# Information Visualization

# CHECKPOINT I: Visualization Proposal

G21

**1. Domain**

ERASMUS is a European Union program which supports students to study at a school abroad for a certain time. Students can pick their destination from a list of partner schools offered by their school.

This project aims to visualise the flow of international students within the ERASMUS programme. More precisely it explores which destination students of different countries and degrees choose as their target destination.

Our visualisation can help future ERASMUS students to decide which country is the best for them by showing which countries are popular among students of similar degrees as well as which students decide to visit such countries. It also can be useful for schools, countries and European citizens to visualize how ERASMUS programme is utilized. For example, schools can see popular destination and can try to conclude new agreements with schools from this destination.

**2. Dataset**

**From Student\_Mobility\_2013-14.xlsx**

URL: <https://data.europa.eu/euodp/en/data/dataset/erasmus-mobility-statistics-2013-14>

This dataset contains information about students and institutions involved in the ERASMUS university exchange programme year 2013-14.

**From cost-of-living.csv**

URL**:** <https://www.kaggle.com/andytran11996/cost-of-living/version/3>

This dataset shows cost-of-living in different cities around the world. It includes e.g. cost-of-living-index, restaurant price-index, cost of apartment in city center, domestic beer price and much more.

**EUC\_for\_academic\_year\_2013\_2014.xls**

This dataset contains information about all universities participating in ERASMUS program for the year 2013-2014.

URL: <https://data.europa.eu/euodp/en/data/dataset/erasmus-mobility-statistics-2013-14/resource/9ad29b2b-d63f-4660-ba21-772925d57362>

**allCountries.csv**

Contains information about the cities - most importantly **coordinates** as well as the country where the city belongs and also the **localized names** of the cities: e.g. localized names for the Prague are PRG, Praag, Prag, Praga, Pragae, Prago, Prague, Praha and so on.

URL: <https://download.geonames.org/export/dump/allCountries.zip>

**countryInfo.txt**

Contains mapping between ISO (CZ) / ISO3 (CZE) shortcuts and basic information about counties as is the country name, area, population, currency etc.

URL: <https://download.geonames.org/export/dump/countryInfo.txt>

* + - 1. **3. Example Questions**

1. The work will try to answer basic questions about the reasons why students pick their final ERASMUS destination. It will try to discover if there exist any patterns in selected areas (for example gender).
2. What is the flow of students doing Erasmus between countries?
3. Which countries are popular for being an Erasmus destination?
4. Is there any difference between bachelor and master’s degrees?
5. Does gender effects the choice?
6. Does distance from the city of home university to the city of receiving university matter?
7. Does the city size of receiving and home university matter?
8. How does difference in cost of living in home and target country effect the selection?

**4. Data Sample**

**from Student\_Mobility\_2013-14.xlsx**Action,CallYear,ProjectNumber,MobiilityID,SendingCountry,ReceivingCountry,MobilityType,SpecialNeeds,SubjectAreaCode,SubjectAreaName,CombinedMobilityYesNo,StartDate,EndDate,DurationInMonths,DurationInDays,SubsistenceTravel,LevelOfStudy,ParticipantID,ParticipantGender,ParticipantType,Language,SendingPartnerErasmusID,SendingPartnerName,HostingPartnerErasmusID,HostingPartnerName,HostingPartnerCountry,HostingPartnerCity

ERA02,2013,2013-1-FR1-ERA02-50121,576529,FR,IE,Mob-SMP,0.0,441,Physics,,02-JUN-2014 00.00.00,02-SEP-2014 00.00.00,3,2,720.0,Second Cycle,576529,F,Students,EN,F STRASBO48,UNIVERSITE DE STRASBOURG,,Dublin City University,IE,Dublin

**From cost-of-living-2016.csv**City,Country,Cost.of.Living.Index,Rent.Index,Cost.of.Living.Plus.Rent.Index,Groceries.Index,Restaurant.Price.Index,Local.Purchasing.Power.Index,Milk(regular)(1 liter),Monthly.Pass,Apartment(1.bedroom).in.City.Centre,"Internet(10 Mbps, Unlimited Data, Cable/ADSL)",Cappuccino(regular),Water(0.33 liter bottle),Eggs(12),Water(1.5 liter bottle),Domestic Beer (0.5 liter bottle),One-way Ticket (Local Transport),"Basic (Electricity, Heating, Water, Garbage) for 85m2 Apartment","Cinema, International Release, 1 Seat",Apples (1kg)

Northampton,United Kingdom,67.16,26.85,48.18,59.6,74.13,110.82,1.2,65.53,744.44,22.08,3.65,1.55,2.1,1.08,1.44,2.95,168.42,12.19,2.62

Allentown,PA,86.59,32.41,61.08,91.75,74.59,82.12,1.1,50.0,883.8,52.84,4.16,1.28,2.39,2.0,2.0,2.0,259.81,11.0,8.34

**From allCountries.csv**geonameid,name,asciiname,alternatenames,latitude,longitude,feature class,feature code,country code,cc2,admin1 code,admin2 code,admin3 code,admin4 code,population,elevation,dem,timezone,modification date

3286426,Crvica,Crvica,Crvica,44.01608,19.58014,P,PPLL,BA,,02,,,,0,,418,Europe/Sarajevo,2019-01-10

2931198,Elendhof,Elendhof,,49.07394,12.50164,S,FRM,DE,,2.0,93.0,9372.0,9372125.0,0,,611,Europe/Berlin,2013-02-19

**From CountryInfo.txt**ISO,ISO3,ISO-Numeric,fips,Country,Capital,Area(in sq km),Population,Continent,tld,CurrencyCode,CurrencyName,Phone,Postal Code Format,Postal Code,Regex,Languages,geonameid,neighbours, EquivalentFipsCode

NL,NLD,528,NL,Netherlands,Amsterdam,41526.0,16645000,EU,.nl,EUR,Euro,31,#### @@,^(\d{4}[A-Z]{2})$,"nl-NL,fy-NL",2750405,"DE,BE",

NR,NRU,520,NR,Nauru,Yaren,21.0,10065,OC,.nr,AUD,Dollar,674,,,"na,en-NR",2110425,,