# StaRS: Business Information System Analysis

## Tutorial Case Study

### StaRS Overview

A streaming company is replacing its content recommendation system with an improved version capable of producing viewing suggestions that capture user preferences more accurately than at present. The existing content recommendation algorithm (i.e., the legacy system) finds items in the company’s streaming library similar to the ones previously watched by a given registered user. Those titles are then ranked according to a similarity score (the way this is calculated bears no relevance) and included in the ‘Recommended for you’ tab of the user’s screen. The improved version, called StaRS (Streaming Recommendation System), is meant to produce more reliable similarity scores, thus increasing the likelihood that the user will watch the suggested content. To this end, StaRS will link to the streaming company users’ IMDb accounts (should those exist and should their owners agree to provide access). Concretely, StaRS relies on the legacy system to identify similar items and calculate their initial similarity scores as before. Subsequently, StaRS fine-tunes each of those scores by looking up the similar items in the user’s IMDb browsing history. Those items that have never been accessed by the user on IMDb keep their legacy similarity score. Conversely, if an IMDb match is found, then:

* If the IMDb rating of the matching item is higher than the average ratings of all items in the user’s IMDb browsing history, then the legacy similarity score is increased by a factor proportional to the relative difference.
* If the matching item falls within a genre that is well represented in the user’s IMDb browsing history, then the legacy similarity score is increased by a factor proportional to the number of items within that genre that the user had previously accessed on IMDb.
* If any members of the matching item’s crew (director, actors, etc.) are also found in the user’s IMDb browsing history, then the legacy similarity score is increased by a factor proportional to the number of common crew members.
* If the matching item has won any awards, then the legacy similarity score is increased by a factor proportional to the number and prestige of those awards.

### StaRS similarity score calculation example

The legacy system has identified Blade Runner 2049 as similar to the items previously watched by user Bob and has calculated a similarity score s. StaRS finds Blade Runner 2049 amongst the IMDb pages Bob has viewed. The film’s IMDb rating is higher than the average across Bob’s browsing history, so s is increased. Bob has previously accessed the IMDb pages of Ghost in the Shell and Altered Carbon, both featuring ‘Action’ and ‘Drama’ genre tags; since those also apply to Blade Runner 2049, s is further increased. Bob’s IMDb browsing history also features Arrival and Sicario (both directed by Dennis Villeneuve, just like Blade Runner 2049) as well as the Star Wars original trilogy (starring Harrison Ford who plays Decker in Blade Runner 2049); this triggers another increase of s. Blade Runner 2049 won 101 awards, two of which are prestigious Oscars, therefore s is increased accordingly. The exact amounts by which s is increased by StaRS are irrelevant.

### Tasks

* Business information system identification. Discuss StaRS‘s role(s) in the context of the streaming company’s business ecosystem. Is STaRS a business information system? Justify your answer mapping relevant concepts from the module materials and relevant literature against the overview above.
* Additional requirements analysis. Before developing StaRS, the streaming company performed an initial requirements analysis which led to the features presented in the overview above. The streaming company wants to expand StaRS’s functionality such that users are able to reorder the items in the system-generated ‘Recommended for you’ tab, should they wish to. Design and document an appropriate requirements analysis process to capture the users’ views on if and how this new feature should be added.
* Business process and project management. Design the appropriate strategy to develop the additional app feature referenced in the previous task. Justify your strategy choice: map established methodologies from the module content and relevant literature against the specific nature of StaRS.
* Data flow analysis. Discuss the role of data flowing through StaRS. Model the system’s data-related characteristics using relevant approaches covered in the taught content and relevant literature.
* Business integration. Propose a strategy to integrate StaRS with other applications running within the streaming company.