SOFTWARE ENGINEERING
WITH THE HUMANISE LAB

Talking *points*

Knowledge & Comprehension

1. What is meant by a human-centric approach?
2. What is a user interface? Why is it important that software users can adapt user interfaces?
3. Why is it important that technology is accessible to everyone?

Application

4. Human 'values' include traits such as honesty, trust and privacy. How do you think human-centric software can account for these values? How do you think software engineers ensure their software adheres to these principles?
5. What challenges do certain demographic groups (e.g., elderly people, speakers of foreign languages) face when accessing healthcare services? What role could software play in addressing these challenges? What would the software need to take into consideration to ensure it was accessible to each demographic group?

Analysis

6. How do you think a person's cultural background may influence their software requirements and preferences?
7. Why do you think software engineers do not always consider the needs of a diverse range of end users when designing software and apps? What problems does this cause?
8. What are the benefits and drawbacks of using 'personas' to consider end user requirements when developing accessible software?

Evaluation

9. To what extent do you think it is possible for software to cater for all the needs of all potential end users?
10. How do you think software, and the role of software engineers, will change in the future as technology advances?
11. To date, do you think the increasing integration of technology in our lives has made society more or less equitable? Give examples to support your answer. How could human-centric software contribute to a more equal society?

Activities

1. Create personas for an accessible app

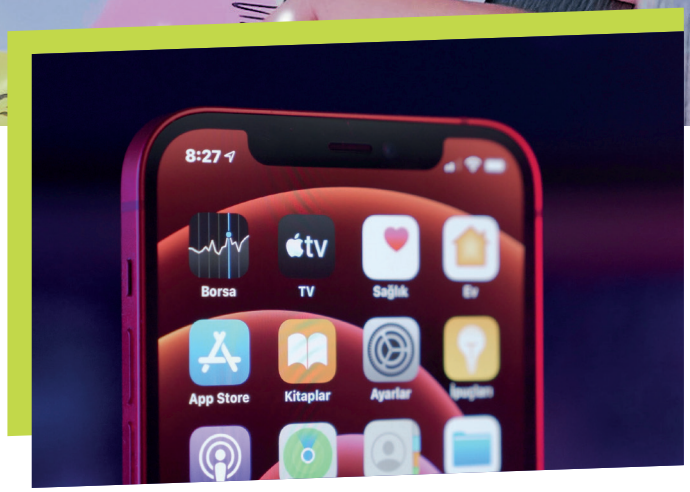
Consider a particular service that can be accessed through apps. Examples include:

- Ordering food (e.g., delivery services, contactless ordering in restaurants)
- Accessing public transport (e.g., booking train tickets, live bus timetables)
- Healthcare (see article)
- Official functions (e.g., applying for a passport or visa, accessing benefits or financial support)

Search online to find different apps that support your chosen service, and read the reviews that users have written. From these reviews (and your own experiences, if you have used any of the apps yourself), write a list of accessibility issues raised by users. These could include general frustrations with how the apps function, or specific concerns related to the unique needs of individuals.

Based on this list, create personas and associated user stories for three potential end users of the apps. Visit **www.monash.edu/it/humanise-lab/projects/completed-projects/a-curated-personas-and-design-guidelines-tool-for-better-supporting-diverse-end-users** to see an example persona from the HumaniSE Lab. While your personas do not need to be this detailed, ensure you include:

- The persona's demographics (e.g., age, gender, occupation)
- Specific accessibility requirements (e.g., any language or disability considerations)



- Goals for the person using the service (what do they want to achieve from the app?)
- Frustrations for the person using the service (what is hindering them achieving their goals in currently available apps?)
- Guidelines for improving the service for this specific persona

When you have completed your three personas, consider all their goals and frustrations together. Imagine you are in a team designing a new app for this service. Write a list of accessibility features that your software development team should consider when creating the app. Consider the following:

- What features will your app have?
- What adaptable features will the user interface have?
- Are all the accessibility features compatible with each other? Can your app cater for all your personas?
- How would you test whether your app is accessible for a wide range of different end users?

2. Website accessibility

Many websites and apps have adaptable user interfaces, allowing the viewer to change the settings to improve their experience of the site. Visit the Futurum Careers website (**www.futurumcareers.com**) and explore the accessibility options available by clicking on the blue figure in the bottom right corner of the page.

Trial the different accessibility features. For each option, write notes on:

- What the feature does to the website
- Why this change is useful for the target end user (you can research online if you are unsure)
- How this change affects your personal experience of using the website

More *resources*

- Find out more about the HumaniSE Lab and the work the team is conducting, including how to make software more culturally diverse and how the Living Lab is being established: **www.monash.edu/it/humanise-lab**
- Watch Anuradha's Three Minute Thesis presentation about her PhD research on maps and floorplans for people with visual impairments: **www.youtube.com/watch?v=7aedysZAya4**
- In this video, a software engineer discusses what her role entails: **www.youtube.com/watch?v=5kas2jBObUY**
- This TEDx talk from Judy Brewer explains the importance of accessibility for software and technology, covering everything from mobile phones to virtual reality: **www.youtube.com/watch?v=Wb2X9kYEvXc**