DIT045/DAT355 Assignment Cases

Fall 2020

Select one of the four cases to use throughout your group assignments. See the assignment descriptions for more detail.

Case 1: Tourism Software

Tourism is a significant industry and money-maker for local economies. Even in the face of COVID, local tourism or outdoor tourism can still be possible. It is important for those responsible for attracting and maintaining tourism to keep up to date with the possibilities of technology. In this case, a tourism office for a city or town wants to attract more tourists and make the tourism experience for their city interesting and engaging. They want to direct tourists to interesting sites, give them local information and history, and direct them to local businesses. There are a number of different physical technologies than can be used to achieve these goals, all with accompanying software. The tourist office can have an engaging and informing website which informs about technology that can be used in tourism, they could have kiosks at local tourist offices, locations or businesses, where tourists can engage and look up information, and they could also make use of mobile technology by providing apps for phones. In particular, technology, such as Augmented Reality (e.g., think Pokémon Go) could make tourism more interesting and fun, potentially for all ages. People are very accustomed to navigating with a phone and using maps, and perhaps this is an area with good potential for tourism.

Of course, there are many factors to consider. Tourism wants to support and help local businesses, but how to decide what sort of businesses are promoted? Tourist safety can also be a big issue, and the software should not somehow direct tourists to an unsafe location or area. Perhaps the software could help with safety? But, on the other hand, cities do not want to promote or highlight some of their underlying problems for visiting tourists. Data privacy is also an issue, protecting the personal information of tourists. Different users may want to see different content (e.g., children, adults, history buffs, ghost enthusiasts). And the app must think about where this content will come from, perhaps local scholars, museums, or historical societies? Who is responsible if content is inaccurate or inappropriate in some way? The city or town tourism office must consider the entire experience of the tourist.

Case 2: News Evaluation

With the rise of social media, we have seen the spread of what many call Fake News. In the past, people got their news information from newspapers or television, most of which had a standard journalistic process with fact checking and editing. Of course, there was always tabloid-style news, but most people could judge the legitimacy of information based on its source. Now, many pieces of news or information are shared on social media sites like Facebook, Instagram, and Twitter. Although it is possible to link to more traditional news articles on these sites, often news and information looks like it is from a trusted news outlet, but is not. Often this sort of news has a political agenda, or in some cases may even be part of a targeted political action.

Many social media platforms are introducing mechanisms to flag or mark news and posts as suspicious or fake. There are also many guides for how to spot fake news and work to verify the trustworthiness of information we find online. However, it may be interesting to have software which can evaluate the trustworthiness of a piece of news or post, and which is created independently of a particular social media platform. One could submit a link, article or post and receive back information which evaluates the trustworthiness of the article provided. It could look at the source, date, author, possibly the language used, and other factors to make an evaluation. As many people have investigated this issue, such an application should make use of best practices and available knowledge. It could link to external sources (e.g., snopes.com, adfontesmedia.com) to support evaluations. Of course, the sources themselves should be trustworthy. It should offer a level of transparency as to how the evaluations provided are determined. The application could consider having some sort of feedback loop to deal with disagreements or to further determine legitimacy. The application should aim to be trustworthy and very usable. It should aim for a level of neutrality. The application should consider the entire journey of the user, whether it be an individual or journalist, and aim for an experience which combats the spread of false information.

Case 3: Ethical Pet Ownership

Many people love owning pets – cats, dogs, and even more exotic animals like hedgehogs, turtles, birds, etc. One emerging issue is the prevalence of Puppy Mills or Farms or similar, where animals are bred to be sold, but may not be bred or kept in nice conditions (e.g., too many animals in a small space). Pet stores have often been accused of having similar problems. There is a also the issue of Designer Dogs, where dogs are bred for certain appealing characteristics, but which end up with an increase in genetic problems as a result. And, of course, there is often the problem where people get or give pets as gifts, only to later realise they are expensive, or cannot be property taken care of. Although these problems are more prevalent in dogs, similar issues may arise in the breeding and selling of other pets.

It is possible to create software to help with these problems. Such software could contain a list of sources for purchasing or adopting pets, with care as to the reputation and conditions of the pet sources. This could be done either through reputation and rating, or through other sources (e.g., local bylaw enforcement agencies could collect data or perform checks). Information can be collected about the health problems encountered by pets from a particular site. Users could gain but also provide certain information. The software could help people to ensure they are buying a pet from a reputable source or can help people adopt out pets they can no longer care for. The software could also offer information on the benefits and drawbacks of certain breeds and pets, including expected lifespan and health issues. It could provide information about what types of pets are legal or not in particular areas. One could create a profile and let the software recommend to you an appropriate pet (or not), based on your living conditions, family make-up, expendable income, etc. Of course, privacy is always an issue, both for users and pet owners, but also pet breeders. As animals may be expensive, they may be a target of theft, and their safety should be considered. Perhaps the software could also help find lost pets, if this is considered in scope. The software or system could run on a number of different platforms as appropriate, including websites, apps, or any other relevant devices.

Case 4: Online Classroom

In a familiar scenario, many classrooms which were formerly in person are now moved to online. Tools like Zoom and Teams are used to communicate with and run classrooms. For university students, this

transition may be workable (although not easy for everyone). However, for younger students, this transition to online learning can be quite difficult. In this scenario, a company or organization wants to create software which is effective for online learning for youth and children. You can focus on a particular age range, or cover all pre-university students (ages 6-18, roughly). How can online learning be effective and engaging for this group? What sorts of devices should be used (computers, mobiles, tablets, etc.)? What should the software look like and support? Basic functions like chat, discussions, video discussions, lesson plans, progress, assignments, and tests should be covered. However, we already have existing software (like Zoom, Canvas) which covers much of this. How can new applications and software be developed which better enhances and supports online learning for young students? This is particularly relevant in times of COVID (although less so in Sweden) where students may be learning at home at the same time as their siblings, or at the same time their parents or guardians are working. What sort of features can support this? How can student attention be captured and held? How can such a system support safe engagement with their surroundings (e.g., home, possibly nature), in order to promote physical activity as well as learning. Can the system also account for students with special learning needs?

Of course, as the aim is for youth and children, privacy and safety are incredibly important. The software may make use of material from outside sources (e.g., educational material, videos, etc.), but the sources must be either trustworthy or evaluated in some way. The work and mental health of educators should also be considered. How can the software help to make their job more satisfying and sustainable? The experience of youth/children, teachers, parents and other affected stakeholders should all be considered.

Novelty

It's fine to take inspiration from existing software and tools, but the requirements for your products should finally describe something which is sufficiently unique and could be a potential competitor to existing applications. If the space of possible functions for this domain is big, try to focus on a sub-set (possibly a combination of existing functions) which differentiates your product from existing software.

Further Information

These descriptions are intended to give a good start on developing requirements for the potential system. It's possible that further information or clarifications may be needed in order to model and specify the requirements. You can ask the various stakeholders involved in the domain questions using the discussion forum on Canvas. Find the discussion forum for this exemplar. Ask a clarifying question, making sure that you indicate which stakeholder you are asking. The "stakeholder" will provide you an answer. Answers and responses are shared between all teams working with this exemplar.