



Master in Planning and
Management of Tourism Systems



Smart Destinations & other IT related to Tourism

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EXAM

There are 7 dates for the written exams in 2025, the first two are:

- Monday 12th of January from 11.00 to 12.00 in Room 4 of Via Salvecchio
- Monday 7th of February from 11.00 to 12.00 in Room 3 Via Salvecchio

*** Please try to attend the first date if your can ***

→ The written test has a total of 20 questions. In order to be approved, 12 or more right answers are needed. There are no grades, only approved or not approved. Remember to bring your ID card and a pencil

→ To be admitted to the exam, you need to complete your two project works before

SMART DESTINATIONS

They are touristic destinations in which travel companies, tour operators, local DMO and local administration **work together to share their data and analyse the touristic flows to improve the touristic experience**

SMART DESTINATIONS

Huge datasets (“Big Data”) are collected, made up by:

1. GPS data
2. User-generated reviews
3. Social media contents
4. Sensor data (Internet of Things)

SMART DESTINATIONS



Barcelona was one of the first destinations to employ big data to better understand tourist behaviour: they collected 100.000 travel reviews published on social media and travel blogs from tourists of previous years

Sagrada Familia is the main landmark of Barcelona



They focused on the neighborhood of the church of the Sagrada Familia, and analysed the frequency of occurrence of all the different words in the travel reviews

Sagrada Familia is the main landmark of Barcelona



The most frequent keywords were: Sagrada Familia, Barcelona, tickets, amazing, visit, Gaudì, online, beautiful, towers, church, building, tour, queue and booking

Sagrada Familia is the main landmark of Barcelona



In the list of the most frequently used keywords there were two positive attributes: 'amazing' and 'beautiful', associated to the church

Sagrada Familia is the main landmark of Barcelona



However, **four keywords** of the list were related to planning and management of the visit to the church: '**tickets**', '**online**', '**queue**' and '**booking**'

Sagrada Familia is the main landmark of Barcelona



That means that tourists spent more time mentioning the problems of purchasing tickets and waiting in the queue than describing the beauty of the church

Sagrada Familia is the main landmark of Barcelona



This result was **unexpected** because the online booking system of the church was **very advanced** and church administration believed that this issue was solved

Sagrada Familia is the main landmark of Barcelona



This analysis demonstrated that this issue was not solved yet, providing valuable information to the managers of this destination from the point of view of the tourists

Then, they repeated the experiment for the others neighborhoods of the city, grouping all keywords in seven categories: food, recreation, nature, sport, sea, heritage and urban environment

...and find out which of these 7 categories were more popular categories in each neighborhood of the city (e.g: the areas with more entertainments, the areas with more heritage, etc).

in this way, they were able to better plan the itineraries of the buses, to plan the turns of the street cleaning staff accordingly the number of people in the area, the museum opening hours, etc.

Big data and AI are useful not only for the tourism sector but also to make 'smarter' decisions for **city planning**. Today, the analysis of user-generated content is fundamental in any **Smart City model** to improve the **quality citizens' life**



Smart Cities use IT for their urban planning to have clever urban transports, more efficient ways to dispose waste, heat buildings and light streets, but also safer public spaces and better access to public services



Smart Cities



Smart Destinations



The **tools** employed are **similar** in both cases. Some cities can be both **Smart Cities** and **Smart Destinations** (e.g: Barcelona). **Smart Destination** are also a type of **Smart Tourism**

Lombardy region is collaborating with UniBG to build a Smart Destination for each cities and town the region. They have access to **all GPS data from mobile phones** of all people living in Lombardy or visiting it

ARTWORK DIGITALIZATION

The biggest advantage is the improved accessibility: everyone now can access to high resolution copies of the originals. Art becomes freer and more democratic



DIGITAL ART

Not only art can be digitalized, but there are museums that only show digital art



ARTWORK DIGITALIZATION

Multi-touch tables are accessible to many people at the same time

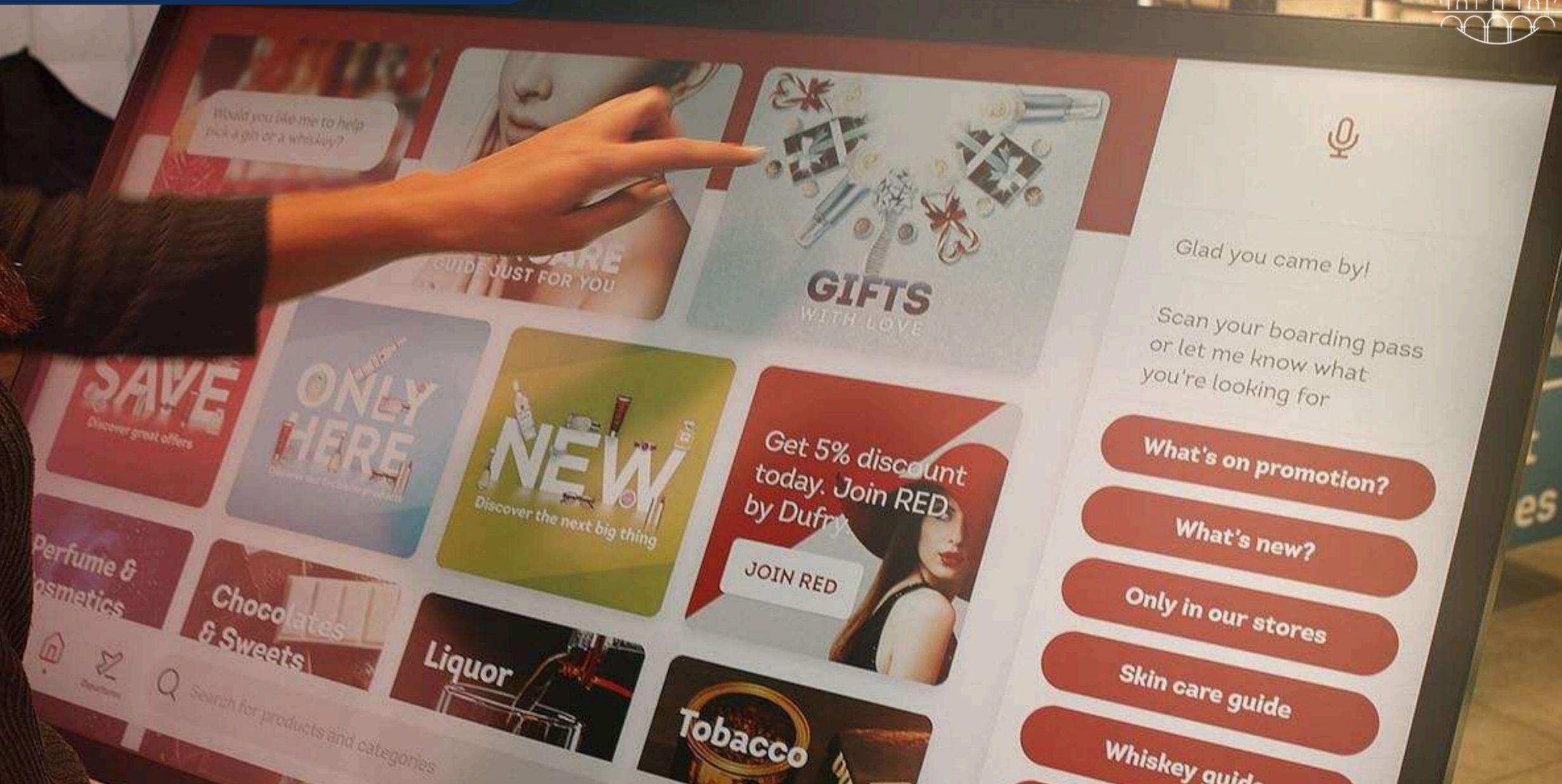


DIGITAL KIOSKS/TOTEMS



Digital kiosks or Totems are standalone screens that passersby or customers can interact with on the spot, asking information and reducing the work of the staff

DIGITAL KIOSKS/TOTEMS



They automate many mundane tasks that your staff don't really need to be spending any more efforts

DIGITAL KIOSKS/TOTEMS



Totem can also be used as digital **tour guides** of a destination

PORTAL NETWORKS



A real-world art installation that uses [live video](#) to connect two city squares in real time, allowing people to see and interact with each other across great distances.

ONLINE TICKETS

Digital platforms already manage **online tickets**, cancellation management, time slot tickets, flexible pricing, etc.

Example: **easyPark** app



ARTWORK DIGITALIZATION

Even Bergamo Theatre has an app to manage bookings with free audio tours of the theatre

ONLINE VISITS

During lockdown museums had to reinvent themselves with virtual exhibitions, guided tours, conferences and web contests

Example: [Prado Museum \(Madrid\)](#) proposes [online visits for children](#)

SMART HOMES



IoT can monitor and control heating, light, air conditioning, electric shutters, media systems and security systems



SMART HOTELS



- Switch off lights when no one is present in the room
- Open/close window curtains
- AI regulates temperature and it remembers guests' preferences
- TV welcomes guests with their own names. They can automatically access Netflix / Spotify with their own account, and play your favourite music

SMART HOTELS



The hotel's app also allows the guests to make restaurant reservations, book the SPA, and order additional activities within the hotel (even through voice)

Electronic key cards can be sent by the hotel on the guests' smartphones to open the room directly

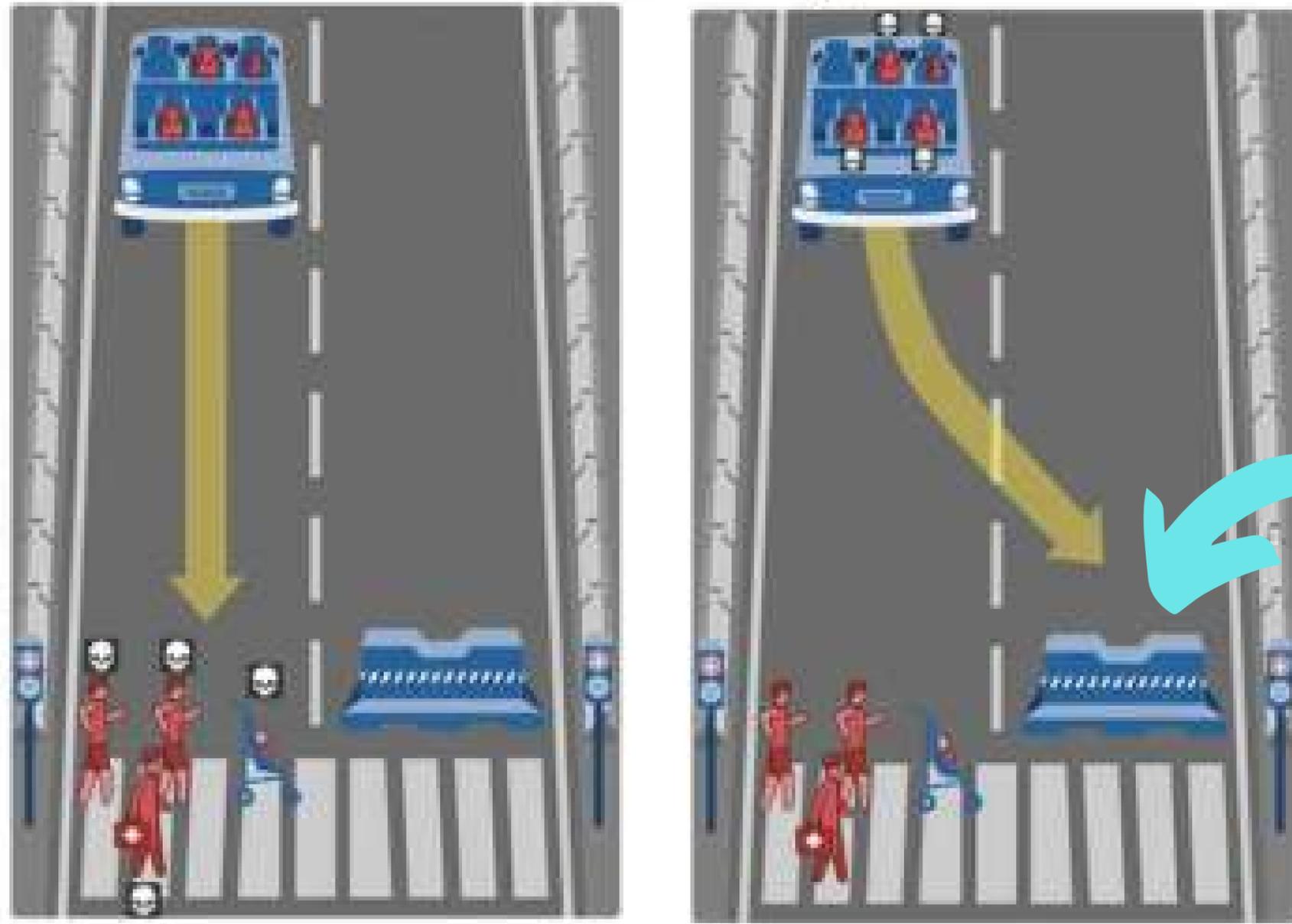


SELF-DRIVING CARS



Self-driving vehicles are able to use AI to analyse their surroundings and to drive without needing a human driver

What should the self-driving car do?



Scenario B: car crashes on the barrier risking the life of its passengers

The biggest issue to solve is not technical but ethical: self-driving cars may have to take **moral decisions**, e.g: choosing which **life to save** in case of emergency

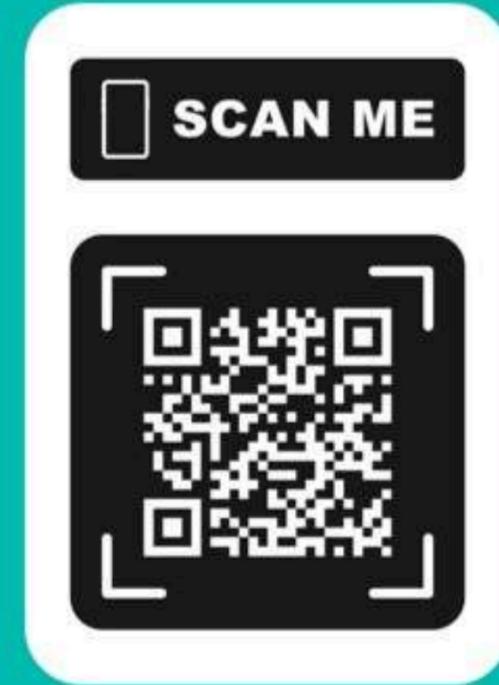
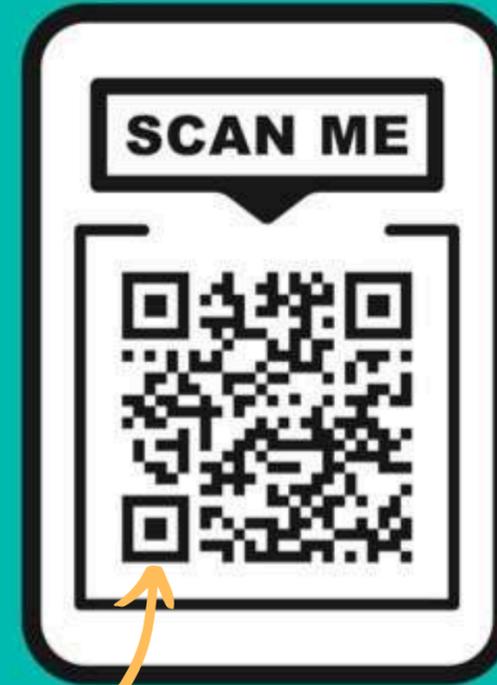


More probable is the widespread adoption of AI-based driving assistants to insert the auto-pilot on the highway



At present the only publicly available self-driving cars are a few **robotaxis** in Los Angeles and San Francisco

QR CODES



3 big squares: used for orienting the camera



Many bar and restaurants do not print their menu anymore thanks to QR codes

Customer satisfaction survey

Please help Ink-42 improve by taking this short survey. We value your feedback

How satisfied are you with the service you received?

- Very satisfied
- Somewhat satisfied
- Neutral
- Somewhat dissatisfied
- Very dissatisfied
- Add option or [add "Other"](#)

Short answer

Paragraph

Multiple choice

Checkboxes

Dropdown

File upload

Linear scale

Multiple choice grid

Checkbox grid

Date

Time

<https://docs.google.com/forms/>

ONLINE FORMS

Very useful for preparing **surveys** and questionnaires. Best ones are **Google form** (free) and **Typeform** (freemium)

LIST OF IT IN THE WRITTEN EXAM (DEFINITION ONLY)

- Social Media
- Online travel agencies (OTA)
- Mobile Tourism
- Artificial Intelligence (AI)
- Digital Maps
- Generative AI
- Large Language Models (LLMs)
- Global Positioning System (GPS)
- Geographical Information Systems (GIS)
- Workation
- Smart Tourism
- Totems / Digital kiosks
- Smart Cities
- E-commerce
- Web Sites & Portals
- Internet of Things (IoT)
- Self-driving vehicles
- Metaverse
- Blockchain
- Bitcoins
- Non-fungible Tokens (NFT)
- Artwork Digitalisation
- Smart Destinations
- Smart Hotels
- Virtual Reality (VR)
- Augmented Reality (AR)
- Web 1.0, 2.0 and 3.0
- QR Codes

DATA SIZES

10^3 : Kilobyte (kB)

10^6 : Megabyte (MB)

10^9 : Gigabyte (GB)

10^{12} : Terabyte (TB)

10^{15} : Petabyte (PB)

10^{18} : Exabyte (EB)

10^{21} : Zettabyte (ZB)

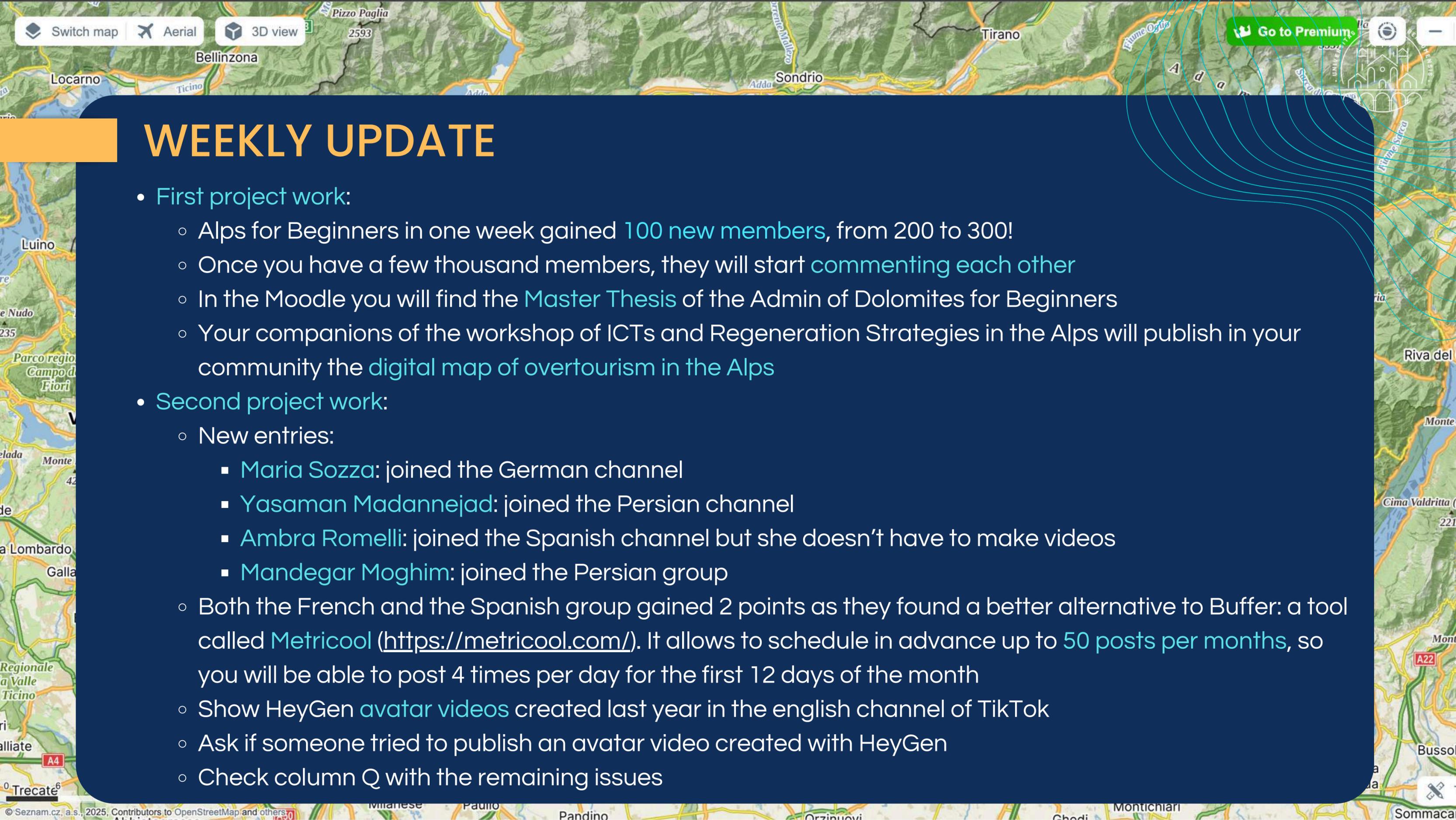
10^{24} : Yottabyte (YB)

1 byte = 8 bits

1 Mbps = 1 Megabit per second

PROJECT WORKS





WEEKLY UPDATE

- **First project work:**
 - Alps for Beginners in one week gained **100 new members**, from 200 to 300!
 - Once you have a few thousand members, they will start **commenting each other**
 - In the Moodle you will find the **Master Thesis** of the Admin of Dolomites for Beginners
 - Your companions of the workshop of ICTs and Regeneration Strategies in the Alps will publish in your community the **digital map of overtourism in the Alps**
- **Second project work:**
 - **New entries:**
 - **Maria Sozza:** joined the German channel
 - **Yasaman Madannejad:** joined the Persian channel
 - **Ambra Romelli:** joined the Spanish channel but she doesn't have to make videos
 - **Mandegar Moghim:** joined the Persian group
 - Both the French and the Spanish group gained 2 points as they found a better alternative to Buffer: a tool called **Metricool** (<https://metricool.com/>). It allows to schedule in advance up to **50 posts per months**, so you will be able to post 4 times per day for the first 12 days of the month
 - Show HeyGen **avatar videos** created last year in the english channel of TikTok
 - Ask if someone tried to publish an avatar video created with HeyGen
 - Check column Q with the remaining issues

TASKS FOR NEXT WEEK

- **First project work:**
 - Keep posting and/or commenting and **commenting the comments** even after you finish the required number of posts/comments
- **Second project work:**
 - Keeping posting the new videos in each channel using **2+ different templates**
 - Keep looking for alternatives to Buffer/Metricool that allow to queue more than 50 videos per month to gain a **bonus of +2 points** at the exam
 - Fix the **remaining issues** in column Q of our google doc
 - Keep publishing your vidoes **also after the exam**, as the course of AI and data science for Tourism will start only in February, avoiding any gap in your posting frequency
- **Movie of the week:** **Passengers** (2016 sci-fi movie with Jennifer Lawrence on interstellar travels)
- **Book in the moodle:** **The Last Economy**, by Emad Mostaque (<https://ii.inc/web/the-last-economy/>)
- **Next Mondays** we will meet just to **advance your project works**