Requirements Engineering

(Summer 2019)

Prof. Nan Niu (nan.niu@uc.edu)

http://homepages.uc.edu/~niunn/courses

Today's Menu

Last Seminar:
Automated Traceability
Release & Explain ASN2

This Seminar:
Complete ASN3 on
Requirements Prioritization

Next Seminar:
Summary

ASN3: Distributed Req.s Prioritization

- 12 FRs to negotiate, agree, and prioritize
  - These FRs have tensions ➔ satisfying all of them is difficult; however, satisfying only a subset (e.g., 1/4 or 1/3) is feasible
  - Your job is to determine which subset by prioritizing the 12 FRs
- Form your own team where each team shall have 4 to 5 members
  - Each member shall choose one number and one number only: {1,2,3,4,5}

ASN3 (Cont'd)

→ 12 FRs to negotiate, agree, and prioritize

- These FRs have tensions ➔ satisfying all of them is difficult; however, satisfying only a subset (e.g., 1/4 or 1/3) is feasible
- Your job is to determine which subset by prioritizing the 12 FRs

#	1	2	3	4	5
Role	Adjuster	Estimator	Facilitator	Product Owner	Product Owner

ASN3 (Cont'd)

#	1	2	3	4	5
Role	Adjuster	Estimator	Facilitator	Product Owner	Product Owner

→ **Role play**

- Adjuster is to "adjust the collision estimate"
- Estimator is to "estimate the collision costs"
- Facilitator is to "facilitate the req.s. prioritization"
- Product owner is to "deliver the software of high quality"

- Each role has its own needs & desires, but everybody works in a team

ASN3: Distributed Req.s Prioritization

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  - Your job is to determine which subset by prioritizing the 12 FRs
- Role play
  - Draw to play one of the four roles:
    - Estimator, Adjuster, Product Owner, Facilitator
  - Distributed
    - {Estimator, Product Owner} separated from {Adjuster, Facilitator}

ASN3 (Cont'd)

- Report intermediate results & learn a method
  - Some groups will come back together in about 20 minutes
  - Other groups will do so in about 40 minutes
  - Everybody will come back in about 60 minutes
- Upon completion
  - Each student must rate every team member (including himself or herself) with one or more adjectives (new adjectives are encouraged to be added):
    - polite, rational, predictable, confident, trustworthy, dominant, sociable, emotional, cooperative, argumentative, active, formal, competitive …

Analytic Hierarchy Process

- Create n x n matrix (for n requirements)
  - You must decide n for your own team
- Decide relative **value** each pair of requirements
  - For element (x,y) in the matrix enter:
    - 1 - if x and y are of equal value
    - 3 - if x is slightly more preferred than y
    - 5 - if x is strongly more preferred than y
    - 7 - if x is very strongly more preferred than y
    - 9 - if x is extremely more preferred than y
  - …and for (y,x) enter the reciprocal.
- Decide relative **cost** each pair of requirements
  - For element (x,y) in the matrix enter:
    - 1 - if x and y are of equal effort
    - 3 - if x takes slightly more effort than y
    - 5 - if x takes strongly more effort than y
    - 7 - if x takes very strongly more effort than y
    - 9 - if x takes extremely more effort than y
  - …and for (y,x) enter the reciprocal.

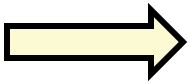
Source: *Adapted from Karlsson & Ryan 1997*

Each team shall fill out 2 matrices

	Req1	Req2	Req3	…
Req1	1	1/3	2	…
Req2	3	1	5	…
Req3	1/2	1/5	1	…
…	…	…	…	…

One for **VALUE**

One for **COST**



	Req1	Req2	Req3	…
Req1	1	5	1/2	…
Req2	1/5	1	1/4	…
Req3	2	4	1	…
…	…	…	…	…

Source: *Adapted from Karlsson & Ryan 1997*