CSC290 Communication Skills for Computer Scientists

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Lecture 3; Sep 24, 2018

Announcements

- Critical review article #1 due Sunday 9pm
- Drop-ins available at the RGASC
  - **today** 3pm-7pm
  - by appointment
- Submit on Quercus (not MarkUs)

Today's lecture

- Business Analysis
- Project Management

Business Analysis

Why?

This course is about communication skills for computer scientists, not business analysts. Why are we talking about business analysis?

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This course is about communication skills for computer scientists, not business analysts. Why are we talking about business analysis?

- You may be working with business analysts and project managers; better to know what they do
- Some computer science graduates choose to become PMs and BAs

Figuring out what to build is half the battle

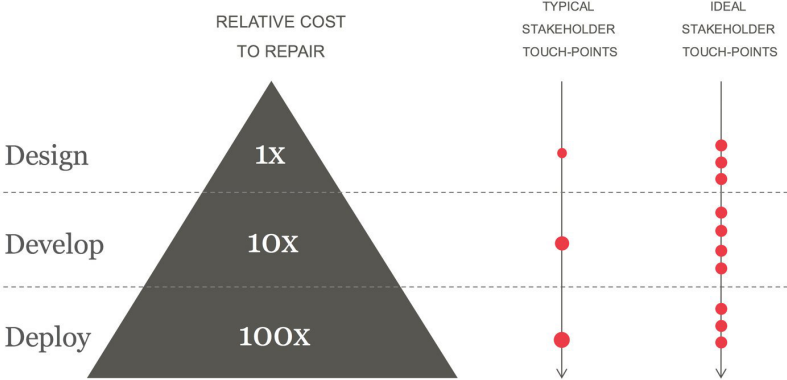How the customer explained it | How the project leader understood it | How the engineer designed it | How the programmer wrote it | How the sales executive described it

Thinking ahead saves time

Business Analysis

Business Analyst (BA) = intermediary between clients, stakeholders, and solution delivery team (eg. developers)

- "Governing body" = International Institute of Business Analysis (IIBA) http://www.iiba.org
- Business Analysis Body of Knowledge (BABOK)
- Certification: Certified Business Analysis Professional

Business Analyst (BA)

- Found in engineering, software, finance, food service, manufacturing, hospitality, staffing, etc.
- People doing business analysis might not be called a "BA". They may also include:
    - Business systems analysts
    - Requirements engineers
    - Product managers / Product owners
    - Enterprise analysts
    - Management consultants
    - Systems analysts
    - Process analysts
    - Business architects

Business Analysis

- Focus on requirements
    - elicitation (gathering)
    - documentation
    - prioritization
    - communication
    - verification (testing)
- What is a requirement?
    - "A condition or capability needed by a stakeholder to solve a problem or achieve an objective."

BA Planning & Monitoring

- ▶ Identify stakeholders
- ▶ Determine deliverables
- ▶ Estimate time, effort, resources, approach

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- **Stakeholder**: Person or party with a interest in the project/process; can affect or be affected by project/process.
- **Deliverable**: A tangible or intangible product or service produced.

Stakeholder Identification

UofT just replaced its Learning Management System. Stakeholders were:

What are My Deliverables for CSC290?

BA Knowledge Areas
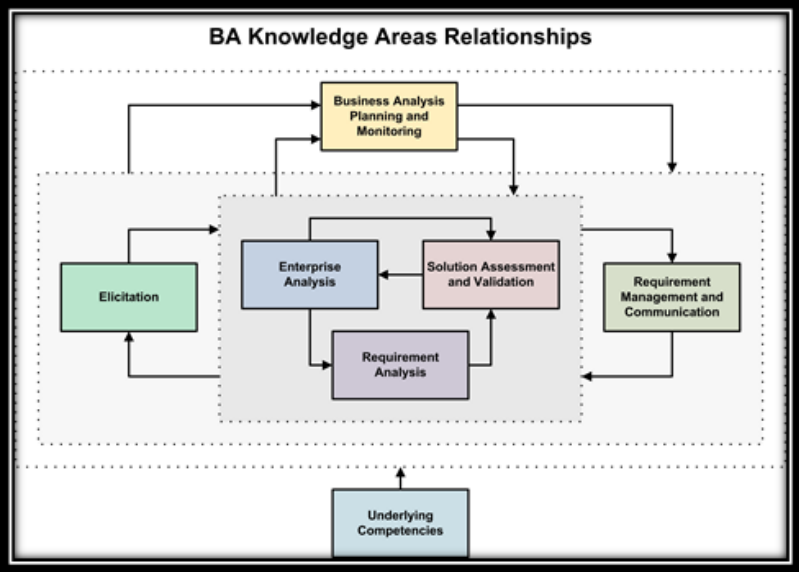
Requirement Elicitation

- "Elicit" defined as:
  - Draw forth or bring out (something latent or potential)
  - Call forth or draw out (as information or a response)
- Engage stakeholders actively to define requirements
- Requirements must be complete, clear, correct, and consistent

Enterprise Analysis

Is the business a local bakery, a large plant bakery, an accounting firm, a salon/spa. . . ?

- Identify business need, problem, or opportunity
- Identify the business rules and document business requirements
- Know the culture of the organization or department

Requirement Analysis

- Define and describe the characteristics of an acceptable solution so the project team has a clear understanding of how to design and implement it
- Create documentation to structure the raw data collected during Elicitation
- Resist providing solutions or code. Keep requirements broad and let the developers be specific
- Develop estimates for time, resources and budget

Solution Assessment and Validation

- Ensure solution meet requirements
- Assess how proposed solution would impact business and users
- Project Implementation Plan required
- User training
- Conversion / Migration of existing information, process
- User Acceptance Testing (UAT)

Requirements Management & Communication

- Keep track of the requirements (documentation)
- Communicate the right requirements in the right way to the right people
- People consists of diverse audience of stakeholders from different background and business domains

Role Play

Worksheet:

- Read question 1.
- Read question 2: think about the questions that you might want to ask.
- For question 3, find a person with a different worksheet than you do.

Deliverable Identification

What are some possible deliverables for the cake shop website?

Grammar break

What is wrong with the following sentence?

The authors come to the conclusion that technical skills on their own are not enough to be hired by businesses these days.

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Wordy.

What is wrong with the following sentence?

The authors come to the conclusion that technical skills on their own are not enough to be hired by businesses these days.

Wordy.

- The authors **conclude** that technical skills alone is not enough to be hirable ~~by businesses these days~~.

Shorten the following sentence:

On the basis of the data gathered, the article supports the reasoning that having non-technical skills will help an individual obtain IT related jobs.

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On the basis of the data gathered, the article supports the reasoning that having non-technical skills will help an individual obtain IT related jobs.

- ▶ The data supports the authors' hypothesis that non-technical skills help individuals obtain IT related jobs.

Conciseness

- Verbs are more concise than nouns
  - "come to the conclusion" vs "conclude"
- Active voice is more concise than passive
  - "the conclusion is supported by the data" vs "the data supports the conclusion"
- Positive statements are more concise than negative
- Many expressions (e.g. "the fact that") are unnecessarily long

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Grammar worksheet: work with a partner!

Project Managment

Project Management

A Project Manager (PM) is a professional who plans, procures, and manages the execution of projects

- "Governing body" = Project Management Institute
  https://www.pmi.org/
- Project Management Body of Knowledge (PMBOK)
- Certification: Project Management Professional (PMP) and
  many others

Knowledge Areas

- ▶ Integration Management
- ▶ Scope Management
- ▶ Time Management
- ▶ Identifying Risks
- ▶ Others

Integration Management

Key task: Develop project charter

Project Charter

- High level definition of project
- Can be changed but there is process in place to document and control change
- A kind of agreement - requires formal sign off by project sponsor (person paying for the project) and possibly stakeholders

Scope Management

Key Tasks: Define Scope & Create Work Breakdown Structure (WBS)

- ▶ Scope: work to be included as part of the project; project documentation may also specifically identify work that is not part of the project ("out of scope")

What's In Scope? What's Out of Scope?

Development of new website for the bike store?

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In scope?

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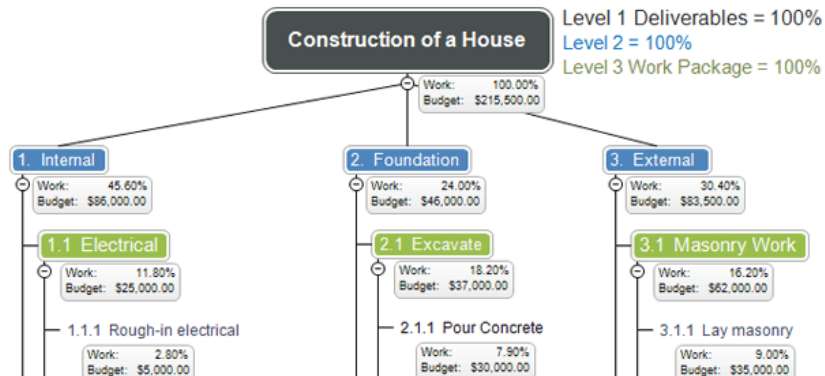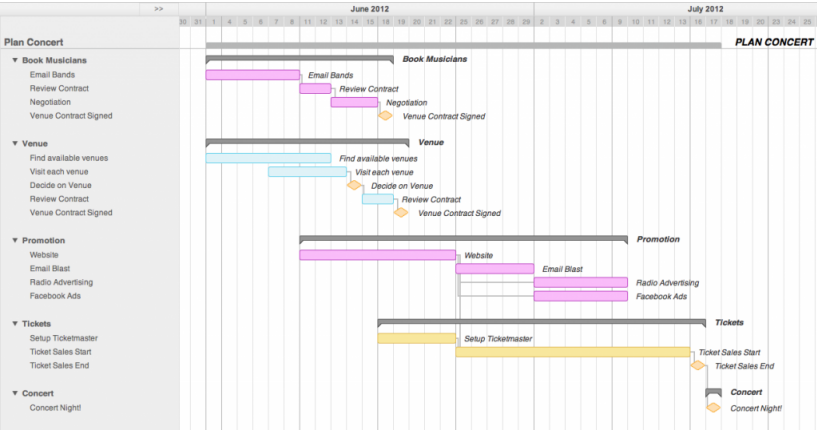Out of Scope?

Work Breakdown Structure

Figure 1: from https://www.workbreakdownstructure.com/

Gantt Chart

Figure 2: from http://executivepropmgmt.co/

Time Management

Key Task: Develop Project Schedule

Keep in mind:

- ▶ How long does each task take
- ▶ In what order do the tasks have to be completed
- ▶ How much resources (eg. people, time) do you have for each task
    - ▶ What are your **milestones**
    - ▶ A **milestone** is a significant checkpoint in project timeline

Identify Risks

Risk Management Key Tasks: Identify Risks

- ▶ Anticipate possible problems that may occur

- ▶ Plan for possible responses to such problems

- ▶ For example, using a Risk Register
    - ▶ https://en.wikipedia.org/wiki/Risk_register#Example

Other Knowledge Areas at a Glance

- **Cost Management**:
  - Key Task: Estimate Costs
- **Quality Management**:
  - Key Task: Perform Quality Assurance
- **HR Management**:
  - Key Tasks: Acquire and Manage Project Team
- **Procurement Management**:
  - Key Tasks: Conduct and Control Procurement
- **Communication Management**:
  - Key Task: Communicate to Stakeholders
- **Stakeholder Management**:
  - Key Task: Identify Stakeholder

Learning Outcomes

- Understand commonly used Business Analysis and Project Management terminology
  - Be able to explain/define terminology
  - Be able to use terminology in context
- Be able to leverage some of the BA or PM tools and techniques
  - BA: Eliciting requirements
  - BA: Identifying stakeholders
  - PM: Defining what is in/out of scope
  - PM: Project Charter
  - PM: Work Breakdown Structure
  - PM: Choose Milestones

References

These slides borrow heavily from Nia McCash's CSC290 slides from Fall 2017.