**Analytics Project Goal: create something useful and helpful.**

*Your analysis should discover or showcase some useful findings to provide **insightful data** into **specific questions.***

| | | |
|---|---|---|
| Prep | Create Slack channel & add marker | SK 13th Nov |
| | Choose project management interface | GitHub projects (decided in meeting 13th Nov) |
| | Create Project, Breakdown tasks & add to project manager | TN - 18th Nov |
| | Create a GitHub Repo, add marker & CFG | TN - 18th Nov |
| **Step 1: Frame the problem**<br><br>Data availability will dictate topic!<br><br>*Project creates something useful / helpful*<br><br>*Objectives must be clearly defined*<br><br>*Formulate exact questions that we are trying to answer/*<br>*Formulate exact problems that we are trying to solve* | The project **objective**(s) is/are…. | Contained in HW2 |
| | The project performs the **useful / helpful function** of… | |
| | The project **addresses the following questions / problems**…. | |
| | Analysis Q1: | |
| | Analysis Q2: | |
| | Analysis Q3: | |
| | Analysis Q4: | |
| | The project addresses these questions / problems **by providing the following insightful data**…. | |
| | The project **will discover / showcase the following useful findings**… | |
| | The **chosen analysis topic** is… | |
| | The analysis **topic is relevant to the project** objective becauses…. | |
| **Step 2: Collect the raw data**<br><br>*YOU NEED TO FIND GOOD DATA*<br><br>*Crucial: find suitable, relevant datasets (online sources, data libraries, APIs etc)*<br><br>*Data sources utilised in your research and analysis* | Data gathering: series of data captured for a specific time period, relevant records, values etc. | |
| | Where are you going to get data for your analysis? | Teleport for salary data, exchange-rate for currency, plus other adjacent sources for paralell analysis variables |
| | Use at least one **API to fetch data** | Teleport (x3 calls), exchange-rateapi.com |
| | Will you also download CSV or XLSX from somewhere? | Gender parity info (OECD), geonames country info, cost of living (World Data) |
| | How many different resources were used? | 5 (or 4 if World Data cost of living stuff isn't used) |
| | **Combine** resources to expand data series | All API data interwoven through the python code into one output csv. Then, this was joined/merged with other data sources using pandas in Juptyer Notebook part 2. Data was further normalised through SQL database creation. |

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| | The datasets are relevant because… | Salary information comprehensively provided for 52 jobs across 198 countries |
| | The dataset is suitable because… | As above (comprehensive and consistent variables) plus we can convert the salary information from the other Teleport data provied (i.e. currency code) using currency exchange rate data to translate the figures into those a UK analyst or audience can relativise. |
| **Step 3: Prepare the data** for analysis<br><br>*Did students deal with missing or skewed values?* | Recommended but optional? Build a **DB** with data arranged in **tables** | Completed |
| | **Clean** the data | Records without salary data excluded (i.e. AQ Antartica), three mismatched currency codes BYR, VEF, MRO corrected and one problematic country code (NA Namibia manually corrected). Corrected this manually in database but also implemented fixes in the python code and jupyter notebook directly to elimate errors |
| | **Enrich** data with required additional values etc. | Salary data (including GBP conversion) enriched with paralell data about countries (population, area (i.e. population density metric)), currency code, gender pay parity metric and cost of living metric from World Data. All these were combined into a large dataframe that could then be split out according to the metrics which were desired for comparison and analysis. |
| | Correct handling anomalies: deal with missing / skewed values | See above |
| | Correct handling anomalies: How did they solve these issues? | Explained in analysis visualisation section, did specific visualisations (box plots and heat maps and distributions) to explore this |
| **Code:** Steps 3, 4, 5, 6<br><br>*All members must contribute some elements of code.* | **Python** code script<br>in **Jupyter** Notebook<br><br>*Has clear **structure** & defined **sections***<br><br>*Demonstrates clearly defined and accomplished stages of data sourcing, pre-processing, evaluation and visualisation.* | **Section: loading data - Jupyter Notebook Part 1 and Part 2**<br>**Section: cleaning data - Jupyter Notebook Part 2**<br>**Section: transforming data - Jupyter Notebook Part 2**<br>**Section: data analysis - Jupyter Notebook Part 2**<br>**Section: data visualisation - Jupyter Notebook Part 2**<br>**Section: data reporting - Jupyter Notebook Part 2**<br>Use at least one API to fetch data<br>Effective use of Python - - Jupyter Notebook Part 1 for data retrieval, transforming, processing and combination.<br><br>Jupyter Notebook Part 2 uses Python to combine data (pandas), clean data, refine into subsets and matplotlib and numpy to analyse and visualise the data<br>Effective use of key scientific packages: **Pandas**, NumPy, **MatplotLib** |

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| | | Verify: an instructor or assessor can run submitted scripts with the files provided and get **expected results.** |
| | Bonus code elements: Yep, all of them! | 1. Machine Learning<br>2. SciKit Library<br>3. SQL database |
| **Step 4: Explore** the data | **Review, understand** the data, | In Jupyter Notebook Part 2 and summarised in Canva documentation |
| | and perform **summary statistic**s with **descriptive analysis**. | |
| | What evidence did the team present to support their findings? | |
| | The core questions have been answered as follows… | |
| **Step 5: In-depth analysis**<br><br>*Credibility of research / analysis conclusion.* | Usually Machine Learning, AI analysis using regression, mathematical model building -- predictive analysis. | In Jupyter Notebook Part 2 and summarised in Canva documentation |
| **Step 6: Communicate** results | data visualisation | Effective use of Matplotlib to present findings |
| | findings summary | All in Jupyter Notebook 2 |
| | interpretation of results | |
| | recommendations | |
| | conclusions | |
| Step 6: **README** File | Contains clear instructions how to execute the code. An instructor or assessor should be able to run submitted scripts with the files provided and get expected results. | README completed and uploaded to GitHub. All team members participated in testing both notebooks rigorously and contributed to collecting a list of dependencies. |
| Step 6: **Project Documentation**<br><br>Used to assess your project work and | Project Document: Overview | Concise yet detailed - explain every key point. Max 5-7 A4 pages long |
| | | Include diagrams, and images with descriptive captions. |
| | Project Document: INTRODUCTION | ● Aims and objectives of the project |
| | | ● Roadmap of the report |
| | Project Document: BACKGROUND | ● Any specific details about the project based on your chosen topic. |
| | | |
| | Project Document: SPECIFICATION & DESIGN | ● Requirements technical and non-technical |
| | | ● Design and architecture |
| | Project Document: IMPLEMENTATION AND EXECUTION | ● Development approach and team member roles |
| | | ● Tools and libraries |
| | | ● Implementation process (achievements, challenges, decision to change something) |

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| Used to assess your project work and understand your approach to the project<br>delivery. Insight into your architecture, testing and implementation strategy as a team. | | ● Agile development (did your team use any agile elements like iterative approach, refactoring, code reviews, etc) |
| | | ● Implementation challenges |
| | Project Document: DATA COLLECTION | ● What information do you need? |
| | | ● What information is available? |
| | | ● What is your data source? |
| | | ● Describe how you collected the data (e.g., if you have used an API, briefly describe it). |
| | Project Document: CONCLUSION (Evaluation) | Evaluation of Project (confirmed by Stavros).<br>Limitations of project / data,<br>what went well,<br>what didn't go well (what we would change if we did it again)<br>what we would do if we could extend the project / Part 2 (further research options)<br>comments about any lack of resources / knowledge which may have assisted, etc |
| Step 6: **Project Group Activity Log** | Individuals record their own work | |
| | **Collate all tabs** into a single **pdf** at the end | |
| Delivery | Deadline project: 11.59pm, Sunday the 17th December 2023. | |
| | Share presentations with your instructors shortly before Thurs 21st Dec. | |
| Step 6: **Presentation** (Thurs 21st Dec) | Produce **Powerpoint Slide Deck** | |
| | Project to be **delivered in a group** | |
| | Should last around **2-3 min**utes, max 5 mins. | |
| | Use **slide deck** or similar (e.g. Google Slides, Prezi, Canva) | |
| | Include project **demo** where applicable. | |
| Submission Elements | 1. A **Project Document** (PDF preferably) which reports on project work with clear project specification | |
| | 2. **Source code** for the project (Jupyter notebook file) | |
| | NB: share via GitHub with instructor and https://github.com/CFGer | |
| | 3. Separate **data files**: csv, xlsx, txt etc. Provide a file where your API fetched data is saved. | |
| | 4. **README** file with clear instructions how to execute the code. An instructor or assessor should be able to run submitted scripts with the files provided and get expected results. | |

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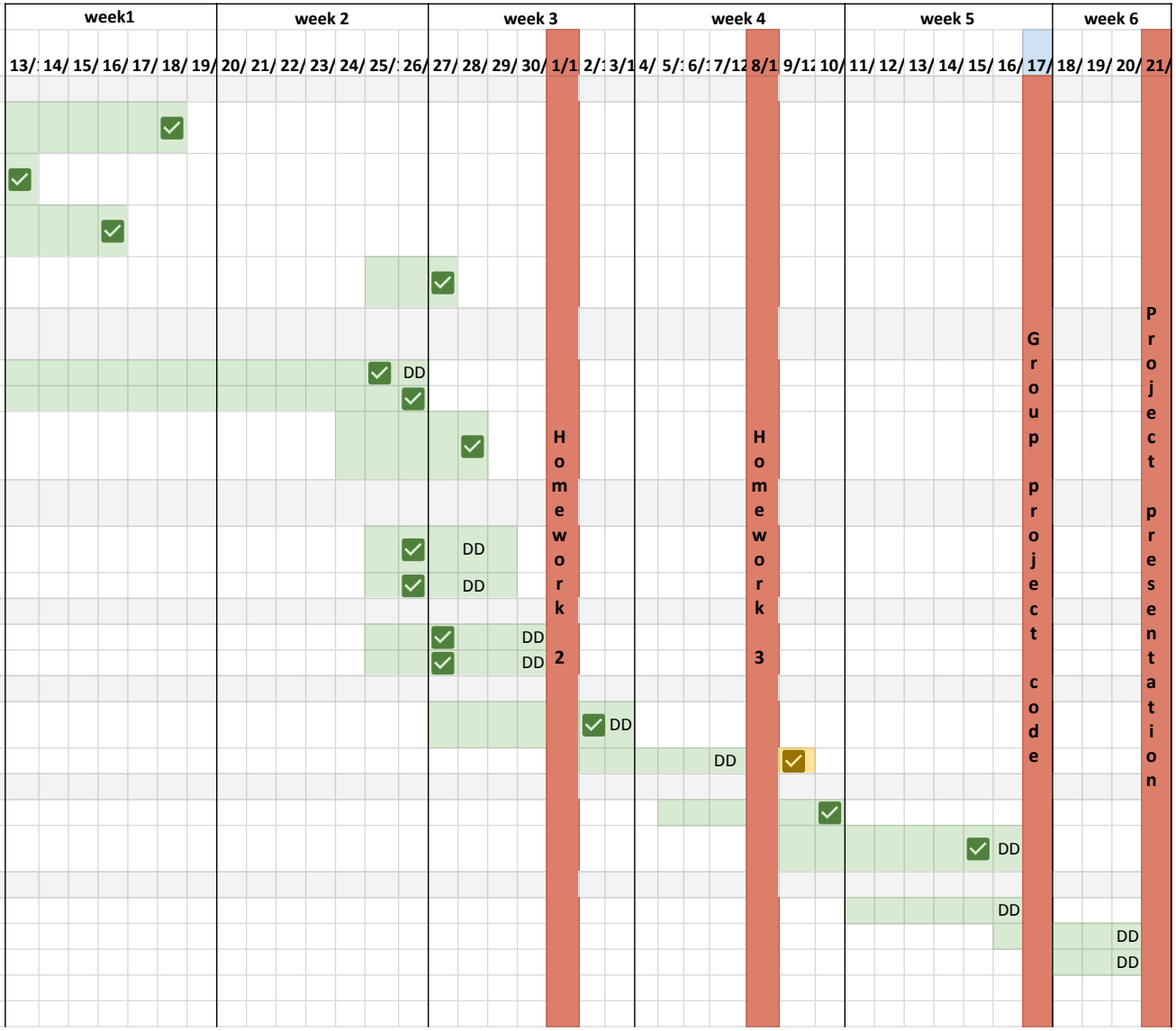
| | 5. Comined individual **Project Activity Log** (xls) - 1 tab per person. Share with your assigned marker via Slack **as a PDF!!** | |
| | 6. **PPT slide deck** (2-3 min length max) with key points for presentations. Share with your instructors shortly before Thurs 21st Dec. | |
| | | |
| | | **Completed** |
| | | **Needs to be done** |

| Index | Task | Start date | End date | Dependancies | Owner |
|---|---|---|---|---|---|
| **0** | **Team approach preparation** | 13/11/2023 | | | |
| 0.1 | Create Github repository (HW2 Q4.3) | 13/11/2023 | 18/11/2023 | | Tatiana |
| 0.2 | Create SWOT analysis (HW2 Q4.2) | 13/11/2023 | 30/11/2023 | | Whole team |
| 0.3 | Create project log (HW2 Q4.1) | 13/11/2023 | 16/11/2023 | | Tatiana |
| 0.4 | Create timeline/gantt chart (HW2 Q4.4) | 25/11/2023 | 28/11/2023 | | Alicia |
| **1** | **Look for an appropriate dataframe** | 13/11/2023 | | | Whole team |
| 1.1 | Decide API to use | 13/11/2023 | 26/11/2023 | | Whole team |
| 1.2 | Decide Dataset to use | 13/11/2023 | 26/11/2023 | | Whole team |
| 1.3 | Determine potential issues from the dataframe and how to overcome it (HW2 Q3) | 24/11/2023 | 28/11/2023 | 1.1, 1.2 | |
| **2** | **Determine Problem and Solution to cover** | | | | |
| 2.1 | Problem and questions to tackle (HW2 Q1) | 25/11/2023 | 28/11/2023 | 1 | Tatiana / Sam H |
| 2.2 | Target audience (HW2 Q2) | 25/11/2023 | 28/11/2023 | 1 | Alicia / Tatiana |
| **3** | **Data collection** | | | | |
| 3.1 | API connection in Python | 25/11/2023 | 30/11/2023 | 1 | Sam K / Nicola |
| 3.2 | Set tables into SQL | 25/11/2023 | 30/11/2023 | 1.2 | Sam H |
| **4** | **Data processing** | | | | |
| 4.1 | Connect dataframes to jupyter | 27/11/2023 | 3/12/2023 | 3 | Sam K / Nicola |
| 4.2 | Data cleaning | 1/12/2023 | 7/12/2023 | 4.1 | Whole team |
| **5** | **Data Visualization** | | | | |
| 5.1 | Define plots to show | 7/12/2023 | 10/12/2023 | 4 | Whole team |
| 5.2 | Write plots code in jupyter Notebook | 9/12/2023 | 16/12/2023 | 5.1 | Nicola / Sam K / Alicia |
| **6** | **Project Presentation** | | | | |
| 6.1 | Project documentation | 11/12/2023 | 17/12/2023 | 1 to 5 | Whole team |
| 6.2 | Create presentation | 16/12/2023 | 21/12/2023 | 5 | Whole team |
| 6.3 | Present! | 21/12/2023 | 21/12/2023 | 6.2 | Whole team |



| Link | Title / Source | Area | Topic | Comments | Added |
|---|---|---|---|---|---|
| | | | | | |
| https://data.oecd.org/price/housing-prices.htm#indicator-chart | OECD | Housing Prices | Housing Prices per country | | SK |
| https://data.oecd.org/earnwage/gender-wage-gap.htm the salary wage gap in % from 1970 to 2022 per country if we want to use it | OECD | Gender wages | Gender Wage Gap by country. csv contains data over time | | AMG |
| https://data.oecd.org/earnwage/wage-levels.htm#indicator-chart | OECD | Wage levels | Wage Levels (high low) by country. csv contains data over time | | AMG |
| https://data.oecd.org/earnwage/average-wages.htm#indicator-chart | OECD | Wage levels | Average wages by country. csv contains data over time | | AMG |
| https://data.oecd.org/price/price-level-indices.htm#indicator-chart | OECD | Price levels relative to GDP | Price level indices: ratio of country purchasing power relative to market exchange rates. | | SK |
| https://www.geonames.org/countries/ | Geonames country codes | Country stats | Country codes (used by Teleport) and basic country stats | | SK |
| https://www.worlddata.info/cost-of-living.php | World Data | These are different angles on the same data about cost of living per country | Cost of Living 'Index'. Comparison chart of worldwide cost of living | | SK |
| https://www.worlddata.info/quality-of-life.php?expats=0&stability=1&rights=1&health=1&safety=1&climate=1&costs=50&popularity=1#ranges | World Data | | Adjustable weighting chart of worldwide cost of living. Can just use 'costs & income' as the only ranking factor. Could potentially use this to contrast with our per country/salary data | | SK |
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| https://teleport.org/cities/<br>https://developers.teleport.org/api/getting_started/<br>https://developers.teleport.org/api/reference/#/<br>https://developers.teleport.org/api/resources/ | Main API Datsource<br>Teleport | Country & City data, esp salaries for common jobs and 'quality of life' | Country Level Info<br>https://api.teleport.org/api/countries/ - lists 252 countries, won't have information on all of them<br>https://developers.teleport.org/api/resources/CountrySalaries/ - has salary percentile information for lists of different job | | |
| | | | | | |
| Discarded Ideas / Sources | | | | | |
| NVD & CVE<br>https://nvd.nist.gov/developers/vulnerabilities<br><br>Sample CVE query via API<br>https://services.nvd.nist.gov/rest/json/cves/2.0/?pubStartDate=2023-10-16T00:00:00.000Z&pubEndDate=2023-11-15T23:59:59.999Z&resultsPerPage=2000&noRejected<br><br>CWE<br>https://cwe.mitre.org/about/new_to_cwe.html | National Vulnerability Database (NVD)<br>Common Vulnerability & Exploits (CVE)<br>Common Weaknesses Enumeration (CWE) | Cybersec | See Slack post 1:<br><br>https://autumncfgdegree2023.slack.com/archives/C06507J102K/p1700045181058639?thread_ts=1699956459.041179&cid=C06507J102K<br><br>See Slack post 2:<br>https://autumncfgdegree2023.slack.com/archives/C06507J102K/p1700127853337249?thread_ts=1699956459.041179&cid=C06507J102K | | SK |
| https://ico.org.uk/action-weve-taken/data-security-incident-trends/ | ICO DataSecurity Incident trends | Cybersec | **Advantages**<br>Reputable source: UK Information Commissioners Office<br>Great relevance: UK specific, cybersecurity<br>Recent! 2019 - 2023. Recently updated 1st Nov 23!<br>Analysis - scope: Raw dataset - ~~not yet analysed in form of a report - scope for us to actually find some observations.~~ Damn, they have produced an interactive display already using the data. We'd need to be able to say something different.<br>Large!: 119000 rows of data! | | SK |
| https://www.kaggle.com/code/bencaiello/cve-dataset | | Cybersec | CVE dataset. Wonder if we could cross reference this with MitreAtt&ck | | |
| https://www.kaggle.com/datasets/katehighnam/beth-dataset | | Cybersec | | | |
| https://www.unb.ca/cic/datasets/index.html | Canadian Institute of Cybersec data resources | Cybersec, multiple datasets | | | SGH |
| https://www.worldbank.org/en/publication/globalfindex#sec1 | The Global Findex Database 2021: Financial Inclusion, Digital Payments, and Resilience in the Age of COVID-19 | Global finances | Finance data by country, banked /unbanked, potential relevance to digital payments / crypto.<br><br>Very large, detailed dataset, worldwide<br>Reputable source | | SK |

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| https://www.ons.gov.uk/peoplepopulationandcommunity/healthandsocialcare/healthandlifeexpectancies/datasets/healthstatelifeexpectancyallagesuk | UK Health Dept, life expectancy | Health | | | SHS |
| https://www.reddit.com/r/datasets/s/jVZl3ZsZ64 | | Collection of datasets | | | SGH |
| https://vlckel.notion.site/vlckel/a360dea317234868a0f7cfb1ef249843?v=2923f79780214ec390b9f0fefbc1c002 | | Collection of datasets | | | SGH |
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| https://opendata.nhsbsa.net/dataset/english-prescribing-data-epd | English Prescribing Dataset | Pharma | | | NP |
| https://www.ons.gov.uk/peoplepopulationandcommunity/crimeandjustice/datasets/drugmisuseinenglandandwalesappendixtable | Drug Misuse England and Wales | Pharma | Data from 1995-2022 on drug misuse with demographics | | NP |
| https://www.ons.gov.uk/peoplepopulationandcommunity/crimeandjustice/datasets/natureofcrimefraudandcomputermisuse | ONS | Cybersec | UK reported cybercrime data (possibly could be merged with data from row 2) | | NP |
| https://www.kaggle.com/datasets/thedevastator/chemicals-that-may-contribute-to-disease | | Chemicals / Pharma | Chemicals That May Contribute to Disease | | AM |
| https://www.kaggle.com/datasets/thedevastator/chemicals-in-cosmetics-what-s-really-in-your | | Chemicals / Pharma | Chemicals in Cosmetics: What's Really in Your? | | AM |
| https://www.cisa.gov/known-exploited-vulnerabilities-catalog | CISA | Cybersec | Known Exploited Vulnerabilities Catalog | | AM |
| http://data.un.org/ | UN | Various | Big variety of topics regarding population, gender or energy among others per country | | AM |
| https://www.fao.org/faostat/en/#data | FAO | Various | Big variety of topics per country as Production, Food Security and Nutrition, SDG indicators, Food Balances, Trade, Prices, Cost and Affordability of a Healthy Diet, Food Value Chain or Climate Change: Agrifood systems emissions | | AM |
| https://digital.nhs.uk/developer/api-catalogue | NHS Digital, API Catalogue | Health | 117 API's related to NHS data | | SHS |
| https://biobank.ndph.ox.ac.uk/showcase/ | UK BioBank | Health | large-scale UK biomedical database and research resource | | SHS |
| https://digital.nhs.uk/data | NHS Data | Health | NHS Data on health conditions, hospitals, patients, reasons for admissions etc | | SHS |
| https://docs.google.com/document/d/187SQHePuWjo_4xl28B_wDs86FZgkcssG/mobilebasic | Google Sheet | Various | Websites with Data for Projects | | TN |
| https://www.unb.ca/cic/datasets/index.html | UNB | Cybersecurity | Canadian Institute for Cybersecurity datasets are used around the world by universities, private industry, and independent researchers | | TN |
| https://explore.data.parliament.uk/ | Parliament UK | Political | Election data (API works) | | NP |
| https://alpaca.markets/data | Market Data API > navigate to 'developers' | Various | Alpaca Data API is your new go-to stock data API for building trading apps & algorithmic | | TN |
| https://developers.google.com/apis-explorer/#p/ | Google API Explorer > | Various | There seems to be loads of options here > The Google APIs Explorer is is a tool that helps you explore various Google APIs | | TN |
| https://publicapis.dev/ | Public API | Various | With quite a lot of API options and we can go through it > A collection of public APIs for developers, categorized and crowdsourced. Animals, books, cryptocurrencies, development, music, weather and much more. ( | | TN |

**Data Question Ideas**

| Gathered datasets | Source |
|---|---|
| Salaries %iles of common jobs - by country | Teleport API |
| Salaries %iles of common jobs - by city | Teleport API |
| 2022 gender wage gap (column) | OECD csv |
| 2022 wage levels, high/low - by country (column) | OECD csv |
| 2022 average wages - by country (column) | OECD csv |
| Geonames country codes & basic stats (table) | Geonames table |
| Cost of living Index | World Data |
| Cost of Housing Index | OECD csv |

| | What dataset(s) will be drawn on to answer this question? | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Data Question (natural language)** | **Dataset 1** | **Dataset 2** | **Dataset 3** | **Analysis Steps** | **Visualisation** | Why is this Q / it's output **interesting**? | What is the output **useful** for? | **Who** is the Q / output useful **to**? |
| Which countries offer the highest salaries for {each job}?<br><br>Which countries offer the lowest salaries for {each job}? | Teleport salary data - country | | | * Compare salary data for job roles across countries rather than by individual country.<br><br>* Rank these from lowest > highest<br><br>* Add latitude and logitude of the country into the view. | * Ideally: a map of the globe which shows the average salary for a selected job, highlighting in particular (for example) the top 5 and bottom 5 salaries for that role | It will be interesting to see which countries offer the best and worst pay for different jobs.<br><br>Do certain countries offer the best pay for all jobs? Or does it vary by role? Are there any surprises in this?<br><br>Materially, is it better as a woman to live in a country where average wages for that job are lower than other countries, but where the gender pay gap has less impact? | Teleport only currently offers the ability to view it's salary data by country - it doesn't give the option to view relative salary levels across countries. In essence, our aggregation and visual comparison would extend the utility of Teleports' salary dataset | People wanting to assess, for a particular profession (i.e. their own!) where some of the best / worst places to live might be, based solely on potential average salaries for that job |
| What are the average salaries for different jobs, when adjusted by the OECD gender wage gap for that country?<br><br>Does the gender pay gap adjustment actually impact which is the best country for salary of {a particular job}? | Teleport salary data - country | OECD Gender Wage Gap (2022) | | * Calculate the average salaries for each role across different countries (as above)<br><br>* Use OECD gender pay gap percentages to calculate a new column of these average salaries by job across countries for women<br><br>* Analyse the impact this has upon the rankings of where the top 5 / bottom 5 countries are for salary for that job. Does the gender pay gap influence the rankings | * Bar chart the average salaries for each job across countries, basic vs the gender adjusted salaries.<br><br>* Highlight if / where the rankings of best / worst countries for pay has changed. | Seeing if a country level gender pay gap is significant enough to actually override the relative rankings of average salary levels.<br><br>For example, there may be two countries which have identical average pay bands for a particular job - paywise, it will be equally lucrative to do that job in either country. However, if one country has a significant gender bias, does that knock it down in the ranking, for those people who a gender pay gap would affect? | Evaluating the impact of the gender pay gap across different countries.<br><br>Does a large gender pay gap actually override average salary advantages in any country, for women? | Those interested in evaluating the gender pay gap particularly across different roles. For example, are there any professions which are particularly resilient to gender pay gaps, or to large gender pay gaps across the country as a whole?<br><br>Also, could inform practical decisions for those who might be disadvantageously affected by a gender pay gap - women, or those for whom women are the main breadwinners - regarding where they want to live if informed by their earnings potential. |
| How does Teleport's salary data (aggregated by country) compare to the OECD rankings of average wages by country? | Teleport salary data - country | OECD Average Wages - country (2022) | | * Aggregate Teleports salary-by-job-by-country into overall average salary level<br><br>* Optional: calculate and visualise the differences between values from both sources? | * A bar chart comparing Teleport with OECD average wages by country.<br><br>* A visualisation of the scale of the differences? Are there any particular countries where the data is particularly divergent? | Informs about the consistency of Teleport's data relative to the OECD data on the same/very similar metric | Benchmarking and judging the accuracy of Teleports salary data (which comes from ???) relative to the OECD statistics for average wages | Those interested in using Teleports' data and need to gauge the reliability (or at least the divergence) relative to the OECD gathered data. |
| Looking at the average salary by population density. To see a correlation using a scatter plot. Using regression analysis. step. further - using machine learning | | | | | | | | |
| Do the countries with the highest overall salaries have the highest pay parity? | | | | | | | | |

| Section | Section Weighting | Sub-section | Marks Available | Overall Weighting |
|---|---|---|---|---|
| Project Objectives & Final Result<br>*how well did the project meet the original objectives?* | 10% | Final results vs objective set | 5 | 5.00% |
| | | Performance of the final product | 5 | 5.00% |
| Code Implementation<br><br>*how well written and organised is the code?* | 50% | Use of Python and key analytical libraries (NumPy, Pandas, Matplotlib) | 10 | 9.10% |
| | | Defined and accomplished data sourcing, pre-processing and evaluation | 10 | 9.10% |
| | | Code layout & readability | 5 | 4.50% |
| | | Relevance of chosen topic | 5 | 4.50% |
| | | Data sources utilised | 5 | 4.50% |
| | | Visualisation of data | 10 | 9.10% |
| | | Handling of anomalies | 5 | 4.50% |
| | | Credibility of research and analysis conclusions | 5 | 4.50% |
| Project Documentation<br><br>*is there a clear intro, background, discussion and conclusion?* | 30% | Introduction | 10 | 5.00% |
| | | Background | 5 | 2.50% |
| | | Specifications and Design | 15 | 7.50% |
| | | Implementation and Execution | 15 | 7.50% |
| | | Result Reporting | 10 | 5.00% |
| | | Conclusion | 5 | 2.50% |
| Group Project Presentation<br><br>*how well did you present as a group? Was it clear and concise? Did you keep the audience engaged and answer questions effectively?* | 10% | Evidence of Teamwork | 5 | 3.30% |
| | | Presentation Skills | 5 | 3.30% |
| | | Understanding of the Project | 5 | 3.30% |