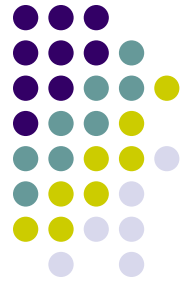




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Department of Computer Science  
Faculty of Engineering  
University of Victoria

<http://www.engr.uvic.ca/~seng321/>  
<https://courses1.csc.uvic.ca/courses/201/spring/seng/321>

# Announcements



- New class room as of Wed
  - MAC 288 (original one)
- Midterm rescheduled due to lab clash
  - Fri, Feb 26 in class  
**confirmed !!**
- Website
  - **Due yesterday**
  - Submission: send link to [hausimuller@gmail.com](mailto:hausimuller@gmail.com) with Subject: SENG 321 Website
- Assignments/Deliverables
  - S0, C0, S1, C1 specs posted
  - Group website spec posted
- Projects
  - Original RFP posted again
  - **Check for project websites**

## Projects

[Car Wash - RFP](#)

[GPS Enabled Text-Adventure RPG - RFP](#)

[Meals for the Moment - RFP](#)

[Shower Management System - RFP](#)

[Course Schedule Creator - RFP](#)

[Good Morning: Wake up smarter - RFP](#)

[SERVEitude! - RFP](#)

[Location & Time Based Restaurant Specials - RFP](#)

[EventCity-The best Queueing System - RFP](#)

[Lumin - RFP](#)

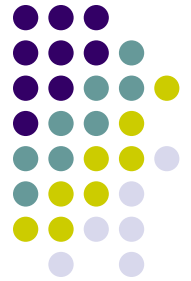
[ELW Locker Reservation System - RFP](#)

[Ability Hire - RFP](#)

[Opportunity App - RFP](#)

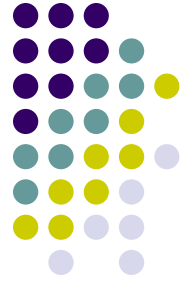
[Smart Beverage Dispensing System - RFP](#)

[Mobile Lighting Control System - RFP](#)



# Missing Project Websites

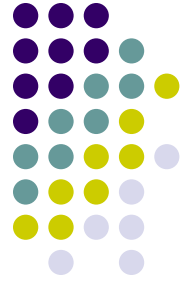
Submission: send link to  
[hausimuller@gmail.com](mailto:hausimuller@gmail.com) with  
Subject: SENG 321 Website



# Course Objective

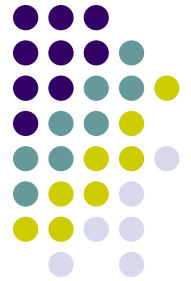
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- Learn how to produce a software requirements specification (SRS) for a project, as part of a team, such that the SRS is:
  - Clear, concise and understandable
  - Unambiguous
  - Checkable—complete, consistent
  - Testable / verifiable / measurable
  - Traceable
- The SRS should act as a useful and useable reference



# Requirements Specification

- Is clear/communicable—readable, communicates effectively
- Specifies what the system is supposed to do
- Is unambiguous, single interpretation, no misunderstanding
- Is checkable, precise enough to reveal errors with respect to inconsistency and completeness
- Is testable, quantifiable—can we tell if the system satisfies this requirement.
  - Difficult to satisfy properties: The system shall be user-friendly and secure.
- Is traceable—requirements are clearly identified and relationships are captured; from business rules and rationales to code and back.
- Is a useful reference—not a book to be read from front to back, but a reference in which is easy to use to look up a fact
- Is “correct”—does not contradict “real” world



# Requirement Errors

- Requirements errors are the most common class of errors—coding represent a small fraction comparatively
- Requirements errors are the most expensive to fix—consume ~25-40% of a project's budget
  - Re-specification
  - Re-design
  - Re-coding
  - Re-testing
  - Re-training
  - Re-distributing
  - Recall, legal, warranty, service (re-install) costs

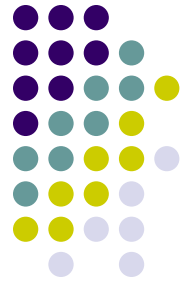


# Role of Requirements Analyst



- Articulates and defines the business needs with the customer
  - Why are we undertaking the project
- Identifies project stakeholders and user classes
- Elicits requirements
- Analyzes requirements
  - Derives new requirements
  - Investigates and documents implicit requirements
  - Resolves ambiguity and confusion
  - Points out conflicting requirements
- Writes requirements in an SRS (software requirements specification)
- Models requirements using graphs, tables, prototypes
- Validates that requirements satisfy customer needs and are clear, complete, correct, feasible, necessary, traceable, unambiguous, and verifiable
- Facilitates prioritization of requirements
- Manages requirements
- Interface between the customers and the designers

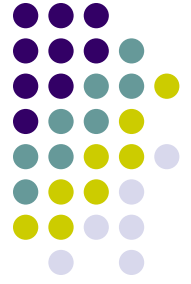
# Requirements analyst may discover better ways to do things



- Clients notion may be limited to past experience
- Requirements analyst may know better approaches and solutions
- Ask and understand why documented requirements are desired
- For example, consider whether the system should give the user more creative control over his or her transactions
- Brainstorm to elicit undreamt-of requirements



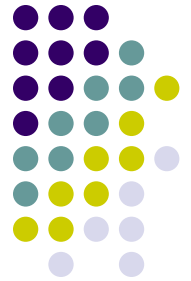
# Discover better ways to do things



- Past experience of manual system or another's system.
  - Business process reengineering
  - Central repository, networks
- Ask why – is there a more fundamental goal than the stated requirement?
- Consider a customer that uses an ATM to withdraw cash. *Why* does (s)he want cash?
  - Is it to buy something?
    - If so, then why not extend the ATM card to act as a debit card in retail outlets so that (s)he doesn't have to go to the ATM in the first place.
  - Is it to pay her electricity bill on her way to work?
    - If so, then why not offer the opportunity to pay bills at the ATM.
  - Does (s)he just want to see his or her account balance?
    - If so, then why not give her the facility to do this over the phone or on the Internet?

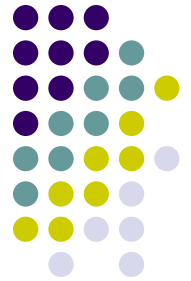
# Discover better ways to do things

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- Consider giving the user more creative control over his/her transactions
  - Layout
  - End-user programmability
- People would rather do some of the work themselves, if they think they would do a better or faster job.
  - CAD software allows users to design their own furniture, houses.
  - Investors trade stock over the Internet without the advice or intervention from a broker or trader.
  - Shoppers are using self-scanners to scan and pay for groceries, rather than queuing for the checkout.

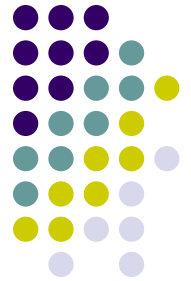
# Requirements Analyst Needs Soft Skills



- Listening
  - Must read between the lines
  - Should not impose his or her own ideas
  - Watches out for underlying assumption
- Interviewing and Questioning
  - Clarifies uncertainties, disagreements, assumptions and unstated expectations
- Analytical
  - Reconciles conflicts
  - Separates user wants from needs
  - Distinguishes *How (solution)* vs. *What (requirements)*

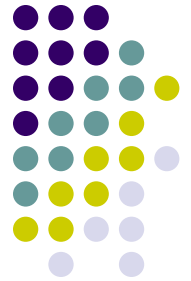
# Requirements Analyst Needs Soft Skills

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- Facilitation
  - Acts as a neutral facilitator and negotiator in requirements elicitation workshops
- Observation
  - Detects subtleties and unstated requirements by watching users
- Writing
  - Strives for clarity and avoid ambiguous words
- Organization
  - Can rapidly structure *changing* information into a well written document

# Requirements Analyst Needs Soft Skills



- Modeling
  - Uses Models (e.g., UML, flowcharts) to communicate between stakeholders
  - Teaches stakeholders how to read models
- Interpersonal
  - Needs to work with people with varying interests, experience, and skills
- Creativity
  - Finds creative ways to satisfy needs that users did not even know they had