

**Spring Boot (Java,
Gradle backend),
Next.js (JavaScript
frontend),
PostgreSQL (JPA /
Hibernate ORM)**

Technology Impact Cycle Tool

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The Travel Planner App is a full-stack web application designed to support users in planning and managing trips efficiently. The chosen stack ensures a scalable, secure, and responsive system with smooth communication between frontend, backend, and database. It enables real-time trip management, user authentication, and reliable data handling while keeping the application performant and easy to maintain.

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Level of education: Bachelor

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Impact on society

What impact is expected from your technology?

This category is only partial filled.

What is exactly the problem? Is it really a problem? Are you sure?

The problem is that planning trips manually using different tools is fragmented, time-consuming, and often confusing. Users struggle to keep all travel information in one place, which can lead to missed details, double bookings, or poor planning. This is a real problem for people who travel frequently or plan complex trips, although it is less critical for occasional travellers. The technology aims to solve this by centralising trip planning in one digital platform.

Are you sure that this technology is solving the RIGHT problem?

This question has not been answered yet.

How is this technology going to solve the problem?

This question has not been answered yet.

What negative effects do you expect from this technology?

This question has not been answered yet.

In what way is this technology contributing to a world you want to live in?

This question has not been answered yet.

Now that you have thought hard about the impact of this technology on society (by filling out the questions above), what improvements would you like to make to the technology? List them below.

Improve trip planning clarity by guiding users step-by-step instead of only storing data

Add validation and smart suggestions to reduce planning mistakes

Limit over-reliance on the tool by encouraging users to still review decisions manually

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Hateful and criminal actors

What can bad actors do with your technology?

This category is only partial filled.

In which way can the technology be used to break the law or avoid the consequences of breaking the law?

The system could potentially be misused if users store or share illegal content (e.g. fraudulent travel bookings or fake identities). Like most online platforms, it could also be used to organise scams or impersonate others if authentication is weak. However, the application itself is not designed for illegal activity and does not encourage it.

Can fakers, thieves or scammers abuse the technology?

This question has not been answered yet.

Can the technology be used against certain (ethnic) groups or (social) classes?

This question has not been answered yet.

In which way can bad actors use this technology to pit certain groups against each other? These groups can be, but are not constrained to, ethnic, social, political or religious groups.

This question has not been answered yet.

How could bad actors use this technology to subvert or attack the truth?

This question has not been answered yet.

Now that you have thought hard about how bad actors can impact this technology, what improvements would you like to make? List them below.

Add authentication and role-based access control to prevent misuse
Implement input validation and moderation to avoid fake or malicious content

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Privacy

Are you considering the privacy & personal data of the users of your technology?

This category is only partial filled.

Does the technology register personal data? If yes, what personal data?

Yes, the system may store personal data such as user account information (name, email), login credentials, and travel-related data like destinations, travel dates, preferences, and saved trips. This data is necessary for personalising the user experience and saving trip plans.

Do you think the technology invades the privacy of the stakeholders? If yes, in what way?

This question has not been answered yet.

Is the technology is compliant with prevailing privacy and data protection law? Can you indicate why?

This question has not been answered yet.

Does the technology mitigate privacy and data protection risks/ concerns (privacy by design)? Please indicate how.

This question has not been answered yet.

In which way can you imagine a future impact of the collection of personal data?

This question has not been answered yet.

Now that you have thought hard about privacy and data protection, what improvements would you like to make? List them below.

Minimise stored personal data and only keep what is necessary

Encrypt sensitive user data

Give users control to delete or export their data

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Human values

How does the technology affect your human values?

This category is only partial filled.

How is the identity of the (intended) users affected by the technology?

The application mainly supports users in organising their travel identity (e.g. frequent traveller, planner, explorer) by helping them structure and manage trips. It can improve confidence and reduce stress during travel planning. However, it may also reduce social planning interactions since users rely more on a digital system instead of planning collaboratively with others.

How does the technology influence the users' autonomy?

This question has not been answered yet.

What is the effect of the technology on the health and/or well-being of users?

This question has not been answered yet.

Now that you have thought hard about the impact of your technology on human values, what improvements would you like to make to the technology? List them below.

Keep users in control of all decisions (no automatic bookings or hidden actions)

Improve UX to reduce stress instead of overwhelming users with features

Support collaboration so users can plan trips with others easily

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Stakeholders

Have you considered all stakeholders?

This category is only partial filled.

Who are the main users/targetgroups/stakeholders for this technology? Think about the intended context by answering these questions.

Name of the stakeholder
students

How is this stakeholder affected?
-

Did you consult the stakeholder?
No

Are you going to take this stakeholder into account?
No

Name of the stakeholder
tourists

How is this stakeholder affected?
-

Did you consult the stakeholder?
No

Are you going to take this stakeholder into account?
No

Name of the stakeholder
frequent travellers

How is this stakeholder affected?
-

Did you consult the stakeholder?
No

Are you going to take this stakeholder into account?

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No

Name of the stakeholder
families

How is this stakeholder affected?
-

Did you consult the stakeholder?
No

Are you going to take this stakeholder into account?
No

Name of the stakeholder
developers

How is this stakeholder affected?
-

Did you consult the stakeholder?
No

Are you going to take this stakeholder into account?
No

Name of the stakeholder
educators

How is this stakeholder affected?
-

Did you consult the stakeholder?
No

Are you going to take this stakeholder into account?
No

Name of the stakeholder
Unknown

How is this stakeholder affected?
-

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Did you consult the stakeholder?

No

Are you going to take this stakeholder into account?

No

Did you consider all stakeholders, even the ones that might not be a user or target group, but still might be of interest?

-

Now that you have thought hard about all stakeholders, what improvements would you like to make? List them below.

Include feedback from real users to improve usability

Ensure travel partners (future integrations) are not negatively impacted by inaccurate data

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Data

Is data in your technology properly used?

This category is only partial filled.

Are you familiar with the fundamental shortcomings and pitfalls of data and do you take this sufficiently into account in the technology?

Yes. The system relies on user-input data, which can be incomplete, inaccurate, or outdated. It is important to recognise that travel data is subjective and may change quickly (prices, availability, schedules). The application does not assume data is always correct and should be designed to allow easy updates and corrections.

How does the technology organize continuous improvement when it comes to the use of data?

This question has not been answered yet.

How will the technology keep the insights that it identifies with data sustainable over time?

This question has not been answered yet.

In what way do you consider the fact that data is collected from the users?

This question has not been answered yet.

Now that you have thought hard about the impact of data on this technology, what improvements would you like to make? List them below.

Clearly show when data might be incomplete
Allow easy editing and correction of trip information

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Inclusivity

Is your technology fair for everyone?

This category is only partial filled.

Will everyone have access to the technology?

This question has not been answered yet.

Does this technology have a built-in bias?

There may be bias based on user input and available data sources. For example, users from certain regions may have better travel suggestions or more relevant content if future features include recommendations. Also, design decisions may unintentionally prioritise certain travel styles (e.g. organised trips over spontaneous travel).

Does this technology make automatic decisions and how do you account for them?

This question has not been answered yet.

Is everyone benefitting from the technology or only a a small group?

Do you see this as a problem? Why/why not?

This question has not been answered yet.

Does the team that creates the technology represent the diversity of our society?

This question has not been answered yet.

Now that you have thought hard about the inclusivity of the technology, what improvements would you like to make? List them below.

Improve accessibility (keyboard navigation, screen reader support)
Avoid bias in future recommendations (e.g. only popular destinations)
Design for different travel styles (budget, luxury, solo, group)

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Transparency

Are you transparent about how your technology works?

This category is only partial filled.

Is it explained to the users/stakeholders how the technology works and how the business model works?

The application should clearly explain its purpose (trip planning and management) and how user data is used (e.g. saving trips, personalisation). Since this is an educational project, there is no business model, but transparency about data storage and usage should still be provided to users.

If the technology makes an (algorithmic) decision, is it explained to the users/stakeholders how the decision was reached?

This question has not been answered yet.

Is it possible to file a complaint or ask questions/get answers about this technology?

This question has not been answered yet.

Is the technology (company) clear about possible negative consequences or shortcomings of the technology?

This question has not been answered yet.

Now that you have thought hard about the transparency of this technology, what improvements would you like to make? List them below.

Clearly explain what data is stored and why
Make system behaviour predictable (no hidden automation)
Provide a simple privacy and usage explanation page

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Sustainability

Is your technology environmentally sustainable?

This category is only partial filled.

In what way is the direct and indirect energy use of this technology taken into account?

The system is designed as a lightweight web application, meaning energy use is mainly on servers and user devices. Efficient backend design, database optimisation, and minimal unnecessary data processing help reduce energy consumption. However, large-scale usage would still increase server energy demand.

Do you think alternative materials could have been considered in the technology?

This question has not been answered yet.

Do you think the lifespan of the technology is realistic?

This question has not been answered yet.

What is the hidden impact of the technology in the whole chain?

This question has not been answered yet.

Now that you have thought hard about the sustainability of this technology, what improvements would you like to make? List them below.

Optimise backend queries to reduce server load
Avoid unnecessary data processing and API calls
Keep infrastructure lightweight and scalable

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Future

Did you consider future impact?

What could possibly happen with this technology in the future?

If widely adopted, the app could evolve into a full travel ecosystem used by many users to plan, book, and share trips. It could integrate AI recommendations, real-time travel updates, and collaboration features. At scale, it could influence how people plan travel, making digital trip planning the standard approach.

Sketch a or some future scenario (s) (20-50 years up front) regarding the technology with the help of storytelling. Start with at least one utopian scenario.

The app becomes an AI travel assistant that fully plans and manages trips in real time. Users only set preferences, and the system handles everything like transport, hotels, and updates automatically. Travel becomes easier, more accessible, and less stressful for everyone.

Sketch a or some future scenario (s) (20-50 years up front) regarding the technology with the help of storytelling. Start with at least one dystopian scenario.

The app is taken over by a company that prioritises profit. It starts pushing paid options, tracking users heavily, and limiting choices. Users lose privacy and become dependent on biased recommendations instead of making their own decisions.

Would you like to live in one of this scenario's? Why? Why not?

The utopian one is better because it makes travel easier and more inclusive. The dystopian one is bad because it reduces freedom and privacy.

What happens if the technology (which you have thought of as ethically well-considered) is bought or taken over by another party?

If sold, the new owner could change it for profit and misuse data. To prevent this, ethical rules or restrictions should be added to protect users and keep the original purpose.

Impact Improvement: Now that you have thought hard about the future impact of the technology, what improvements would you like to make? List them below.

Prevent misuse at scale by adding strong security early

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Ensure the platform stays neutral and doesnt push commercial bias