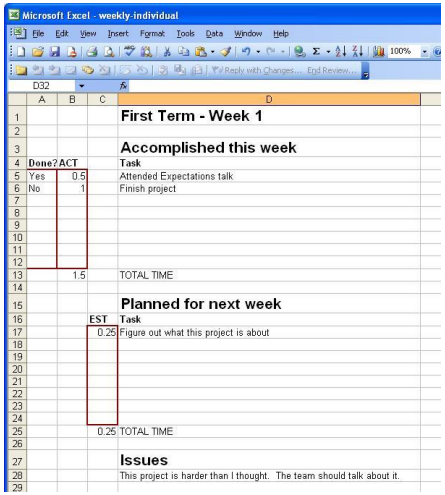
253

Days until end of senior project

SE Senior Project Expectations



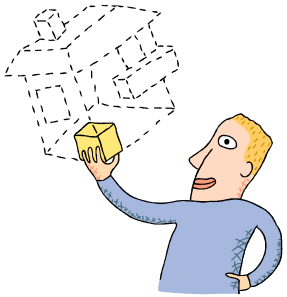
Red Flags

Materials relevant to all teams will be in the myCourses community.

Senior project requires you to demonstrate your ability to work as a professional software engineer.

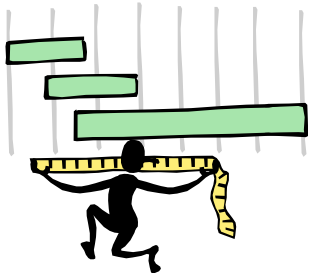
- The skills, which you learned through coursework and co-op, span a broad range of professional behavior.

Working Project achieving Quality Attributes



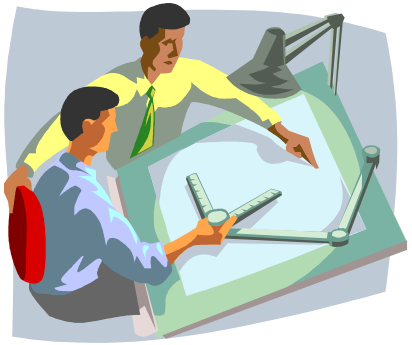
Creative Design

Professional Attitude to the Project Sponsor



Project management

Problem solving

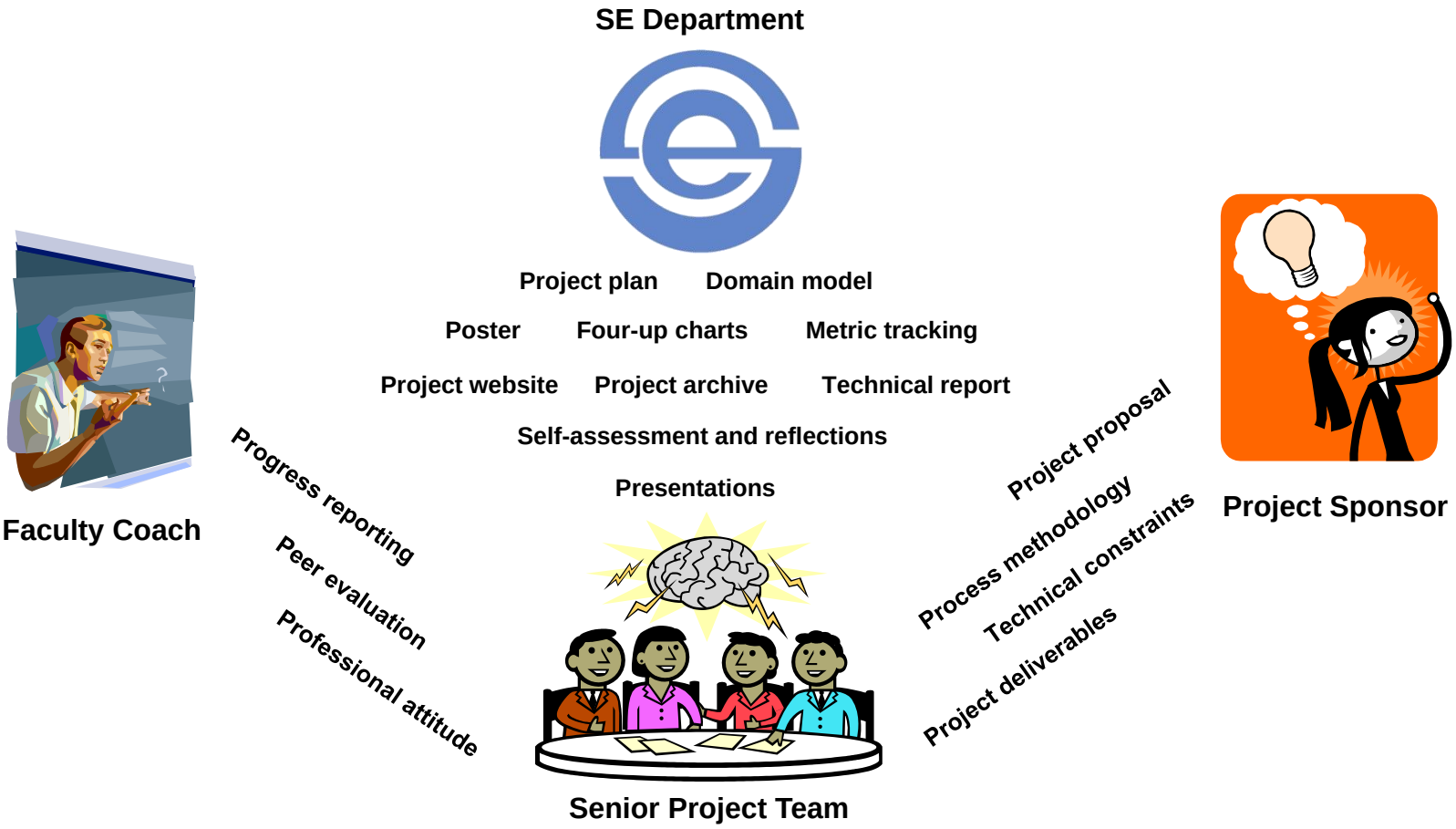


Professional teamwork

Project Planning

This is your project …

- ... within the constraints and boundary conditions set by:



Project teams will sign project agreements.

Student Course Project Intellectual Property and Non-Disclosure Agreement

Student Course Project Limited Use and Non-Disclosure Agreement

Student Open Source Course Project Agreement

Why do we have to do all this extra work?

This is not extra work. You are finding out about it now.

Work it into your project planning.

You may have a choice of process methodology.

- The methodology may be specified by your project sponsor.
- Choose the methodology based on the project. It does have an effect on the success of the project.
  - Over 200 past senior projects has told us
    - *Iterative* delivery has yielded the highest probability of a successful project.
    - *Waterfall* works reasonably well too.

You will use an established development methodology.

Using “agile” has not worked …

… because it is not a methodology.

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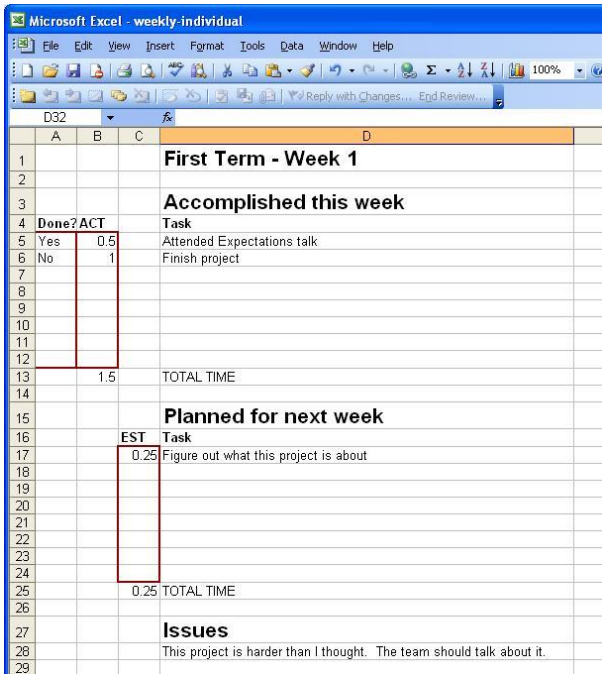
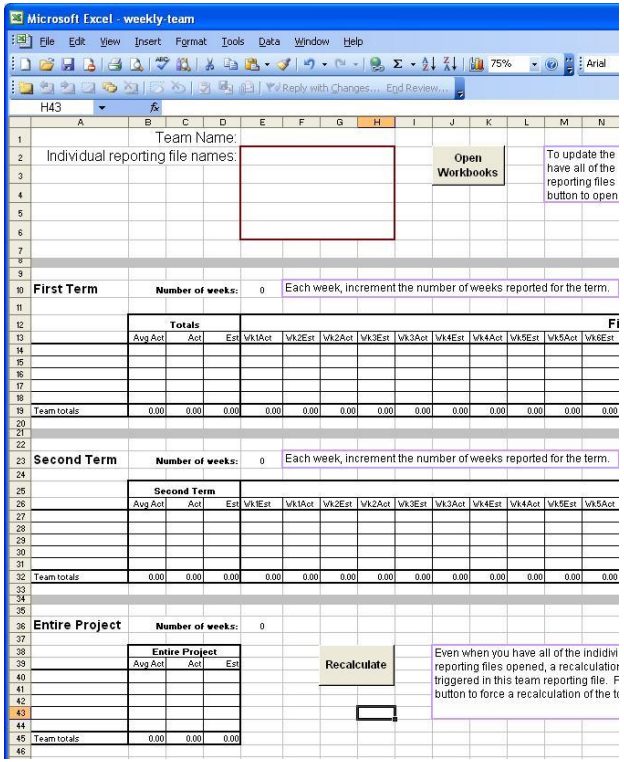
Your team will be held to the approach of the established methodology you choose to use.

- Waterfall flavor: requirements, design, …
- Iterative: defined iterations, iteration requirements, …
- Spiral: risk-driven planning, requirements, end of cycle review,…
- Scrum style: project backlog requirements elicitation and estimating, sprint backlog estimating, daily stand-up meetings, burndown charts, sprint retrospective, …
- Etc…

All teams will measure project and product metrics.

- The team must do time/effort reporting
- Two other product/process metrics appropriate to the project.





There is a strong correlation between working on the project and delivering a successful project.

- There is an expectation for each student to work, on average, **8 – 12 hours/week** on the project.
- A lack of evidence of diligent effort on the project, in conjunction with poor project results and sponsor dissatisfaction, will reflect negatively in final grades.

All teams will do weekly four-up charts.

- A four-up chart contains four areas:
  - Completed activities from last week
  - Planned new or ongoing activities for next week
  - Risks
  - Needs
- This will be discussed with the faculty coach and often is the first thing discussed at the weekly sponsor meeting.

Here are some guidelines that you will follow for your weekly four-up charts.

- Maintain a file of all four-ups with current first
- **Every** team member should have a presence **each week** in the **completed** and **planned** activities.
- Show the risks that are most important.
- It will be a rare week when the four-up chart has no risks, and the risks will typically change week to week.
- Needs are what you need from someone outside of the team. It can be information, resources, completion of a task, …

A good risk management process is critical to project success.

- Risk management is a daily/weekly, dynamic process.
- Pay **little attention** to planning, prevention, and mitigation strategies for the low probability “team member is run over by a bus” risks.
- Pay **a lot of attention** to planning/working prevention and mitigation strategies for the high probability “We do not know how to do X” risks.
  - Prevent these with well-specified requirements, and spike technology solutions
  - Have mitigation strategies, i.e alternate well understood approaches with trigger dates for taking action

Project scope is a major risk.

- Many sponsors prepared proposals with the guidance “do not be afraid of scope”.
- Part of your job is to assess project scope, and negotiate scope, if necessary.
- You will be accountable for what you agree to.
- Keep communicating with the sponsor on this. “When are they going to tell me they can’t get this done?”

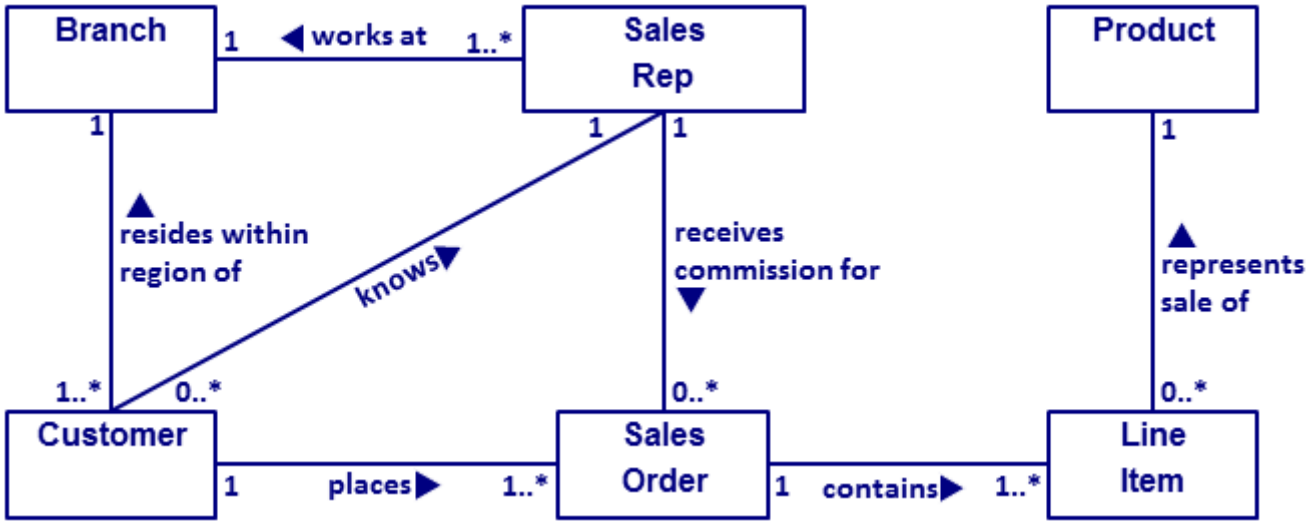
Beware of the Red Flags!

Advice from the Trenches

- **Choose a good team coordinator to keep the project moving and everything in control.**
- **Spend time on the requirements.**
- **Make sure you understand the requirements before jumping into implementation.**
- **Understand the domain, then the requirements, and then figure out what needs to be done to fulfill those requirements with as much detail as possible.**
- **Have strategies to mitigate your risks.**
- **Teams should be as proactive as possible and not be afraid to ask questions, either from a sponsor, faculty coach, or team member when you are unclear about something.**
- **Don't be afraid to tell the sponsor 'no' when it comes to change requests.**
- **Communicate early and often with your project sponsor and keep them notified of any issues encountered. Sponsors can be very understanding if they are well-informed, while project delays without explanation will certainly draw some ire.**
- **Plan to be done coding by the end of week 12 of the second term.**
- **Don't underestimate the project. Things are tougher than they appear.**
- **Try to have fun with your team members. You will be working closely with them for many months, so it's good to start making positive relationships.**

It is important to gain an early understanding of the problem domain.

- Each team will create a domain model for the project scope by the end of week 4 of the first term.



Some of you may wonder how senior project is graded.

- Welcome to the world of evaluating professional performance.
- Projects are very different with very different goals, approaches, methodologies, deliverables, etc.
- There are no fixed, graded elements for your project.
- One factor in the team's grade is the project sponsor's satisfaction with the project work, and your delivery on agreed to requirements.
- Your faculty coach will also consider individual contributions.
  - Repository commits, pull requests, code reviews
  - Requirements and planning activities
  - Meeting participation
  - There will be audit trails of activities showing contributions

Please Act Professionally

You are ambassadors for the SE program and senior project.

Many sponsors have returned with second, third, or more projects.

We would like this to continue.

Just a few last points

- You will get
  - Swipe card access to the team rooms
  - Team account, if you want one
  - A space reserved for the weekly meeting with your project sponsor
- You can request
  - A space for setup of specialized equipment needed for the project
  - Linux or Windows virtual machine for development or to match a deployment environment

Have a great senior project!