# hedgecreek™

# Dynamic Matching Platform

## Advanced Software Engineering Student Project

Project **Pairwise**

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Privileged Information

# Introduction

Hedgecreek International develops new business for forward-thinking organisations. Unlike traditional consultancies we do not only design growth plans; we also handle the commercial execution of strategies. This unique business development solution enables companies to develop specific opportunities without having to scale or build internal teams. Hedgecreek's clients range from SMEs to large corporates. Further details are available in this **quick intro**.

## Business Development

Business Development involves identifying, creating, and capturing long-term value for an organization. The role typically operates at the intersection of strategy, marketing, sales, product development, and operations.

Hedgecreek's business development services are structured around its Five Steps Model™; a practical marketing framework that prioritises clear and actionable steps to create pragmatic routes to commercial results. This approach is based on 25 years of international expertise and includes:

- Finding new markets, customers, business models
- Building strategic partnerships, channels, networks
- Structuring and negotiating complex business deals
- Developing new products, services, delivery methods
- Optimizing or creating processes for long-term growth

## Data Collection & Analysis

Part of the Five Steps process consists of profiling and matching data to define opportunities in specific industries, markets, segments, and geographies. Hedgecreek uses multiple AI-tools for this but wants to intelligently optimise, automate and further integrate this step. The following chapter describes the assignment and potential student learning objectives in detail.

## Opportunity

Hedgecreek believes the assignment can provide an excellent learning opportunity for ambitious students that want to work on advanced software solutions that have real impact for international business. Hedgecreek understands the importance of collaboration and will be closely involved during the project. A member of our team will be available to provide guidance to the student team during (weekly) stand-ups, online and occasionally on-site in Eindhoven or Tilburg. We are open to consider traineeships or (part-time) work for students after completion of the project.

# Assignment

Develop a dynamic matching platform in which users can cluster, weight, and visualize data. You will build the front-end interface and the logical model in the back end, working on UX, matching algorithms, and visualizations in a modern tech stack.

- Link clusters, tabs, and subclusters in a logical data structure
- Integrate ElasticSearch or an alternative for smart search functionality
- Implement microservices on Azure with a scalable design

## 1. Background

Hedgecreek International wants to develop a scalable and generic match engine that can be deployed in various international business and market contexts. At present, gathering and validating data for potential matches requires substantial manual work, which can be inefficient and sensitive to errors. To make this process more streamlined, scalable, and future-proof, Hedgecreek has chosen an approach that integrates AI, human expertise, and modern data infrastructure.

## 2. Bottlenecks

Few solutions allow users to set the value of criteria from multiple perspectives (e.g. population, GDP, business profile, etc.). In addition, there is often a lack of overview in clusters and weight allocations.

## 3. Challenges

Technically designing a flexible structure with multiple layers (clusters, subclusters, data points) and developing an intuitive user interface that allows these structures to be managed and weighted.

## 4. Mission

A working MVP (Minimum Viable Product) of a modular match engine with an interface that enables non-technical users to group data points themselves, assign weights per cluster and per perspective, and see how well two or more profiles or datasets match as indicated by an overview of matching percentages.

## 5. The assignment is successful when:

- There is a working interactive prototype with realistic datasets
- The interface is intuitive for non-technical users
- The system displays matching percentages per level (point, cluster, total)
- The results are placed in Notion
- Technical choices are substantiated and documentation transferable to Hedgecreek

## 6. Goal and assignment formulation

Develop a generic, modularly structured match engine with dashboard functionality and a user-friendly interface, in which multiple perspectives can be weighted and data points are visualised in clusters.

## 7. Potential requirements

- Stack: NextJS, Tailwind, Shadcn, Azure Microservices
- Preferably use open-source tools (such as ElasticSearch or alternatives)
- Privacy by design when handling user data
- UX challenge: interface must remain intuitive despite complexity
- Matching logic must be documented and explainable (transparency)
- Use Notion as single source of truth (to store results)
- Weight allocation must be visual and logical

For inspiration:
- Skill-based matching in platforms such as OpenEmbeddings
- ElasticSearch + Kibana dashboards
- Graph structures & weight matrix applications (Neo4j, GraphQL, etc.)

## 8. Project impact

- Efficiency: faster potential matches between supply and demand in various contexts
- Flexibility: real-time control in setting matching criteria without depending on IT teams
- Accountability: transparent insights into how match decisions are made and improved
- Scalability: the engine is generically deployable in multiple business units or propositions
- Equality: data-based matching for fact-based connections between people and systems

## 9. Possible learning objectives for students

- Apply full-stack development skills in a real-world setting
- Design and implement a match engine based on user needs
- Develop a non-technical UX for data-driven matching tools
- Learn to prioritize and document in an iterative development process
- Collaborate with multiple stakeholders with different perspectives
- Work in a project team and regularly coordinate with the client