Agenda

- Moderator
  - Bill Newhouse, NIST
- Panelists
  - Paul Wang, CSU (session proposal submitter)
  - Dan Stein, DHS
  - Corrinne Sande, Whatcom Community College
- Presentation [30 min total]
  - DB development/deployment progress
  - Application domain(s): web, course design/development, others
  - Collaborative effort
  - Contribution to the NICE workforce development framework
- Next steps
- Q&A [15 min]

Building NICE Database for Government, Industry, and Academia

Moderator:
Bill Newhouse, NIST

Panelists:
Paul Wang*, Endowed Chair, CSU
Dan Stein, DHS
Corrinne Sande, Whatcom Community College

History (Bill)

- Nice database group started Nov. 2017
  - Paul Wang created NICE database for an NSA grant
  - Corrinne Sande was planning to create a NICE framework database
  - Alan Watkins has helped push DHS to apply a database structure

Current Status

- About 20 members as of Feb, 2018
- Database shared with academia, industry, and government
- Expand database from relational to non-relational database (Amazon DynamoDB)
- CyberWatch West (nice-workroles), NICCS (nice-framework)
- Use database for cyber curriculum/training development
- Created sister-database - PCI/DSS and shared with companies such as Coco Cola and TSYS.

Mission

- To provide a NICE framework database for
  - Website to generate dynamic content
  - Be able to search by category, work roles, and KSAs
  - Map with CAE and other frameworks
  - Assist in designing cyber curriculum/training
  - Broader the NICE community

Panel Introduction

- Paul Wang*, Endowed Chair, CSU
- Dan Stein, DHS
- Corrinne Sande, Whatcom Community College

Paul Wang

- Build NICE framework DB for cyber curriculum development
  - Received an NSA grant
  - Development a MS in cyber management program.
  - Developed a number of cyber courses
- Migrated the NICE DB to Amazon DynamoDB (non-relational)
- Presented at NICE, NCS, and CISSE conferences
- Shared the database with academia, industry, and government

NICE Databases - CSU

CCT441W-A.NICE_DB - dbo.Category | SQLQuery1.sql - C...ng_shuangbao (54))

	ID	Name	Code	Description
▶	1	Securely Provision	SP	Specialty areas concerned with conceptualizing, designing, and b...
	2	Operate and Maintain	OM	Specialty areas responsible for providing the support, administrati...
	3	Oversee and Govern	OV	Oversight and Development - Specialty areas providing leadershi...
	4	Protect and Defend	PR	Specialty areas responsible for the identification, analysis, and mit...
	5	Analyze	AN	Specialty areas responsible for highly specialized review and evalu...
	6	Collect and Operate	CO	Specialty areas responsible for specialized denial and deception o...
	7	Investigate	IN	Specialty areas responsible for the investigation of cyber events a...
*	NULL	NULL	NULL	NULL

994	Securely Pro...	Risk Manage...	Securit
995	Securely Pro...	Risk Manage...	Securit
996	Securely Pro...	Risk Manage...	Securit
997	Securely Pro...	Risk Manage...	Securit
998	Securely Pro...	Risk Manage...	Securit
999	Securely Pro...	Risk Manage...	Securit
1...	Securely Pro...	Risk Manage...	Securit

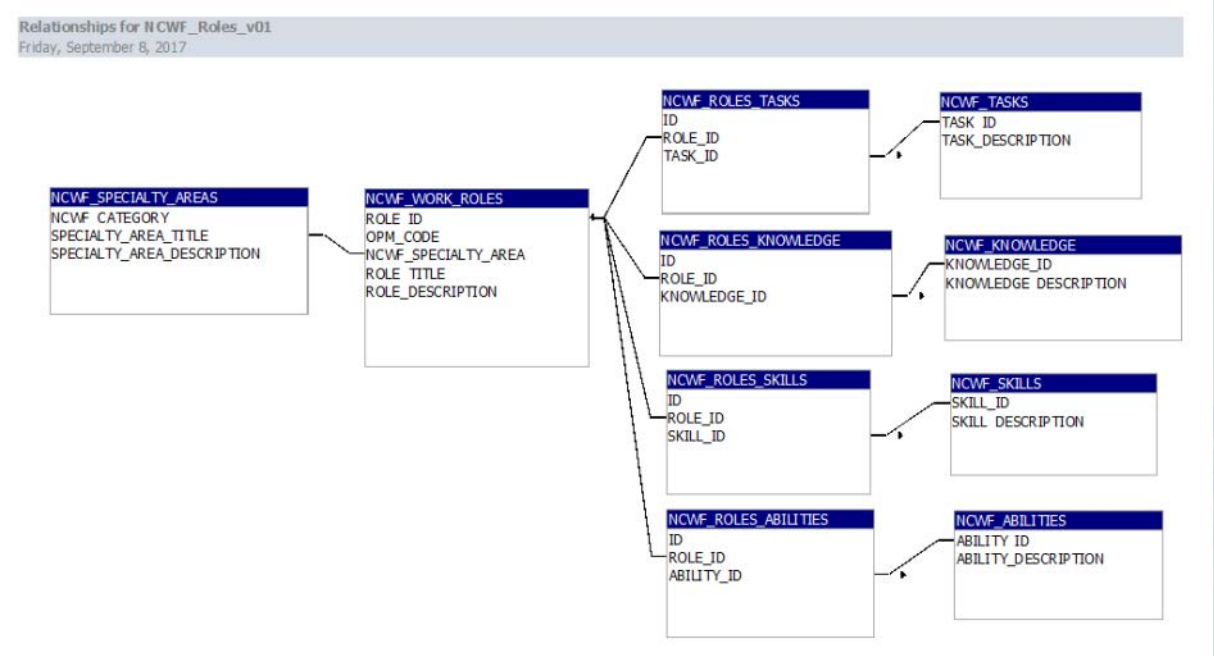
Query executed successfully.

ID	Ca...	Name	Code	Description
1	1	Risk Management	RSK	Oversees, evaluates, and supp
2	1	Software Development	DEV	Develops and writes/codes ne
3	1	Systems Architecture	ARC	Develops system concepts an
4	1	Technology R&D (TRD)	TRD	Conducts technology assessn
5	1	Systems Requirements Planning	SRP	Consults with customers to g
6	1	Test and Evaluation	TST	Develops and conducts tests
7	1	Systems Development	SYS	Works on the development pl

ID	S...	Name	Code	Definition
1	1	Authorizing Official/Des...	SP-RSK-001	Senior official or executive with
2	1	Security Control Assessor	SP-RSK-002	Conducts independent compre
3	2	Software Developer	SP-DEV-001	Develops, creates, maintains, ar
4	2	Secure Software Assessor	SP-DEV-002	Analyzes the security of new or
5	3	Enterprise Architect	SP-ARC-001	Develops and maintains busine
6	3	Security Architect	SP-ARC-002	Ensures that the stakeholder se
7	4	Research & Developme...	SP-TRD-001	Conducts software and system

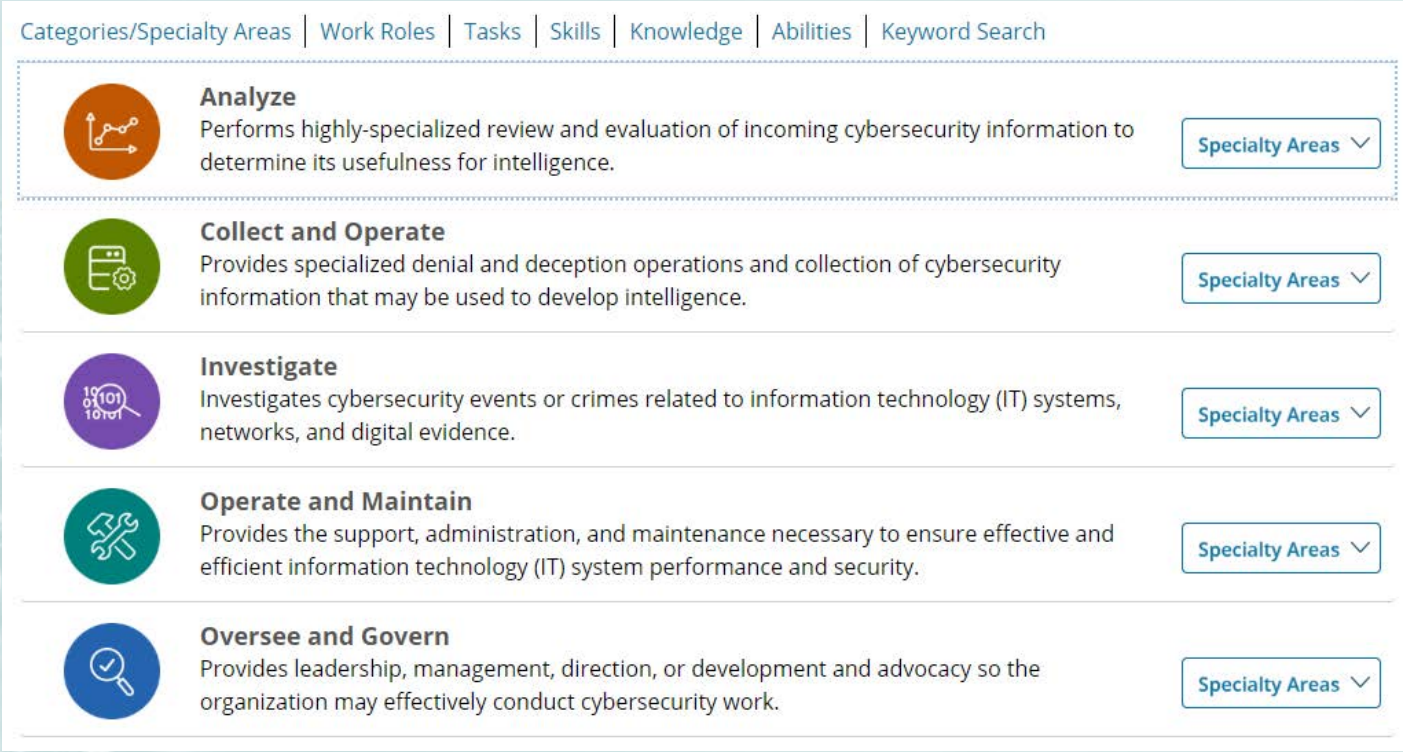
NICE framework database for NSA cybersecurity curriculum development grant (Paul)

NICE Databases -



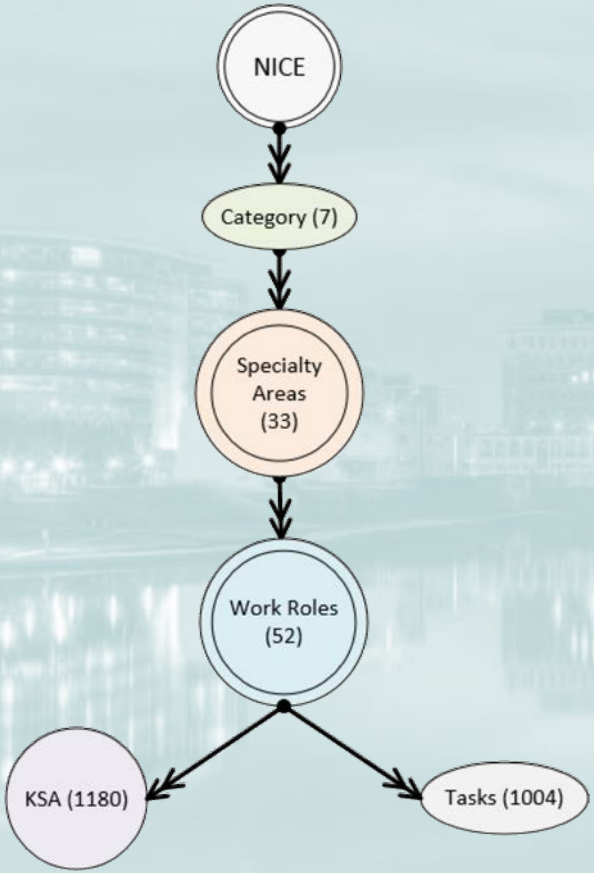
Defined many queries with mock-up pages (Alan)

NICE Database - NICCS



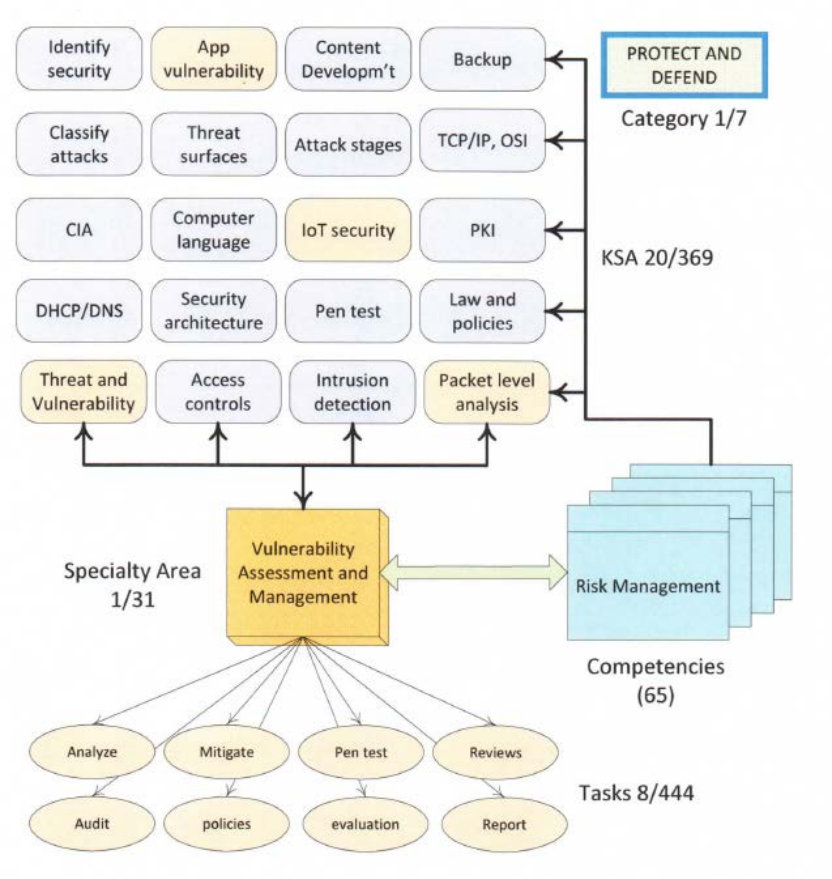
DHS website to allow search tasks and KSAs

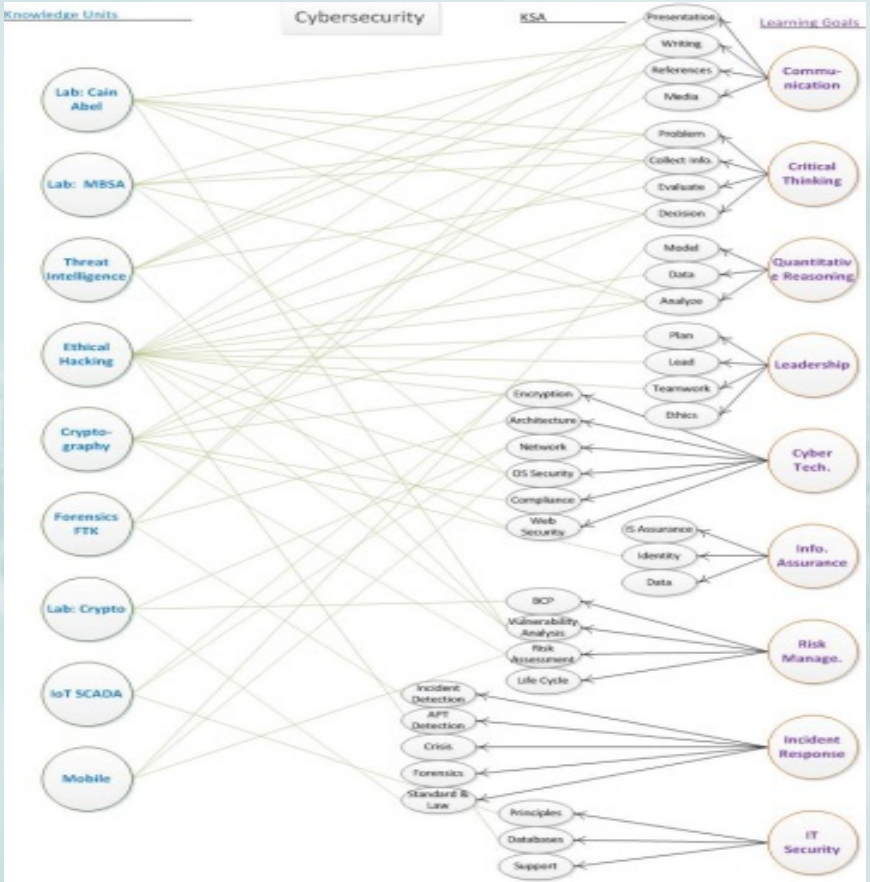
Framework and Mapping



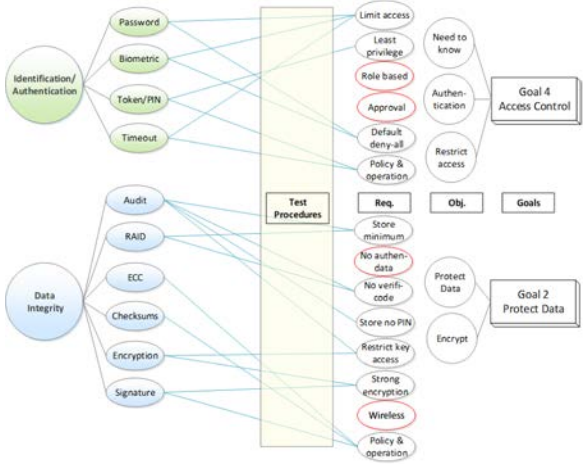
	Goal/Competency/Description	Learning Demonstrations									
		1	2	3	4	5	6	7	8	9	10
5.1	Encryption: Knowledge of procedures, tools, and applications used to keep data or information secure, including public key infrastructure, point-to-point encryption, and smart cards.										
5.2	Enterprise Architecture: Knowledge of architectural methodologies used in the design and development of information systems, including the physical structure of a system's internal operations and interactions with other systems and knowledge of standards that either are compliant										
5.3	Computer Network Defense : Uses defensive measures and information collected from a variety of sources to identify, analyze, and report events that occur or might occur within the network in order to protect information, information systems, and networks from threats										
5.4	Operating System Security: Identify potential threats to operating systems and the security features necessary to guard against them.										

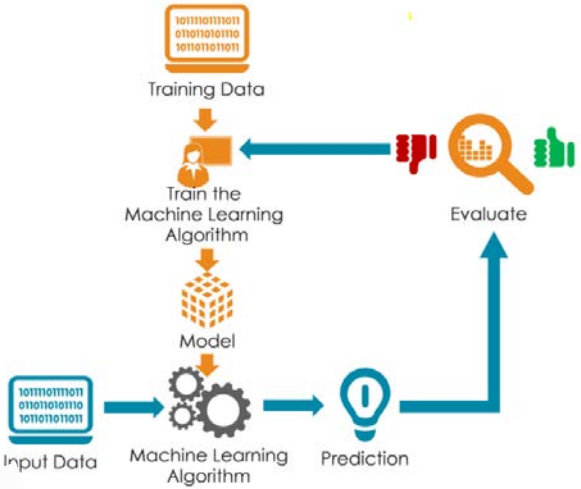
User NICE DB for Cyber Course Design



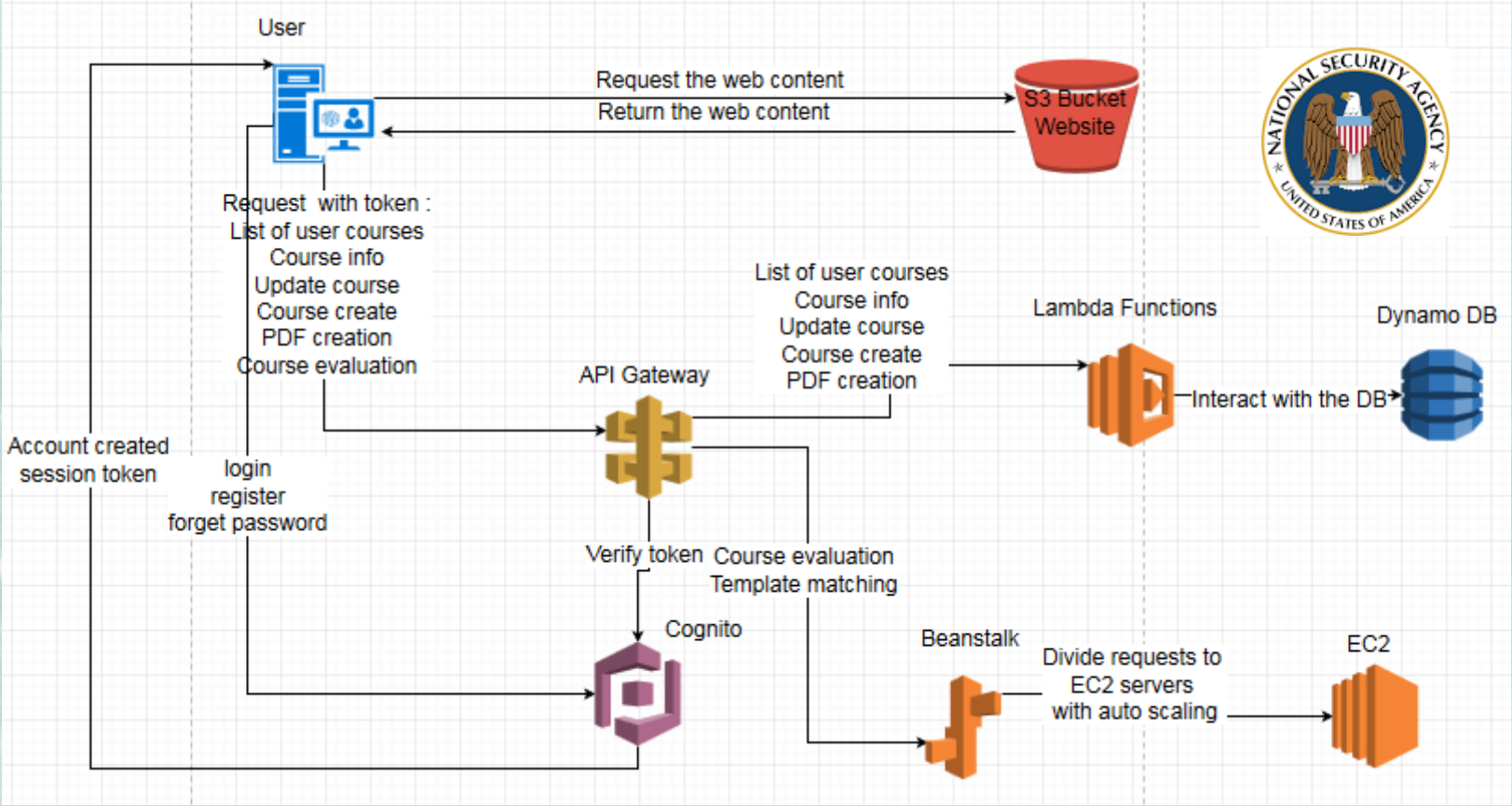


Use AI to Develop Cyber Curriculum

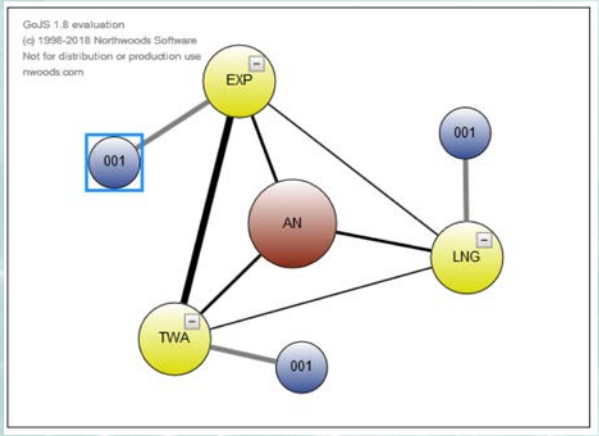


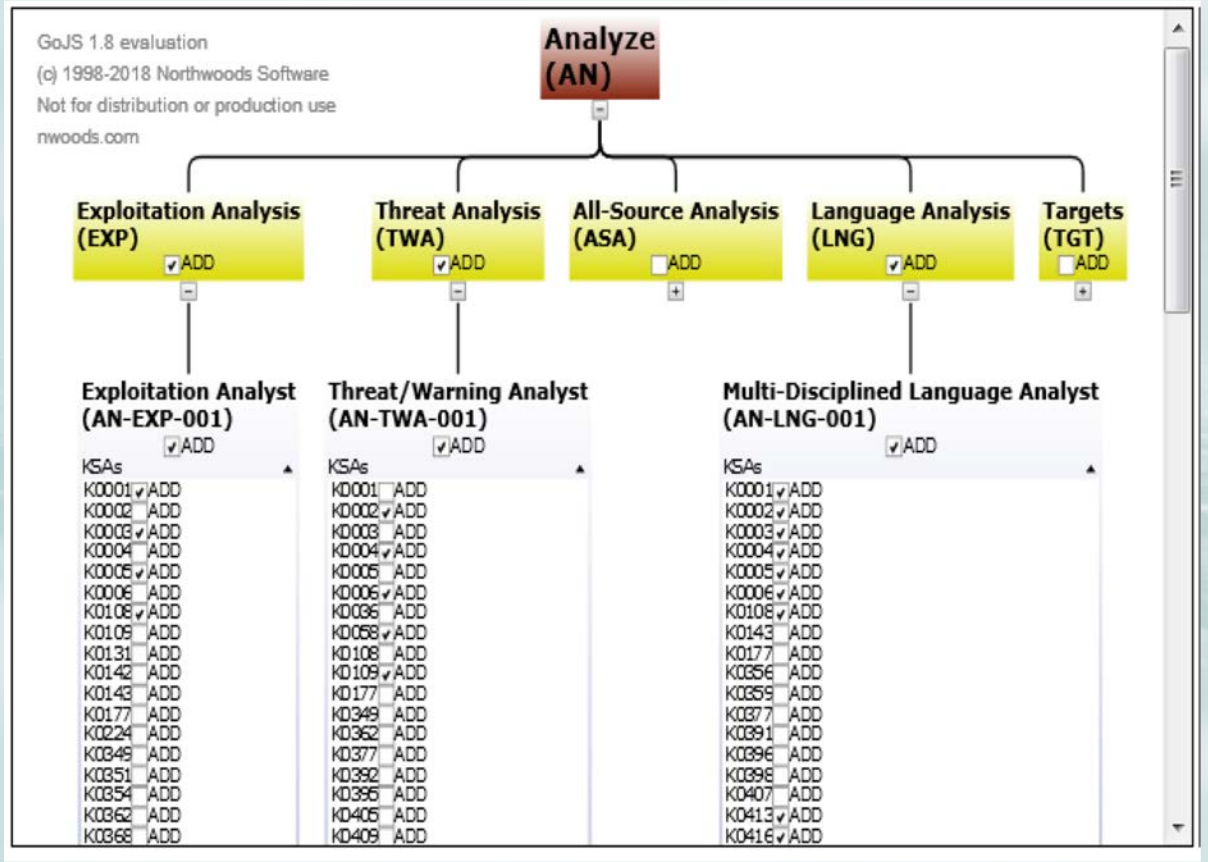


AWS Architecture

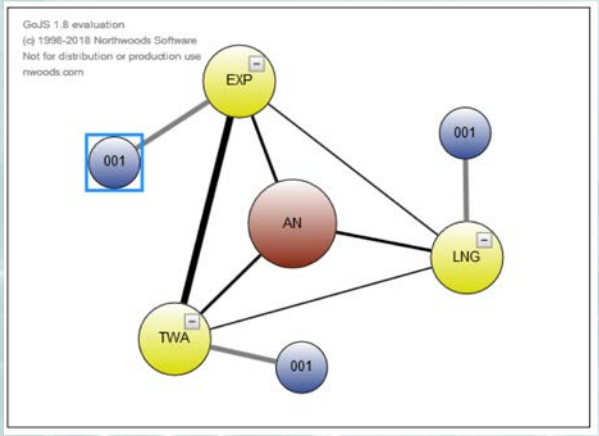


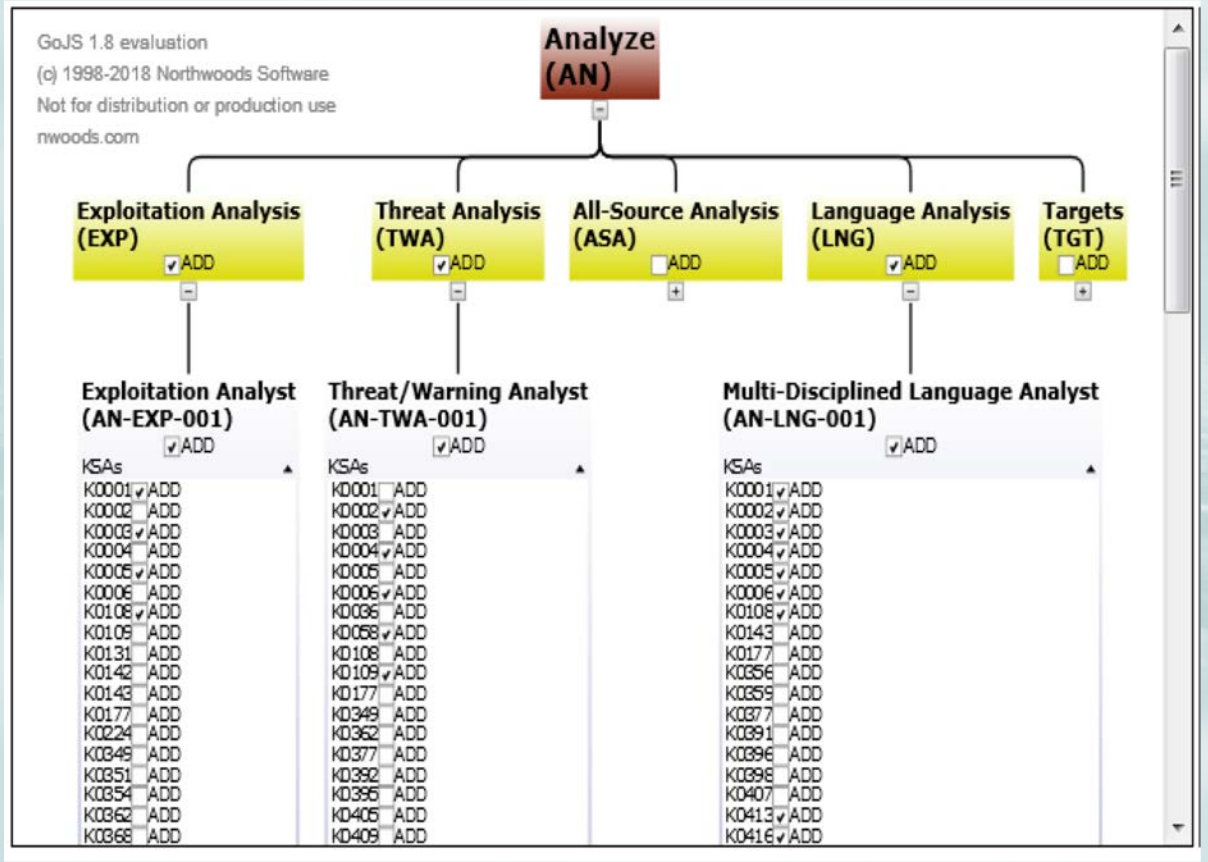
Curriculum/Training Design





Curriculum/Training Design





viCyber project website

https://vicyber.columbusstate.edu/

NICE framework database

paul.wang@computer.org

DAN STEIN, DHS

https://niccs.us-cert.gov/workforce-development/cyber-security-workforce-framework

CORRINNE SANDE

http://cyberindustry.org/workrole

Next Step

- Mobile DB
- NoSQL DB
- New models and views
- Applications
  - Workforce development
  - Mappings with other frameworks
  - AI and knowledge base

Q&A