons.bcit.ca/computing/files/2019/09/Major-Project-Guidelines.pdf>

There is also a template available (and sample reports from previous students)

# Main Sections

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Introduction

Body

Conclusion

Appendix

How long should it be?

- No fixed length
- Typically in the 50-200 page range

# Introduction

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Background on the nature of the project

Essential problems being solved

Brief description of the project itself

Goals and objectives of the project

# Introduction

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XYZ apps are popular... they don't do...

This project solves this problem...

This kind of approach/technology is used...

The goal is to make an app that is useful/interesting to the market like this...

# Body

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The body has a bunch of sections

- It is the longest part
- You need ALL of the sections in the guidelines

Use concise writing AND diagrams

Include SOURCE CODE and SCREEN GRABS



# Body - Sections

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A. Background of the project, company background, etc.

Give some context for your report. It is better to be objective...

i.e. Don't say

“I wanted to do this because I like it”

Instead... give clear reasons/explanation

# Body - Sections

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B. Project statement within the context of company operations

You only need this if you have a partner company.  
Explain your role/department/etc.

# Body - Sections

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## C. Possible Alternative Solutions to the Project

Presumably your idea is not the only solution.

Presumably your approach is not the only one.

Presumably other people have tried this.

Presumably different technology could be used.

Explain some of this.

# Body - Sections

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## D. Solution Chosen for this Project and Rationale Behind

You just told me there are lots of ways to solve this problem....

How did you choose to solve it?

Why are you doing it this way?

# Body - Sections

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## E. Details of Design and Development

In this section... you need to explain the design of your solution (in detail). The required components depend on your methodology.

# Body - Sections

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## E. Details of Design and Development

For “traditional” development methodology:

- Feasibility assessment
- Entity relationship diagram/analysis
- Context diagram
- Data flow diagrams
- Network diagrams
- Installation manuals/user manuals

# Body - Sections

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## E. Details of Design and Development

### For Games :

- Player profile
- Prototype
- Storyboards
- User Testing
- Functional requirements testing

# Body - Sections

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## E. Details of Design and Development

In all cases:

You NEED design diagrams. Your report will not pass if there are not enough design diagrams to explain the software.



# Body - Sections

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## F. Details of Testing

You need detailed descriptions of tests and results...  
with SCREEN SHOTS (or other evidence).

This is normally the longest section.

# Body - Sections

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## G. Implications of the Implementation

What does this mean?

The confusing title should not distract you from the importance of this section...

# Body - Sections

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## G. Implications of the Implementation

Key points: performance, functionality, etc.

To this point – you have described what you did, and how you did it.

Now... you are telling us how well it works.

(be honest - and discuss limitations if nec.)

# Body - Sections

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H. Research on the use of New Technologies

(if applicable to the project)

Did you learn at all about something? Did you find interesting limitations? Did you find bugs or new applications?

People often want to talk about all the technologies they used. Do it here.

# Body - Sections

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## I. Future Enhancements

Your project probably could have more features. It might even be able to run better.

Tell us all the great things you are going to add.  
(Be realistic. But there is no contract here...)

# Body - Sections

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## J. Timeline

Break down your work...

How many hours did you spend on each task?

When did you reach key milestones?

# Conclusion

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The last real section is the conclusion

- It can get buried... don't let it
- But it does not need to be long

What we want to see:

- Has the project improved your expertise?
- What lessons did you learn in the process?
- Was it a success/failure? Why?

# Appendices

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Tagged on at the end. As many as you need

Must include:

- A copy of the approved proposal
- Letter of approval from supervisor
- Letter of approval from industry sponsor (if any)

Should also include:

- Anything else important that isn't in the body
- Background info, data tables, pictures,...



# References

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Most projects involve research

- You probably have read some facts
- Those facts make it into the report
- You need to give credit to your sources

Rule of thumb:

- It is impossible to do anything useful without some information from somewhere
- Even just a textbook or some websites...
- Just list the places you used for information

Use standard format for references (like in proposal)

# Report Evaluation (part 1)

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All major sections are evaluated

- All diagrams, body subsections, etc

Writing should be concise and understandable

Problem description must be clear

Must meet stated goals/scope of proposal

All deliverables in fact delivered

# Report Evaluation (part 2)

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Work completed within time/effort estimates

It should be valuable to employer/client/etc.

Quality of final report meets BCIT expectations

Thoroughly evaluated/critiqued by supervisor

Verified as complete by industry sponsor

# Validation

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Here is a common problem:

(common for “AI” projects in games)

I like playing the game X

I am going to write an AI for X

- Look – I wrote it!
- It plays so good – I am a genius

Here is my report that says what I did

# Validation

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What is wrong with this?

- It is incomplete

You need validation:

- How do you know your solution works?
- How do you know it works well?
- How can you convince me?
- Is this an interesting project... or just a coding assignment?

# Validation

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How do you validate your work?

It depends on the project....

- Run time
- Unique functionality
- Usability testing
- Using externally validated methods
- ...

This is not CS 100, Assignment 4

- Just programming a solution is not enough

# Tips for Writing

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Proof read.

- Then proof read again.
  - Then consider getting someone else to proof read

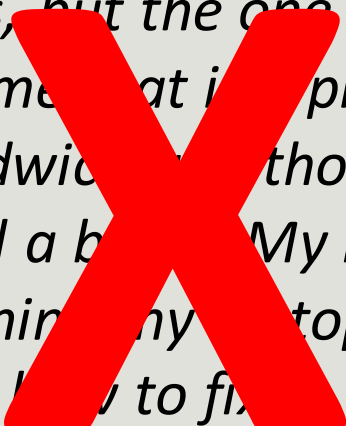
Some people do not like/value writing

- But sloppy writing will hurt you
- You NEED the reader to understand
- You also need them to believe you put effort in to all aspects

# Tips for Writing

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*"I like using weather apps, but the one I use is too slow. I talked to my uncle Rex, and he told me that it's probably the DB access that is slow. So then I had a sandwich and thought about it – and after 27 minutes, I decided to read a book. My mom told me to get back to work, so I hid my book behind my back... and then I realized that I have a good idea about how to fix it. So I went to the library..."*



This is a research report, not a tale of your experiences

- This style of writing can be approved, but it is not ideal

Tell us about the project...

- Not your thoughts, not your opinions



# Final Tips

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Do not give the committee a dilemma:

- We want you to succeed
- We are hoping you succeed
- But there are things you need to do

# Final Tips

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With this is mind:

- Include all sections listed, all diagrams
- Put effort into the writing
- Do everything in your proposal
  - AND make it clear that you did everything in your proposal
- When you get feedback... take it
  - Arguing that you have better ideas almost never works
  - Even if it is true
- Cooperate with the process

# Questions?

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