

Assignment 1: Innovation and Project Management

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Module: Changemakers: Creativity and Value Creation

Assignment: Assignment 1: Innovation and Project Management

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Course: Computing (Data & Information Systems)

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Task 1 Q1

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Innovation

Innovation has been playing a crucial role in changing the world and shaping human progress. It is a constant part of our everyday lives and has helped transform society as it is today, often influencing how we interact with innovations without even noticing.

Today we rely on modern technology, evolving sustainability standards, and widespread mental-health awareness movements that didn't exist twenty years ago. This shows how quickly innovation changes us by reshaping our behaviour, our values, and what we expect from the world. Innovation has become increasingly accessible, enabling a wider range of individuals and organisations to develop and adopt new ideas and technologies.

Modern society places greater emphasis on creativity, empathy, and pattern recognition, allowing innovation to extend beyond specialist expertise and be shaped by diverse skills, experiences, and perspectives [1].

The Industrial Revolutions provide a useful way to explain how technological progress has transformed society over time. The four Industrial Revolutions, dating back to the late 18th century, transformed society through mechanisation, electrification, digital computing, and today's artificial-intelligence-driven world. Each revolution introduced advances that reshaped how people lived, worked, communicated, travelled, and manufactured goods.

The Fourth Industrial Revolution is defined by society's reliance on digital technologies and interconnected systems. Innovations such as genome editing, machine intelligence, cryptocurrencies, and cyber-physical systems are increasingly embedded in daily life and are reshaping how people live and work. The World Economic Forum identified emerging technologies including advanced computing, big data, digital health, 3D printing, the Internet of Things, blockchain, and wearable technology, all expected to transform industries and everyday life [2].

Nikolai Kondratieff's Waves illustrate long cycles of economic growth triggered by major innovations. For example, data analysis has progressed from manual logs to digital systems and now to big-data and AI-powered analytics. Recent analysis suggests the current cycle is driven by holistic health, sustainability, and new technological breakthroughs. Creativity is presented as a universal human capability rather than something limited to artistic fields. Many people believe creativity is a fixed trait, but Tom and David Kelley describe this as the "creativity myth," arguing that everyone has creative potential that can be strengthened through practice and experience.

Creativity is essential for innovation because it allows individuals to view problems from new perspectives and generate original solutions. The material also highlights that personal passions—such as wonder, joy, desire, or frustration—can fuel idea generation by motivating individuals to improve or change aspects of their environment. Overall, creativity acts as the foundation for innovation, enabling new ideas that support progress and problem-solving [3].

Task 1 Q2

02 June 2026 12:24

Ideation

Several project ideas relating to the development of an application based on personal interests and areas of study were considered.

The first idea was a travel planner application designed to provide users with a central platform to organise trips, manage itineraries, track budgets, and access personalised travel information. The application aims to improve the travel planning experience by combining essential planning tools and information into one platform, reducing the time and effort required to organise a trip.

The second idea was a smart gardening application designed to help users maintain healthy plants by tracking watering schedules, sunlight requirements, soil conditions, and seasonal gardening tasks. The application would provide personalised reminders, plant care guidance, and detailed plant profiles to support both beginner and experienced gardeners in managing indoor and outdoor gardens.

The third idea was a personal finance application designed to help users manage their money by tracking expenses, setting savings goals, monitoring spending habits, and providing monthly financial summaries. The application would aim to improve financial awareness through simple data entry, visual spending charts, and secure storage of financial information.

After evaluating the three project ideas, the travel planner application was selected for development as it provides a practical solution to the challenges of organising trips. By combining itinerary management, budgeting tools, activity planning, and personalised recommendations into one platform, the application aims to reduce stress, save users time, and create a more organised and enjoyable travel experience.

Project Title:

TripSphere A Travel Planning Application

Aim

To develop a user-friendly travel planning application that enables families, couples, and individuals to collaboratively organise trips, manage activities, create schedules, and prepare for travel.

Objectives:

- To research existing travel planning applications and identify key features that improve organisation, collaboration, and user experience.
- To design and develop core application screens, including trip creation, itinerary management, shared calendars, activity voting, and packing lists.
- To implement an intuitive and accessible user interface that allows users of different ages and technical abilities to easily navigate the application.
- To develop a working prototype that demonstrates essential travel planning functionality and allows users to manage trip information effectively.
- To conduct usability testing with users and evaluate feedback to identify improvements in functionality, design, and overall user experience.

TripSphere is a travel planning application designed to simplify the process of organising holidays and trips. The application will provide users with a central platform to create and manage trips, develop itineraries, access destination information, track budgets, create packing checklists, and use map integration to support travel planning. Users will be able to create personal accounts and organise all essential trip details in one place. The aim of the application is to reduce the stress associated with travel preparation by improving organisation, saving time, and creating a smoother and more enjoyable travel experience.

Task 1 Q3

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Research

Three different courses were researched to help achieve my project's aim and objectives.

1. LinkedIn Learning – UX Foundations: Interaction Design

This beginner-friendly course introduces key interaction design methods, focusing on human behaviour, design psychology, usability, accessibility, and design thinking patterns. It supports my project by helping me create clearer screens and more user-friendly interface designs for TripSphere.

2. Microsoft Learn – Introduction to Machine Learning

This beginner-friendly course provides a hands-on introduction to machine learning fundamentals, explaining the differences between AI, machine learning, and deep learning. It covers essential concepts such as model training and evaluation, giving learners a practical foundation for understanding how ML can solve real-world problems. It helps my project by giving me a basic understanding of how simple machine-learning models work.

3. Google Digital Skills – Data Analytics Certificate

This beginner-friendly programme introduces essential data analytics skills, including data cleaning, visualisation, dashboards, and analytical decision-making. It is designed for learners with no prior experience and uses a practical, step-by-step approach to build confidence in working with data. This supports my project by helping me understand how travel information can be organised and presented clearly within the TripSphere application.

LinkedIn Learning – UX Foundations: Interaction Design was chosen, as it was the most relevant to designing the TripSphere application. The knowledge gained improved my understanding of user-centred design and usability, which directly influenced the wireframes and interface design.

Task 2 Q1

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Project Timeline and Task Schedule

The project follows a structured schedule that breaks the work into manageable stages, from the initial planning and research through to design, implementation, testing, and evaluation. Table 1 outlines the planned activities for each stage, including the start and end dates. This schedule helps ensure the project is completed in a logical sequence, allowing sufficient time for each phase of development.

Required Technologies and Resources

The following technologies and resources will be used to support the design and development of the TripSphere prototype:

- Computer with internet access
- PyCharm for developing the Python prototype
- Balsamiq for creating wireframes and user interface designs
- Lucidchart for navigation flowcharts
- GitHub for version control and project storage
- Online learning resources and documentation
- Volunteer users to provide usability feedback

This schedule links to the Gantt chart below and helps keep the project organised by showing the order of tasks and how each stage will move forward.

Project Timeline and Task Schedule

Project Stage & Key Tasks	Start Date & End Date
Ideation	19/05/2026 – 02/06/2026
Aim and Objectives	02/06/2026 – 05/06/2026

Project Outline: Description & Key Sources	05/06/2026 – 10/06/2026
Project Scope: Timeline & Resources	10/06/2026 – 14/06/2026
Project Planning: Task Schedule & Gantt Chart	14/06/2026 – 18/06/2026
Risk Analysis	18/06/2026 – 20/06/2026
Development Methodology Selection	20/06/2026 – 22/06/2026
Design Phase (Wireframes & UI Screens)	22/06/2026 – 30/06/2026
Prototype Development (Non-functional)	30/06/2026 – 05/07/2026
Implementation (Finalising Prototype Screens)	05/07/2026 – 10/07/2026
User Testing & Feedback	10/07/2026 – 14/07/2026

Finish Development Work	14/07/2026 – 16/07/2026
Deployment Planning (Concept Only)	16/07/2026 – 18/07/2026
Reflection and Report Writing	18/07/2026 – 30/07/2026

Figure 1: Project Timeline and Task Schedule

Task 2 Q2

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Gantt chart

Henry L. Gantt developed the Gantt chart in the 1910s as a way to display tasks against time, is still widely used today for planning and tracking project tasks making project planning clearer and easier to manage [4].

A Gantt chart was produced to visually document the project timeline and illustrate how each stage of the TripSphere development process progresses over time.

The chart begins by listing all project tasks on separate rows, including ideation, aim and objectives, project outline, scope definition, planning, risk analysis, methodology selection, design work, prototype development, and implementation.

Each task is assigned a start and end date, allowing the duration of each activity to be represented as a coloured bar across the timeline. This visual structure makes it easy to identify overlapping tasks, sequential dependencies, and periods of high workload.

The Gantt chart supports effective project management by providing a clear overview of the project's progression and ensuring that deadlines are visible and achievable. It also helps maintain focus by showing how each stage contributes to the overall completion of the prototype.

By combining the Project Timeline and Task Schedule with the Gantt chart the project gains a complete and organised timeline that supports planning, monitoring, and successful delivery of the TripSphere application.

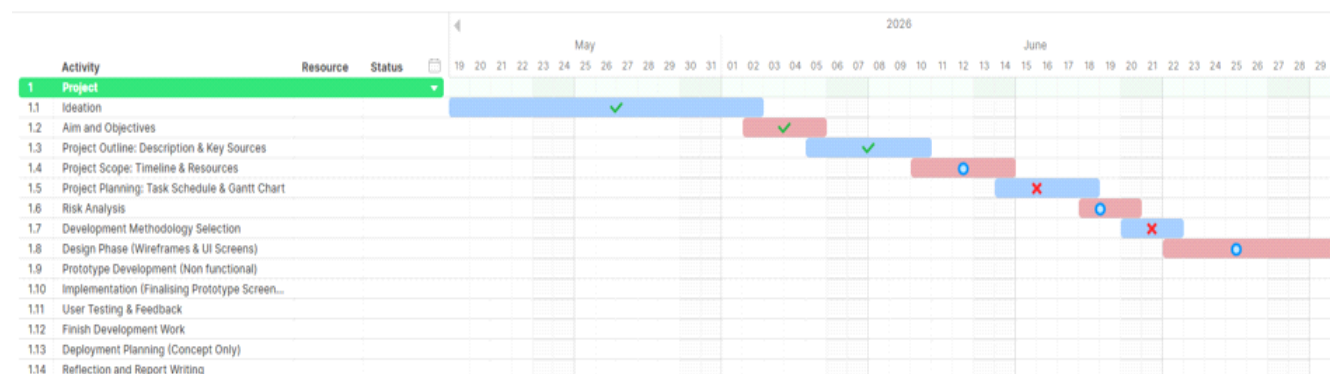


Figure 2: Gantt Chart

Task 2 Q3

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Risk Analysis

The TripSphere Travel Planning Application may face several risks and challenges that could affect the project's progress, quality, or completion. These risks include time constraints, technical issues, software unfamiliarity, design complexity, and limited user feedback.

By identifying these risks early, appropriate mitigation strategies can be planned to reduce their likelihood and impact. The table below outlines the key risks associated with the project and the actions that will be taken to manage them effectively.

Project Risk Analysis Table

Risk No	Risks	Impact	Contingencies
Time Constraints	Limited time available to complete research, design work, prototype development, and testing.	Work may be rushed or incomplete, affecting quality.	Create a weekly plan, break tasks into smaller steps, and prioritise essential work.
Technical Issues	Problems with software tools such as PyCharm, Balsamiq, or GitHub.	Delays in progress and difficulty completing design or prototype tasks.	Test tools early, keep backups, and use simple versions of designs first.
Design Complexity	Creating clear wireframes, layouts, and user journeys can be challenging.	Confusing or inconsistent app design.	Use templates, follow UX guidelines, and refine designs based on feedback.
Scope Creep	Adding extra features beyond the original plan.	Increased workload and missed deadlines.	Stick to the project scope and focus only on planned features.
User Feedback Limitations	Limited access to volunteer testers may reduce the quality of usability feedback.	Issues may go unnoticed, reducing usability.	Test each screen as it is created and gather feedback from multiple users where possible.

Figure 3: Risk Analysis Table

These risks were identified to help ensure the TripSphere project stays on track. By planning ahead and using simple mitigation strategies, the project can be completed within the required timeframe and meet the design objectives.

Task 3 Q1

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Development method

A suitable development method for this project is an Agile approach, using a simplified Scrum structure combined with Prototyping. Agile is an iterative and flexible methodology that supports continuous improvement, making it appropriate for a user-focused travel planning application [5].

The Scrum Lite approach divides the project into short development cycles, known as sprints, where specific features such as interface screens, itinerary functions, or navigation elements can be developed and refined in manageable stages [6].

This staged development allows regular testing, feedback collection, and adjustments before progressing to the next phase. Prototyping is also a key element of the chosen method. Since the project involves designing a clear and intuitive user interface, early prototypes and wireframes help identify usability issues and ensure the design meets user expectations [7]. Visual mock-ups allow rapid evaluation of layout, navigation, and functionality before full implementation.

Throughout the project, development will take place in small iterations, with each sprint focusing on a specific feature, such as the homepage or itinerary screen. At the end of each sprint, progress will be reviewed and improvements made using testing and user feedback. A Kanban board will be used to track tasks under “To Do”, “In Progress”, and “Done”, helping monitor progress, prioritise work, and keep the project organised and on schedule.

Overall, combining Agile, Scrum Lite, and Prototyping provides a flexible, structured, and user-centred method for completing the project effectively.

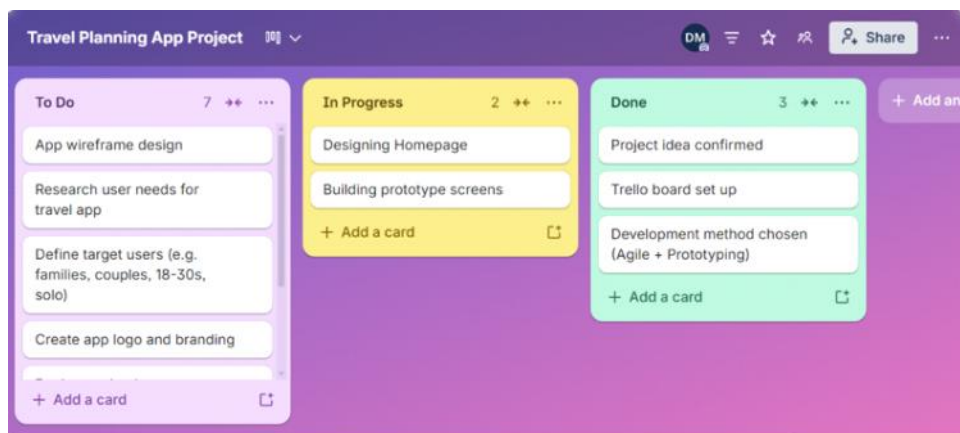


Figure 4 : Kanban Board (Trello)

Task 3 Q2

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Design work

The TripSphere Travel Planning Application was supported by a set of wireframes and a navigation flowchart created during the design phase. These designs outline the structure, layout, and user journey before any development begins. Producing them early helps plan out how the application will look and function, ensuring the interface is clear, consistent and easy to follow. This provides a solid starting point for the prototype and makes the development process more organised.

The Homepage Wireframe shows the applications main landing page. From here, users can begin planning a new trip or access previously saved trips

W3Schools was used as a reference to review basic layout structures and common interface elements, which helped inform the design of the TripSphere wireframes W3Schools [8].

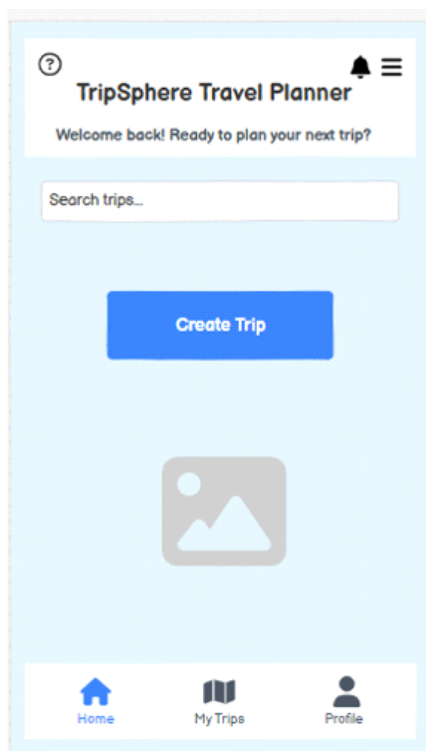


Figure 5 : Homepage Wireframe

The Create Trip Wireframe displays the details of a planned trip, including fields for entering the destination, travel dates, and planned activities. It also provides options for editing the trip or adding new items.

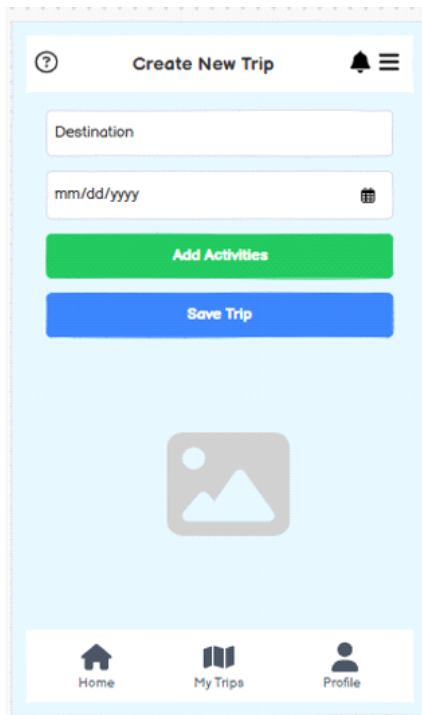


Figure 6: Create Trip Wireframe

The Trip Itinerary Wireframe presents the users planned activities in an organised schedule, with options to edit existing activities or add new items as the itinerary develops.

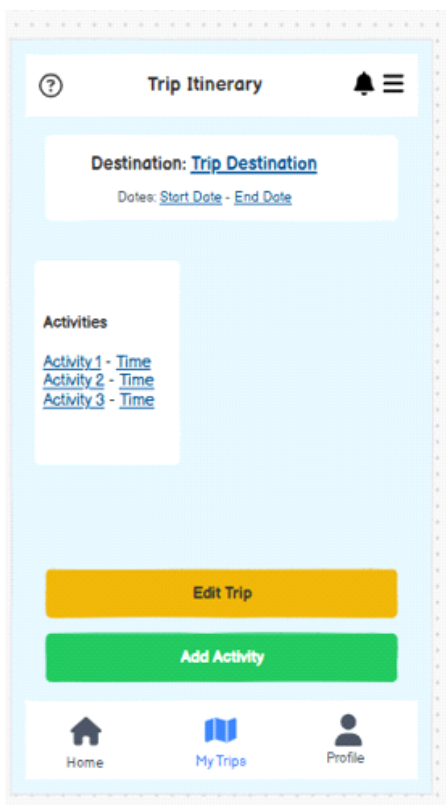


Figure 7: Trip Itinerary Wireframe

In addition to the wireframes, a navigation flowchart was created to illustrate the applications main navigation. The flowchart shows how users move between the homepage, trip creation, itinerary management, saving their plans, and viewing completed itineraries.

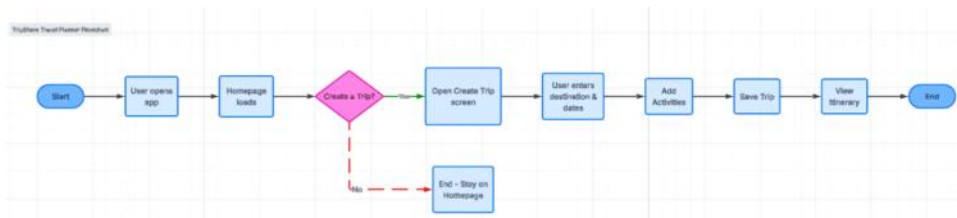


Figure 8: Navigation Flowchart

Together, these design works ensure the application follows a logical structure and support early planning without requiring detailed technical implementation. They form the foundation of the project's design phase and guide the development of the TripSphere prototype.

Task 3 Q3

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Initial practical implementation

The initial practical implementation of the TripSphere Travel Planning Application was completed using the PyCharm development environment. Screenshots have been included to show the progress made during development, from creating the initial designs to building the application's structure and key features.

These screenshots show how the project progressed from the planning and design stage into the early stages of development. They provide evidence of the project setup, interface design, and initial testing carried out during the development of the TripSphere prototype.

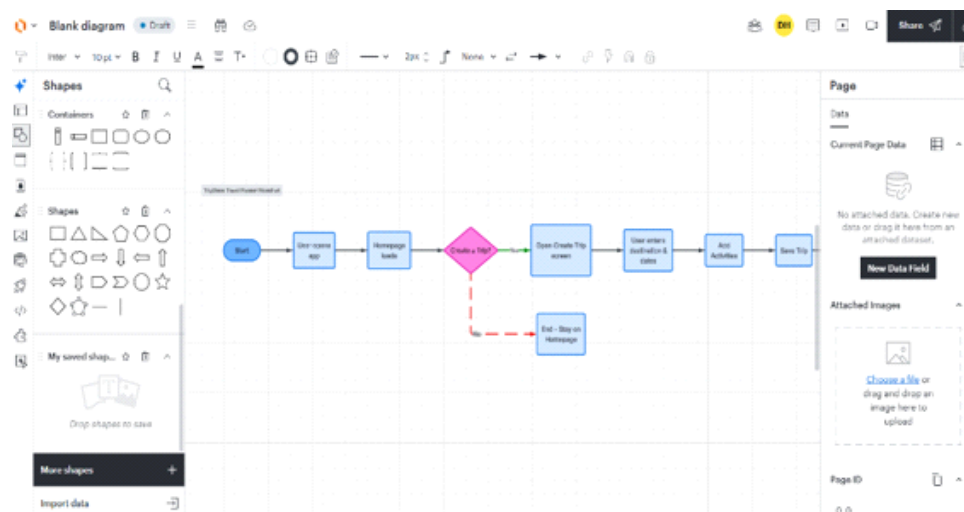


Figure 9: TripSphere Process Flowchart

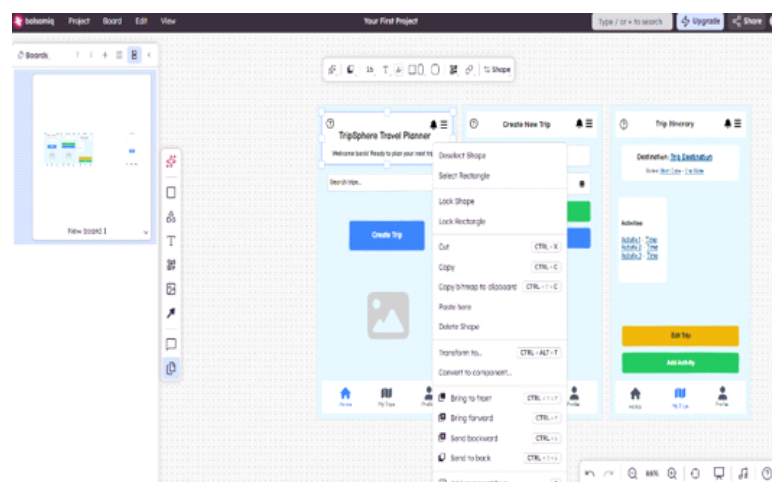


Figure 10: TripSphere Interface Design Screenshot

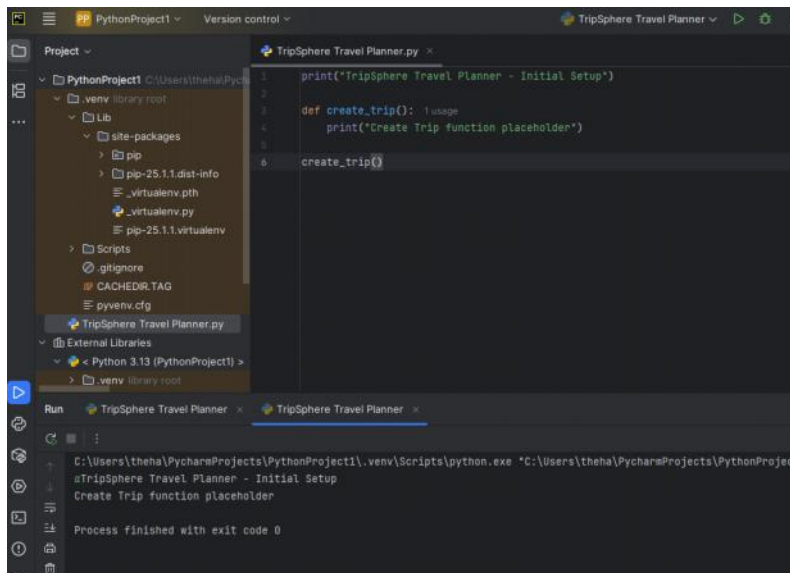


Figure 11: Python Prototype Setup and Execution in PyCharm

References

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- [1] D. H. Pink, *A Whole New Mind*, New York: Riverhead Books, 2005.
- [2] F. Montresor, "The 7 technologies changing your world," World Economic Forum, Jan. 19, 2016. [Online]. Available: <https://www.weforum.org>. [Accessed: 16-JUN-2026].
- [3] T. Kelley and D. Kelley, *Creative Confidence: Unleashing the Creative Potential Within Us All*. New York: Crown Business, 2013.
- [4] H. L. Gantt, *Work, Wages, and Profits*, Engineering Magazine, 1910.
- [5] K. Schwaber and J. Sutherland, *The Scrum Guide*, Scrum.org, 2020.
- [6] K. Rubin, *Essential Scrum: A Practical Guide to the Most Popular Agile Process*, Addison-Wesley, 2012.
- [7] J. Nielsen, *Usability Engineering*, Morgan Kaufmann, 1993.
- [8] W3Schools, *HTML Layout Elements and Techniques*. Available: https://www.w3schools.com/html/html_layout.asp. [Accessed: 1 Jul. 2026].

Appendices

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Appendix A - Tools Used During the Project

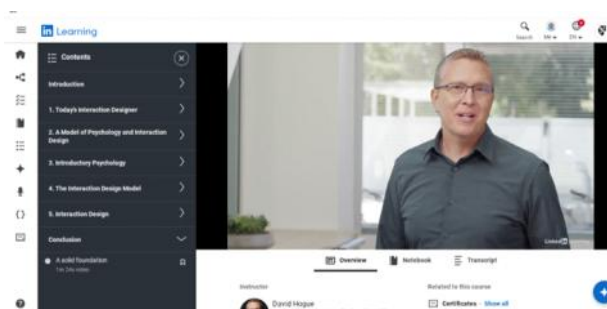
This appendix shows the following tools were used to support the design and development of the TripSphere Travel Planning Application:

1. Balsamiq – used to create wireframes for the Homepage, Create Trip, and Trip Itinerary screens.
2. Lucidchart – used to produce the navigation flowchart showing how users move between key screens.
3. Trello – used to organise tasks using a Kanban board with “To Do”, “In Progress”, and “Done” columns.
4. PyCharm – used for developing the Python prototype.
5. Microsoft Copilot – used to support idea generation and improve clarity during the risk analysis and development method sections. All final content was written and verified by the student.

Appendix B - Evidence of LinkedIn Learning Course

This appendix includes screenshots showing engagement with the LinkedIn Learning course Foundations of Interaction Design. These images provide evidence of progress through the course.

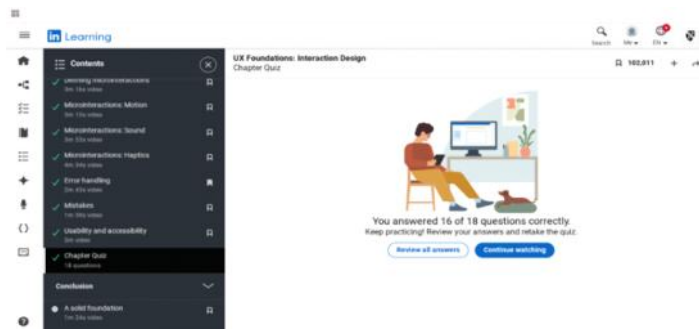
1. LinkedIn Learning Overview – Screenshot showing course structure and instructor introduction.



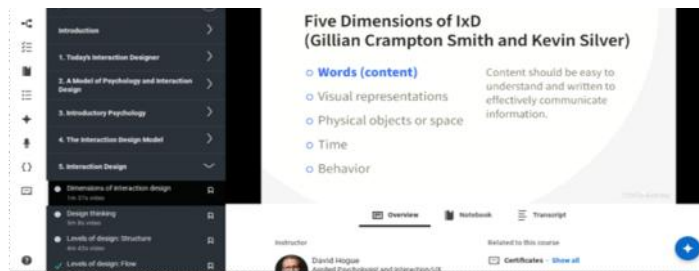
2. Design Thinking – Screenshot showing the Discover–Define–Develop–Deliver model.



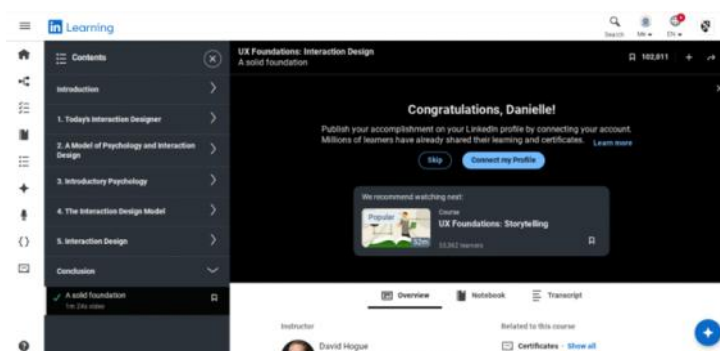
3. Interaction Design Progress – Screenshot showing course progress and learning content.



4. IxD Dimensions – Screenshot showing the five dimensions of interaction design.



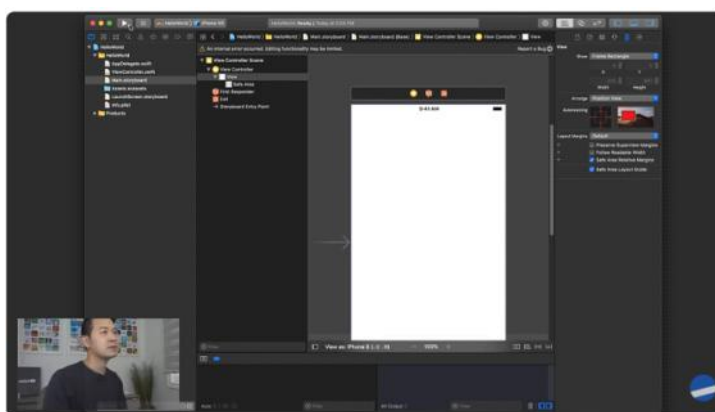
5. Course Completion – Screenshot confirming successful completion of the course.



Appendix C – Additional Learning Resource (YouTube Tutorial)

This appendix includes screenshots from a YouTube tutorial titled *How to Make an App for Beginners*. These screenshots provide evidence of additional independent learning carried out alongside the TripSphere project.

1. YouTube App Tutorial – Screenshot showing the Xcode interface and project setup.



How to Make an App for Beginners (2020) - Lesson 1

