**HOMEWORK WEEK 2**

**Team: Kim, Yehjoon, Fardowsa, Wendy, Lydia, Isabelle**

*This week’s homework will be purely Project based. You need to work as a group and the homework will be submitted by one of the members of your group. List the other members of your group in the document, so that your instructor can mark every student.*

*1. Your group needs to decide what kind of project you are going to work on and lock in your decision.*

*2. You need to submit a free style paper that describes your project on a high level. Please cover the following questions:*

*1. What kind of data research and analysis are you going to take on?*

*2. What industry or areas does it cover?*

*3. What questions are you planning to answer?*

*4. What data sources are you planning to use?*

*5. Describe the team approach to the project work: how are you planning to distribute the workload, how are you managing your code, how are you planning to work on your project?*

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**Data Analysis Project**

**Variation in internet access by region across the UK, investigating links to socio-economic factors**

**Team: Kim, Yehjoon, Fardowsa, Wendy, Lydia, Isabelle**

Project Aims

Our project aims to investigate the relationship between internet infrastructure/ accessibility and socio-economic factors in communities across the UK. We will produce a report detailing our findings including visualizations of the data trends in the form of graphs. The project is relevant to audiences of two areas/industries: i) Government & Social Services, ii) Telecommunications. Our report should provide an overview picture of disparities across the UK and insight into possible links to socio-economic factors. This will allow the audience to better understand the current situation and consider causes and potential solutions with regard to improving equality of access.

Questions to Answer

We have identified 3 questions which we aim to address with our project:

1. **What is the nature of the relationship between internet infrastructure and income at this moment in time?** Is there a link between less economically advantaged areas and less developed infrastructure? Does this highlight a social issue?
2. **What is the difference of infrastructure between Rural and Urban areas?** Can we identify particular areas where a Telecommunications company can invest into schemes in certain areas?
3. **Can we identify trends over time?** We aim to review the success of existing schemes where an investment was made into an area, and also to be able to predict areas for future investments.

Data Sources

We have identified three sources of data that we will need.

1. We will be using the NOMIS Labour Market Stats API for individual household income.

[**nomis labour market stats**](https://www.nomisweb.co.uk/query/construct/summary.asp?mode=construct&version=0&dataset=30)

1. We will combine this with the OFCOM Connected Nations data about broadband availability by parliamentary constituency and local authority.

[**Ofcom connected nations**](https://www.ofcom.org.uk/research-and-data/multi-sector-research/infrastructure-research/connected-nations-update-summer-2021)

1. We will download data from the UK Government which divides all locations in the UK into either Rural or Urban, which is based on the 2011 Census.

[**rural urban classification**](https://www.gov.uk/government/collections/rural-urban-classification#2011-census-rural-urban-classification)

Approach to Project Work

**Division of tasks:**

As we wish to use this opportunity in order to solidify our skills and learn new ones, we have decided that we will divide the workload into sub-projects based on the questions defined previously. This will allow us to gain experience of the full range of data analysis stages from data cleaning through to visualization. This will also enable us to work efficiently as we can each work concurrently on smaller tasks and manage our individual commitments rather than waiting on outputs from other team members. We will then combine our efforts to produce the final report. We have allocated questions to team members as follows:

Question 1: Wendy & Lydia

Question 2: Yehjoon & Kim

Question 3: Fardowsa & Isabelle

**Approach to work:**

We have adapted the AGILE Scrum framework in order to coordinate our teamwork on this project. We have assigned Kim to be our team leader, to keep an overview of the project and coordinate tasks for other members of the team. We aim to hold two meetings a week in which we discuss the progress we have made, assign tasks and discuss any issues. As we also have other commitments, we do not hold daily scrums, however we have regular check-ins in a group discord, with various channels for each sub-team as well as group chats where we can quickly share ideas or raise issues.

All our code will be saved in a shared GitHub repository.