DATA70200 Applying Data Science P03
Industry Partner: ⬖ G E O D E S I G N H U B

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Aims and Objectives

- What is **Geodesignhub** (www.geodesignhub.com)?
  - A map-based collaboration software that facilitates negotiations.
  - Software aim: to provide a systematic way to create and analyse alternative futures for a place and enable people from different disciplines to come together and negotiate over these ideas
- Our project aims?
  - To allow investors to quickly and accurately see future profits to make correct decisions.
  - We will build an excellent 30-year financial model to predict the benefits of different regions through financial data based on housing, employment and green-space indicators with reference to *Geodesignhub designs* from their API
- What are Geodesignhub designs?
  - Compilations of shapes on a map which represent areas of improvements or interventions that include metadata in them.

The Treatment and Analyses of the Dataset(s)

- Instead of a traditional dataset, we work with various design combinations for a given land parcel representing different property types, such as:

  a) Green Infrastructure (GI)
  b) Blue Infrastructure (BI)
  c) Energy Infrastructure (EI)
  d) Transport (TRANS)
  e) Agriculture (AG)
  f) Industry and Commerce (IND)
  g) Institutional (INST)
  h) Low Density Housing (LDH)
  i) High Density Housing (HDH)

- Our task involves extracting the property type and its coordinates, and using the allocated area to develop a financial model for analysis.

Stage of Implementation and the Person in Charge

1. **Financial Modelling Team – 10806957, 11361453, 11337396**
➤ Background information & Research on Financial Modelling
➤ Divide into teams to research on different areas (GI, BI, EI/ AG, TRANS/IND, INST, LDH, HDH)
➤ Integrated Planning
➤ Model development
➤ Model Testing & Interviews with Stakeholders

2. **Report and Outputs Team – 11338133,11048557**
➤ Test the model:
     Check whether the logic and formulas of the model are correct
➤ Validation and tuning:
     Validate the model and make adjustments as needed
➤ Reporting Tool :
     Explore reporting tools to build an interactive and effective visualisation
➤ Reporting and Presentation:
     Collate model results and insights into reports to share with stakeholders.

Main Challenges and Limitations Encountered During the Implementation Stage

- Technical Challenges in Data Processing:
  - GeoJSON and financial data may be complex, leading to potential difficulties in data structuring, cleansing, and transformation.
- Financial Analysis Challenges:
  - Financial modelling requires a detailed understanding of investment returns and project management
  - Assumptions need to be accurate and practical
- Challenges in Team Communication and Report Writing:
  - The team is divided into two groups focusing on financial modelling and report production, which need to communicate progress timely.

Gantt Calendar of Project Activities

Gantt Chart

Activities (2024/1/29 – 2024/5/8):
- Group Formation
- Kickoff Meeting with Industry Partner
- Research Geodesign API and JSON Structure
- Financial Modelling Team Research
- Report & Outputs Team Research
- Progress/Q&A Meeting with Industry Partner
- Finalised Project Integration Planning
- Group Meeting & Poster Plan
- Poster Preparation
- Development - Financial Modeling
- Development - Report and Outputs
- Biweekly Meeting with Industry Partner
- Final Poster Preparation and Practice
- Poster Presentation Day
- Integrated Project Development
- Final Report Writing
- Stakeholder Interviews
- Final Report Submission