STUDENT DESIGN TEAM SCENARIOS

In the spring of 2022, NCSU design students will make user interface design prototypes for what a "TaiLored Daily Report" (TLDR) could look like for various individual analysts.

Each design team will be given a user persona of a **type of analyst** in a particular **scenario** within a specified **use case**. The persona is intended to provide an example of what that type of analyst's work might look like in the given situation, but further research and interviews with real analysts will inform specific tasks and preferences to be explored for the design of a TLDR prototype that takes into account the different individual characteristics of at least two users in the same type of job role performing the same tasks for that particular scenario. To aid in the design and give students an idea of the kinds of data an analyst may work with, students will also be given examples of different data types that could be involved in an analyst's tasks.

Below are the personas and situations for each team.

- Ron is a **language analyst** specializing in analyzing information in the foreign language "Kobian". He has been asked to help on a **topic that is unfamiliar** to him: Kobian leadership decisions following a visit by the Kobian President to China (where we are pretending the **Nixon administration** is the Kobian leadership). See below for more on this use case.

- Chloe is an **analyst reporter** who has been analyzing and reporting on the operations of multiple Violent Extremist Organizations (VEOs) for some time now. This is a **topic that is familiar** to her, and she is currently working to **predict the nature of a terrorist threat that involves a coordinated attack being planned by three separate terrorist organizations in three US cities: Boston, New York and Atlanta**. See below for more on this use case.

- Nyah is a **search and discovery analyst** who has been called in to surge on a **crisis situation**: **an apparent mass kidnapping of several employees from a fictional company called GAStech**. A fictional organization known as the Protectors of Kronos (POK) is suspected in the disappearance. Please see below for more on this use case.

I.   RON

Language Analyst (LA) Job Description: Language analysts are responsible for analyzing foreign language communications and applying their understanding of nuance, context, cultural overtones, and dialect to contribute to products that meet the intelligence needs of decision-makers and analysts. These needs can include both time-sensitive requests requiring a quick response and longer term strategic interests requiring greater depth and breadth of analysis on a continuing basis. LAs usually work within a regional or topical focus area (or both), with tasks that may include finding and prioritizing information of intelligence value within large

volumes of foreign language communications data; transcribing, translating or summarizing foreign language materials and adding necessary context; quality reviewing the work of other LAs; writing or reviewing intelligence reports based on foreign language materials; researching and developing new analytic techniques. Language analysts are also required to maintain their language skills through regular training and testing requirements. Every language analyst position requires a different balance of tasks and responsibilities.

Ron's Persona, Situation, and Use Case Scenario: Imagine that there is a foreign nation called Kobia whose current President is Richard Nixon. Ron is a language analyst at the Big Government Intelligence Agency (BGIA) who specializes in the Kobian foreign language, and is a subject matter expert on Kobian nuclear weapons development. However, Ron was just asked to lend his Kobian language skills to assist an office that focuses on the leadership decisions of the Kobian Nixon administration, which is a subject he doesn't know much about. The office tells him that they are short-staffed, and following a recent important visit by Kobian President Nixon to China, the office needs him to triage very large amounts of foreign language communications that are primarily speech- and text-based data from sources that may be connected to the Nixon administration in order to find out as much information as he can about events related to Kobian diplomacy towards China following the visit.

Ron never knows what new data he may see or hear on any given day, but he hopes to find some interesting pieces of information that will shed light on the subject matter at hand. Unfortunately he doesn't really know what specifically he is looking for. He is also worried that he will miss something valuable due to his lack of expertise in Kobian diplomatic leadership matters. Further complicating his situation, there is much more data than he could ever get through, and most of it is not related to the topic he has been asked to look into. Even without looking for better sources of intelligence or trying to improve his analytic techniques, it is impossible for Ron to keep up with the influx of data, which he mostly goes through in roughly chronological order from where he last left off (though he might also use other tactics to decide how to prioritize where to start each day, depending on what he's found).

If he finds information of intelligence value, Ron uses a tool to mark the data as important enough for translating or summarizing in English, and will sometimes bundle pieces of related data together so that other analysts can use the information in their analysis. In this case, because he is not familiar with the subject, he asks a senior language analyst and other subject matter experts in the office who are familiar with the topic to quality review his work and provide mentorship and guidance on the culture and people involved in the Kobian Nixon administration. Pausing to ask questions and get feedback interrupts his triage workflow, but Ron knows how important it is to get translations right and understand the context behind them. He also wants to stay up to date on Kobian affairs by reading publicly available news and other classified intelligence reporting that may be related to Kobian leadership decision-making, and he wants to stay in touch with other analysts across the intelligence community who may have related information, but Ron just feels he doesn't have the time. 8 hours have flown by and he needs to

get home, so he notes to himself where he should probably pick up tomorrow, and gets ready to leave for the day.

More Context and Data Examples for the Nixon Administration Use Case

This [short video](#) (less than 4.5 minutes) gives a good idea of data, a tool, and type of task related to the Nixon administration use case. It gives a brief window into what a language analyst may do with one example of a tool and some types of data.

Sample data related to the Nixon use case:
- Example of an [audio recording](#) (for example from a phone conversation or a recording of a whole room) that a language analyst might hear related to the Nixon administration (imagine this is in a foreign language). As you can see from the video, there may also be associated machine-generated speech-to-text output which is imperfect (imagine that too would be in a foreign language)
- Examples of [documents](#) (in this case, the Presidential Daily Diary) that a language analyst might see related to the Nixon administration (imagine this text is in a foreign language). Something like this might be translated into English if it contains information of intelligence value.
- Example of ["scan notes"](#). This is like text-based data produced by analysts **in English**, as informal notes to attach to foreign language data files when they want a quick way to document what the data is about while "scanning" or triaging data. This is in contrast to a formally produced translation which is usually done only after a file has been identified as containing intelligence value (see below).
- Example of a [translation](#) (a transcript in English of original foreign language material). While this example shows what looks to be a verbatim translation of an audio conversation, sometimes "gists" (summaries of some portions of the data) are also done when a foreign language data file may contain sections of intelligence value but a verbatim translation of the entire file is unnecessary. Translations can of course also be done for text-based data like the Presidential Daily Diary listed above, if we imagine that that document was originally in a foreign language.
- Example of an [intelligence report](#). LAs may also be reading intelligence reports produced by other analysts and other organizations (in addition to information on the open internet) to understand more about their topic and context. LAs do translations of foreign language data which may also be listed as a source in intelligence reporting.

In a real world situation in the present day, Ron would likely have access to other types of data in addition to the samples above, like emails, texts, chats, social media posts, videos, and images, as well as associated "metadata". Should examples of such data be necessary, we can provide some samples, though they may not specifically be related to the use case.

II.   CHLOE.

Analyst Reporter Job Description:[1] The Analyst Reporter prioritizes, assesses, evaluates and reports a diverse array of information obtained from a variety of sources to customers. In addition to writing reports, a reporter will assess that value of the above mentioned information and determine if it's worth reporting, will search for reportable and contextualizing information, and will be familiar with organizational reporting policies.

Chloe's Persona role: As an analyst reporter supporting BGIA's counterterrorism mission, Chloe spends her days analyzing and reporting on the operations of multiple Violent Extremist Organizations (VEOs). She listens to news radio during her 45 minute commute to work, and arrives at her desk around 8AM each day. She checks her email, first looking for anything that requires her immediate attention (such as taskers or major terrorism related activity tied to the groups she follows). She looks for and reads any relevant intelligence summaries or situation reports (SITREPS), and then for emails where she is the primary recipient (as opposed to just being on a group email alias). She gets particularly excited when she receives report feedback in her inbox, letting her know customers (i.e. other analysts throughout the IC, policymakers, diplomats, military personnel, etc.) liked or used her reporting. She saves those in an "I Love Me" folder that she'll refer to come promotion time. However, that information is also valuable because it's one of several sources that provides insights into what customers are potentially interested in right now. This will help her focus her day, and triage data and information during her analysis.

While triaging her email, the occasional co-worker briefly stops by her desk to relay admin or small operational "nice-to-knows." Once she's checked the important content in her inbox, she searches for, skims, and reads community-wide reporting on VEOs in her portfolio in order to help maintain situational awareness. After reviewing IC reporting and relevant news, she checks for new BGIA reports "in the pipeline" to see what her team members are working on, and if anything is related to a report she started the day before. She reviews the recently created gists and transcripts to identify emerging storylines that satisfy customer needs and therefore need to be reported. Depending on what she finds, she may run follow-on queries to gather additional information for inclusion in her reports.

Chloe is always looking for information that will enable customers to make decisions and take actions that advance the country's strategic, tactical, and operational foreign policy and national security objectives. These objectives are either provided to her by her leadership, her customers, or inter/intra-agency partners, or she finds them on her own by reaching out to other organizations or working-groups. Many of these documents are published on internal or external websites. The more detailed documents are located on internal IC websites, but higher-level strategic documents, like the National Defense Strategy, are found on publicly accessible government sites. Identifying and gathering reportable information quickly, while efficiently coordinating and de-conflicting her work with her teammates (not to mention getting sign-off

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[1] Derived from job description provided by SAIC: https://jobs.saic.com/jobs/6540142-target-analyst-reporter-4

from her editors) before she leaves for the day, is the name of the game. Knowing what information is available, being able to determine its importance, reporting it quickly, accurately, and clearly, while knowing what her customers want to do, are able to do, and are willing to do, are keys to a successful day.

Use Case

Chloe and her team have been tasked to provide indications and warnings of potential terrorist actions against US interests. Many of the terrorists have never been identified, and are scattered all around the globe. They are members of different but often linked organizations and can be called upon at any time to unleash acts of terrorism of many different sorts.

Chloe is faced with lots of "dots" in the form of intelligence data that come from many different sources. Her first task is to decide which dots she should be trying to connect and then to make inferences about what these connections may mean. This is the basic step in generating hypotheses about what these connected "dots" might mean. She may of course generate more than one hypothesis concerning possible threats. Deciding which hypothesis seems most favored by the "dots" she has connected involves another important task. This task involves constructing defensible and persuasive arguments in establishing the relevance, and credibility of the "dots" she is offering as evidence on her possible hypotheses. Her favored hypothesis may indeed be imaginative, but no one will act on it if her arguments are not defensible and persuasive. The act of constructing defensible arguments also aids in the generation of new lines of inquiry and evidence and possibly entirely new hypotheses. In short, hypothesis generation and argument construction go hand in hand.

Her assignment involves a situation in which terrorists are embarking upon a scheme that, if successful, will bring about great destruction, and considerable loss of life. Her basic task is to predict the nature of the terrorists' threat, including when and where it will be carried out. While she would love to have direct evidence from persons inside terrorist organizations who alert us to the specifics of the terrorist actions that are being planned, those sorts of "nuggets" are rare. Instead, she must rely upon many "dots" in the form of "lower grade evidential ore" which, when imaginatively and plausibly connected, may allow her to infer the capabilities and intentions of terrorist groups. The information produced by intelligence community, as well as open source information, make up the noise she must sift through in order to find "dots" to connect in order to generate hypotheses concerning what action or actions the terrorists have in mind.

Chloe's assignment involves a coordinated terrorist attack in three US cities: Boston, New York and Atlanta. Persons directly involved in any one of these three terrorist actions have no awareness of the other actions that are being planned. All they will know is when their own terrorist action will take place. The three assaults being planned involve the activities of several terrorist organizations: al Qaeda, HAMAS. and al-Jihad. The latter two organizations are known to have links to al Qaeda.

NOTE: Details of the ficitional terrorist actions being planned can be found in the JMIC "Sign of the Crescent" supplementary materials. The names given to terrorists in this scenario are fictitious. Assume that the date on which their assignment takes place is toward the end of April, 2003.

More details on the use case:
https://drive.google.com/drive/folders/1nq9zdt7X2HpSE9hgYYsaW-i1n0QzRn86?usp=sharing

III.   NYAH

Search and Discovery Analyst (SDA) Job description:[2] The SDA searches for and analyzes collected intelligence and open-source data to maintain up-to-date knowledge of their portfolio, and all matters related to relevant actors and activities of interest. Additionally, they develop techniques to gain more information on relevant actors and activities of interest. SDAs need to understand various technologies and applications and subsequently knows how to: exploit foreign communications and communication systems to identify, collect, analyze, process and disseminate information to address IC foreign intelligence requirements; identify reportable intelligence information and build profiles of actors of interest; leverage appropriate databases for targeting, tasking, and analysis; perform sustained target analysis and enhancement through the use of analytic techniques; analyzes data to identify new sources of information; perform research using open source and classified sources to develop comprehensive baseline profiles of designated portfolios; and knows how to prioritize mission requirements, modify current collection to minimize non-reportable information, and maximize bringing in reportable information, and enable new collection to close identified gaps.

Nyah's Persona role: Nyah is a senior SDA who supports a variety of BGIA missions. She is a highly organized, focused, and detail-oriented employee. Nyah serves on a "Surge Team" that's called in (usually by BGIA management) for crisis situations involving actors that don't fall under usual BGIA portfolios. For this reason, she makes it her business to stay on top of the latest analytic techniques and sources, as well as potential opportunities for collaboration throughout BGIA's extended enterprise. These techniques may be new ways of searching for information, new ways of using tools, or new structured thinking techniques. The early stages of a surge are often very chaotic. Nyah needs to get an understanding, and maintain situational awareness, of the event itself (which may still be ongoing), know the customers' needs (policy/decision makers, analysts throughout the IC, military personnel, etc.) and what they're trying to achieve, identify intelligence gaps, figure out what resources are needed to satisfy customer needs, know which analysts are doing what, produce intelligence reports, and keep up with customer feedback and requests for information.

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[2] Derived from: https://clearedjobs.net/job/target-digital-network-analyst-fort-meade-maryland-868907

There are a lot of moving parts during a surge, so information can become stale or "overcome by events" very quickly. As time passes (sometimes days, other times weeks), the surge becomes less chaotic, but there's still a lot to discover about the portfolio and actors involved. As a result, much of the information coming in during the surge will either be new, or needs to be contextualized in order for Nyah and other analysts to make the most use of it.

When it comes to search and discovery, Nyah has a myriad of search tools and datasets at her disposal. However, it's rare that a single query or tool will provide a complete answer to a customer need or question. Additionally, it's also rare that a customer's question will come in a "ready to search" format. While there's no one standard workflow or approach to search and discovery, it's not uncommon for analysts to start an effort by analyzing the question. During this analysis, she'll do things like determine what the customer is really asking for,, and break the question down into sub-questions. Once she's completed that analysis, she'll identify intelligence gaps, determine what information/data is needed to answer the questions/fill the gaps, select the appropriate search tool(s), and craft queries she believes will likely either provide her with answers, or information that will get her closer to the answer. While waiting for the query results (since some queries can take time to return results), she'll run queries in multiple tools simultaneously (if that's an appropriate option). Running queries can be iterative. This is because she'll get new information with each query, and those results can be used to refine or expand her search and discovery strategy.

As she's analyzing the data in the query result (finding important elements, identifying trends, spotting anomalies, detecting baselines, seeing how it connects to the "bigger picture" in meaningful ways, etc.), she may come across something unfamiliar in the data (or be unfamiliar with the data in its entirety). When that happens, she'll take steps to make sense of it. There are many ways to do so, but the simplest and most straightforward way is to look it up. If she's come across an unknown, but potentially important, actor in her search results, she'll look for them in past reporting. If it's technical information that's left her stumped, she'll look in one of many technical reference databases (for example, Newton's Telecom Dictionary, or something tailored for a specific dataset). Once she's made sense of the data and found information that either answers a question or provides insights to customers, she bundles it together in a digital workflow tool and sends it off to language analysts for translation, or to reporters for reporting and additional analysis, and eventual dissemination to customers.

Use Case

Nyah and her team have been called in to surge on apparent mass kidnapping. The leaders of the fictional GAStech are celebrating their new-found fortune as a result of the initial public offering of their very successful company. In the midst of this celebration, several employees of GAStech go missing. A fictional organization known as the Protectors of Kronos (POK) is suspected in the disappearance. Nyah and her team must assess the situation and figure out where the missing employees are and how to get them home again. Time is of the essence.

As a search and discovery analyst, Nyah has access to a wide variety of resources: current and historical news reports at her disposal, resumes of numerous GAStech employees, email headers from two weeks of internal GAStech company email, GPS tracking data, credit/loyalty card transaction data, and access to real-time feeds of microblogs and emergency calls. From this data, she'll need to the understand the current organization of the POK and how it has changed over time; characterize the events surrounding the disappearance; identify suspicious behaviors; identify people and locations to investigate; and, identify what is happening in the city of Abila, all in order to find clues into the disappearance of the GASTech employees.

More information about this use case can be found here: