



# Putting It All Together:

## A CIS Completion Workshop

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# What You Can Expect:

## ■ WHO – Introduction

- Who is this Guy?
- Who are *You*?

## ■ WHAT – Review

- What did we just ‘Complete’?
- What is “Systems Analysis”?
- What does a “Systems Analyst” do?
- What is “Systems Lifecycle”?

# What (More) You Can Expect:

## ■ WHY – Justification

- Why is “Systems Lifecycle” Needed?
- What good is “Systems Analysis” anyway?!
  - » Business
  - » Technical

## ■ WHERE – Going Forward

- What do I put on my Résumé?
- Where am I going?

## What (Else) You Can Expect:

- WHEN – What are [my] goals, right *now*?
- HOW – Next Steps
  - How to Learn
  - How to Get a Job
  - How to *enjoy* your Job!

## What I Expect:

- Ask Lots of Questions
  - “Why do [you] say that?”
- Animated Discussion
  - “I (dis)agree, for these reasons...”
- Coherent Thought / Mindful Decisions
  - Logical Analysis — Who, What, Why, Where, When, How
  - Know *Why* you’re Doing/Saying what you Do
- To Learn
  - From You, as much as You Learn from Me

## WHO – Who is this Guy?

- Sr. Product Manager, Oracle Corporation
- B.A. Russian Literature, UC Berkeley ('useful', huh?)
- Graduate of CIS 4-Month Intensive
- *Just like you*, 9 years ago

# WHO – Who are You?

- [International] students
  - *Global Experience*
  - *Highly-motivated to SUCCEED*
- Job-seekers & career-changers
- Focused on developing the skill-sets required to land your desired position

## WHAT – What did we just Complete?

- Studied a cross-section of the Tech Industry
  - Programming, Operating Systems, Networks, Database
- *Not* ‘Mastery’, but **Introduction**
- Each discipline intersects all the others
  - An understanding of each is invaluable
  - Concepts/Problems in each are similar
  - “Systems Analysis” is the *coordinating paradigm*





# Systems Analysis

...The Coordinating Paradigm

## WHAT – What is “Systems Analysis”?

- “The Process of breaking-down a complex problem into component parts,
- “Examining those parts,
- “And reconstituting those parts into a more efficient, more effective whole” –Anthony Minstein, CPIM

# WHAT – What does a “Systems Analyst” do?

## ■ Gather Data

- Interview
- Hands-on Review of (Current) Systems
- ‘10,000 facts’ (“If you only found 1,000, keep looking” –Anthony Minstein, CPIM)

## ■ Analyze

- Identify/Explicate Events, Processes, Data Structures
- Create Cost / Benefit Analyses
- Suggest Alternative Systems

## ■ Make Recommendations

# WHAT – What is “Systems Lifecycle”?

- Requirements
- Analysis
- Design
- Code
- Test (Unit, & System)
- Implementation
- Maintenance
  - *“Robots Are Darling Copper Teakettles In Mufti”(?!?)*

# WHY – Why is “Systems Lifecycle” Needed?

- 60% of Systems-Projects are *Failures*:
  - Failure to deliver on-Time / within-Budget
  - Incomplete Business-Rules understanding
  - Failure to deliver to Specifications
  - Failure of User-Acceptance Test (“UAT”)
  - “Just Doesn’t Work”
- “Hall of Shame” – \$\$ Spent on Failed (non-delivered) Systems
  - PG&E – \$350M
  - DMV – \$300M
  - IRS – \$250M (who pays for this? *we* do...)

# WHY – Why is “Systems Lifecycle” Needed?

- 20% of Project Time *must* be spent in Requirements/Analysis
  - “Investment of more time/energy in analysis will produce more effective design & implementation strategies
  - “Knowledge is the *prerequisite* for successful change
  - “Change without knowledge is *chaos*” –Anthony Minstein, CPIM

## WHY – Why is “Systems Lifecycle” Needed?

- Without a thorough understanding of the Systems Lifecycle it is tempting to skip or short-change *required* steps
  - “Enough talk, let’s get coding!”
  - “We need to ship soon, let’s skip QA/QC”
  - “The Users can UAT when we implement”
- This kind of thinking *directly results* in Project Failure

## WHY – What good is “Systems Analysis”?

- “Okay, but I still don’t *want* to be a ‘Systems Analyst’!”
  - “I just want to be a programmer”
  - “I just want to build networks / Administer systems”
  - “I just want to know-enough so that I don’t get confused when the Tech people talk in meetings”
- Don’t worry...
  - The “SA” position was a relic of the late 70’s
  - Not many “Systems Analyst” titled positions any more



## WHY – “Systems Analysis”? ...However,

- The SA methodology is used **more than ever**
- *Advantage* of understanding SA methodology
  - Business People
- *Necessity* of understanding SA methodology
  - Technical People

# WHY – “Systems Analysis”? **Business...**

- Business people with an understanding of SA have a *huge* advantage
  - Communication: within the Team, & justifying to Management
  - Documents: Prospectus, Requirements, Scope
  - Understanding the Process = Greater chance of Project/Personal Success
- Business people who understand the Systems Life-Cycle have a *huge* advantage
  - Managing Expectations [others’ & their own; “care & feeding” of a good Team]
  - Minimizing Risk
  - & Delivering On-Time/Under-Budget

## WHY – “Systems Analysis”? **Technical...**

- Technical People with an understanding of SA have the wherewithal to succeed
  - Understanding of Scope & Requirements
  - Understanding of Priorities
  - Understanding the Process
  - ...Equals minimize Risk & maximize Efficiency
- Technical People without an understanding of SA over-promise & under-perform

# WHY – “Systems Analysis”? Technical (fine print)...

- Technical people need to understand that Business Rules drive the business, not exigencies in the code.
  - Just because the software/hardware “cannot” do something which is requested, does *not* mean that it doesn’t *need* to be done.
  - IT needs to practice thinking “outside of the box”... figuring-out alternative ways of delivering requirements.
- Technical people need to understand that managing expectations and requirements, done with clear and pleasant communication, greatly improve the possibilities of the Project’s “success”.
  - These Business-People are not the enemies coming-in bearing massive amounts of unreasonable Requirements; they are committed people seeking to improve the Company (and your paycheck!)
  - If the Business-Users don’t have a clear communication established with IT, then the User-Acceptance of the delivered product will *always* be impaired.
- Projects which are badly-managed Ship late, or not at all. Failed Projects are much less fun to work-on, are much more stressful, and pay much less [less bonuses, and more unpaid overtime].

# MOTIVATE – Put your Knowledge to *Work!*

- So... You've *practiced* Systems Analysis
  - Sig's Project
- You *know* why it's *Useful*
  - You can use SA to Re-Engineer Business Processes
  - You can use SA in the rest of your life too
    - » Organizing your Recipes or MP3's... or make your daily chores easier ☺
- Now... Let's get a **Job!!!**



# Résumé & Job-Search

...Next Steps & Job-Tracks

## WHAT – What do I put on my Résumé?

- Taught by *practicing Professionals*
- ‘Real-world’ experience is invaluable
- You *cannot* attain that level of experience from books (or classrooms) alone

# WHAT – What do I put on my Résumé?

- Compare:

- A fresh-from-college B.S. in CompSci needs ~ 6 months of training to get up-to-speed with their Job Description... ie, “boot camp”
- “[*New graduates*] need to forget 4 years of outdated concepts and technology, and start learning what’s really *being used*” –Debbie Richardson, vp Apps.IT, Oracle Corporation

- Here at UC Extension, we skip *directly* to those 6 months – *Mention this in your Cover Letter.*



# DECIDE – Where am I going?

- It's **TRUE**: With 2 years of Experience, it *doesn't matter* what your Degree is in! [“Russian Literature”(?!!!) ☺]
- So, *Focus* on getting that first job
  - “Mild”: Expand your current job; try for a position in the Department you're interested
  - “Spicy”: Switch jobs! “Jump-in”, “Total-immersion”
  - Take *anything* that gets you closer to where you want to be
- Focus on the Job you'll get *after* your next job
  - “What's the job I *really* want to be doing?”
  - “What job do I have to get first, to get the Experience I need, to get my *Dream Job*??”

## WHEN – What are [my] goals, *right now*?

- **ASK:** Do I want to specialize in Business, or Technology?
- **ASK:** Do I want to get an entirely new job?
- You can move in steps, or make a big career-change all at once.
  - Small steps can be *slow*, but it's less *stressful*.
  - Big change is *immediate*, but total-immersion can be very *disorientating*.
- Do I want to learn more about my current job?
  - Make my current job more interesting!
- Do I want to expand my current job-description?
  - Something new, more responsibility, better career-path!

## WHEN – What are [my] goals, right *now*?

- You need to be
  - a) Energetic,
  - b) Motivated, &
  - c) Constantly-Learning
- **With these 3, plus confidence in yourself, there is *nothing* you cannot do or achieve.**

## HOW – Next Steps ...Decision

1. *Decide*: Which Technological Field, or Systems-Lifecycle Step do you like best?
  - Why?
  - What about it do you like?
  - How does that make you feel?
2. Focus on that one!

## HOW – Next Steps ...Decision

1. Now – Focus on getting:
  - *TWO YEARS of EXPERIENCE*
  - Your “Dream Job” will be the Job *after* your Next Job... (*or the one after that!*)
2. Get Training and/or Temp/Contract Experience in the Field you *like!!!*
  - Get *Qualified* so that you can GET your Dream Job!!!

## HOW – Next Steps ...Education

- Further education, training, self-preparation, Certification
  - **Business Classes**
    - » Systems Analysis
    - » Project Management
    - » Accounting
  - **Business Certification**
    - » CPIM, PMP ([www.pmi.org](http://www.pmi.org))
    - » CPA

## HOW – Next Steps ...Education

### ■ Further education, training, self-preparation, Certification

#### – **Technical Classes**

- » VB, MS Access *[beginning]*
- » Java, VC++, Oracle *[advanced]*

#### – **Technical Certification**

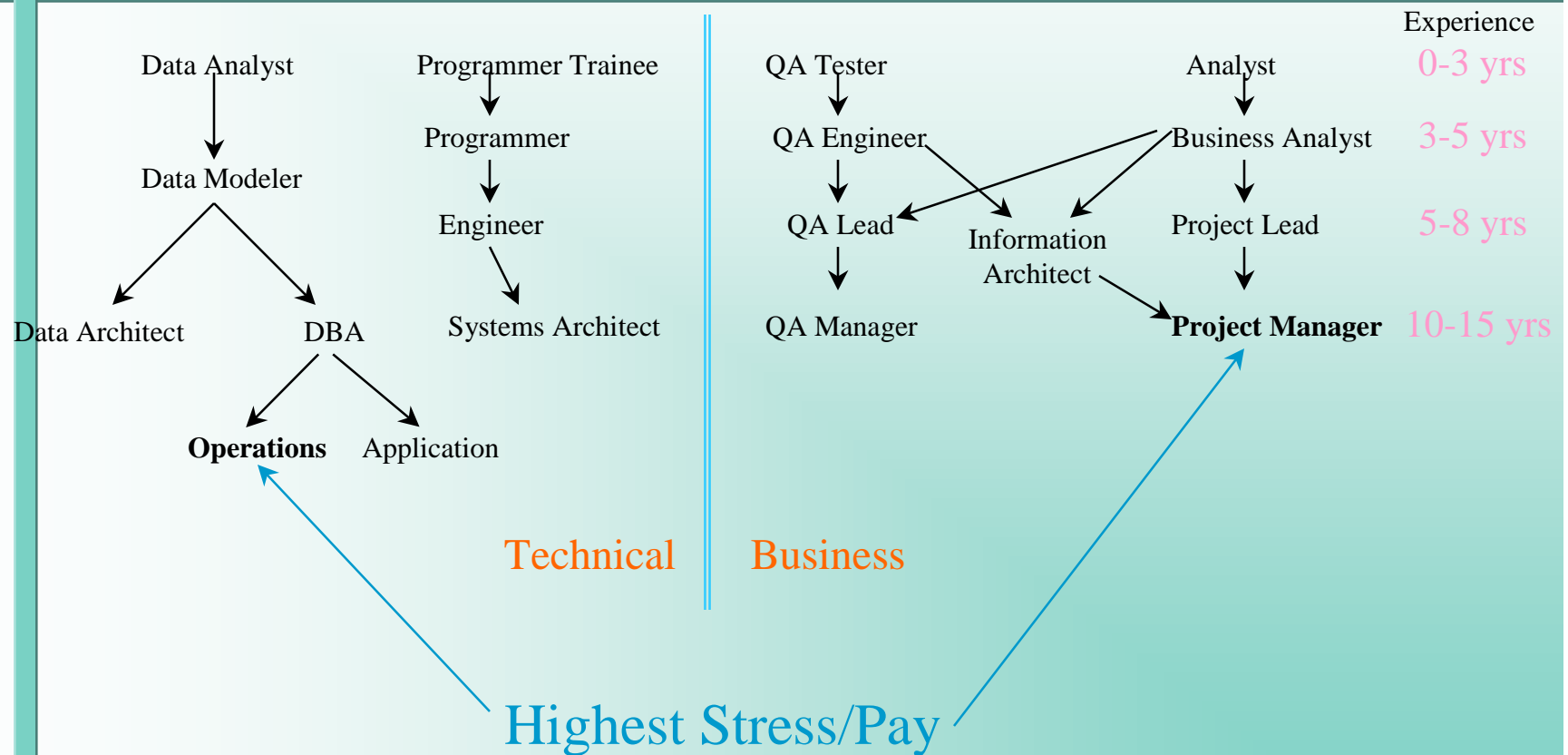
- » MCSE, RHCE *[beginning]*
- » CCNA, OCP / OCDBA *[advanced]*

## HOW – Know Your Outcome

- If you have no technical experience on your Résumé ...
  - Do NOT try for “Advanced” jobs!
  - You won’t get hired... or Worse: you will *not succeed* if you do get the job!!!
- With 1yr of training & practice you *can* get a job!!!
  - MS Access, Visual Basic, MCSE – *Perfect!!!*
  - Oracle DBA, C++, Java, Cisco ... *NO WAY!!!*



# Job Tracks



—(from) Anthony Minstein, CPIM

## HOW – Next Steps ...Learning

- How to Learn

1. Model Successful Performers
2. Get Personal Experience – Volunteer!! (Internship)
3. Have a Purpose – *Know your Result*

- Don't Give Up!!

1. Experiment – if one way doesn't work, try another!!
2. Don't worry about “messing up” a few times (Abraham Lincoln, etc.)

# HOW – Next Steps ...A Job!

## How to Get a Job

1. Model Successful Performers – Interview, Books
2. Get Personal Experience
  - VB/MSAccess on your home-computer,
  - Earn Certification, etc.
3. Have a Purpose – *Know* what job you’re going to get
4. Experiment – Don’t worry about “messing up” a few interviews
5. **Don’t Give Up!!**

# HOW – Job-Hunting

## Job Ideas:

1. “Temp”/Contract Employment
  - Real-world Experience, Résumé-building
  - Robert Half Inc., Western Technical, [www.dice.com](http://www.dice.com)
2. Keep your Ears open!!
  - Learn what Job Titles *really* mean
  - Decide what Company culture you like best
3. Put in an Application at a place where you’ve *already* worked!!!
  - Discover the *unpublished* Job Listings
  - You’ll have a “perfect” Cover Letter!

# HOW – Networking

- No, not routers & cables & star topologies... ☺
- “Networking” = Talking to people!
  - Ask them about their jobs!
  - Tell them what you are interested in
  - Tell them you are looking
- KEEP IN TOUCH with your Classmates!!!!
  - You will find jobs that you don’t like... but *THEY MIGHT LIKE!!*
  - They will find jobs they won’t like... but *YOU WILL LIKE!!!*
  - You’ll ALL get jobs *much faster!!!*

## HOW – Next Steps ...A Job!

### How to Enjoy your Job!

- Focus on:
  - » Your Dream Job – the job *after* your next job!!!
  - » Keep: “Continuous Learning”, “Continuous Improvement”, “Continuously New”
  - » Dive in!! *Something* about the job will be fun ☺
- Sometimes you might have to take a job you don’t exactly like...
  - » ...but if it gets you towards your Dream Job, Go For It!!!



# Technical Interview Questions

Things you *must* know...

# Interview Questions

- Referential Integrity
  - Maintaining the constancy & currency of the Parent-Child relationship between 2 tables
  - Cascade UPDATE/DELETE, etc.
- 3NF
  - No transitive dependencies
  - All non-key attributes are *functionally* dependent on their Primary Key (PK)
  - Not best architecture for OLTP... 2NF can be superior



# Interview Questions

- Logical / Physical
  - Logical: Conceptual/Context/General
  - Physical: Implementation/Hardware/Specific
- Systems Life Cycle
  - **“Robots Are Darling Copper Teakettles In Mufti”**

# Interviewing...

- Know WHY you want to have this job
- Know WHAT you will be gaining from it
- Know HOW hard you'll work to succeed
- Be WILLING to do what it takes
- Keep focusing on your *Dream Job!!!!*

# Recommended Texts

- *What Color Is Your Parachute?*, Bolles [The *best* job-hunting guide]
- *Peopleware*, DeMarco & Lister [Best-practices for working with & managing technical people]
- *The One Minute Manager*, Blanchard & Johnson [Terrific prioritization & communication skills]
- *How to Make Meetings Work!*, Doyle [fantastic consensus-building, team-leadership + *best* JAD]
- *Mythical Man-Month*, Brooks [Project Management classic text]
- *Rapid Application Development*, McConnell [Project Management pitfalls & remedies]
- *Systems Analysis & Design*, Modell [Excellent SA text]
- *Code Complete*, McConnell [Programming best-practices]
- *C Primer Plus*, Wiley [Excellent C text]
- *Running Linux 2nd Ed.*, O'Reilly Press [Excellent Linux hands-on]
- *Oracle PL/SQL Programming*, Feuerstein [The PL/SQL Guide]
- *Oracle DBA 101*, Theriault/Carmichael [Good DBA intro text]
- *Programming Windows95/2000*, Petzold [The Windows guide]

# It's Up to *YOU*

- Enjoy your Career!!!