



EXL

# EXL Analytics Hackathon 2023

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# Problem Description

## Background

### Unemployment Rate:

The unemployment rate is a useful measure of the underutilization of the labour supply. It reflects the inability of an economy to generate employment for those persons who want to work but are not doing so, even though they are available for employment and actively seeking work. It is thus seen as an indicator of the efficiency and effectiveness of an economy to absorb its labour force and of the performance of the labour market.

The unemployment rate is calculated by expressing the number of unemployed persons as a percentage of the total number of persons in the labour force.

The labour force (formerly known as the economically active population) is the sum of the number of persons employed and the number of persons who are unemployed but actively seeking work. Thus, the measurement of the unemployment rate requires the measurement of both employment and unemployment.<sup>1</sup>

## Problem Statement

Participants need to make predictions for the monthly unemployment rate across all the G7 countries.

Markets: Canada, France, Germany, Italy, Japan, the United Kingdom, and the United States.

## Datasets

Participants can refer to any publicly available authentic datasets. However, the team is liable to mention the sources of all datasets used in the model. You are encouraged to pull in, curate and share data sources that might be helpful.

Links to some useful data repositories for different markets are –

Market	Canada	France	Germany	Italy	Japan	UK	USA
Official Govt. Source	<a href="#">Link</a>	<a href="#">Link</a>	<a href="#">Link</a>	<a href="#">Link</a>	<a href="#">Link</a>	<a href="#">Link</a>	<a href="#">Link</a>
3 <sup>rd</sup> Party Source	<a href="#">Link</a> Source for downloading unemployment data for all G7 countries						

Participants can use these datasets to build their models but using these datasets is not mandatory.

## Submissions

Predictions	Deadline	Eligibility	Submission Required
Hackathon	10 <sup>th</sup> May 2023 EST EOD	All Teams	i) Code ii) Predictions iii) Datasets Used* iv) Write-up
Final Presentation	6 <sup>th</sup> June 2023**	Only Qualified Teams	i) Presentation in PPT format

\*Kindly keep the record of all datasets used, as this might be required during the evaluation process.

\*\*Tentative Timeline

### Note:

- 1) Format for prediction submission will be shared later with the participants
- 2) Naming Convention for the files to be submitted

**“Pred\_Hackathon\_2023\_TeamName\_Dateofsubmission(ddmmYYYY)”**. A proper naming convention is expected to be followed by each team. All the file submissions should follow the standard template, which can be downloaded from [here](#)..

- 3) All submission needs to be uploaded through the following submission form:  
<https://forms.office.com/r/rAKPiw7X2j>



The preferred mode of accessing the submission forms is through EXL laptop.

The submitted file should not be more than 10MB in size

- 4) Predictions need to be submitted on entire labor force of the respective markets as per the following guide-

Market	UK	France	Italy	Japan	Canada	Germany	USA
Prediction Month	March	April	April	April	May	May	May

- 5) After the submissions, final presentations will be held for the top 6 teams along. Winners will be decided based on the prediction accuracy and the approach used.
- 6) Teams need to submit a one-page write-up (in .docx format) explaining the factors considered while building the model along with their justification

## Evaluation Criteria

The judging criteria of the models and presentation are described below:

The following points system will be used for Evaluation:

**Criteria 1:** Lowest mean squared error using the exact prediction values

**Criteria 2:** Lowest average span between the upper and lower limit of each prediction value

**Criteria 3:** Lowest mean squared error using the upper and lower limit of prediction value

For Leaderboard Calculation:

- Criteria 1 will be used for calculating the team's ranking
- If multiple teams get same rank, only then Criteria 2 will be used as tie-breaker
- And if the tie still exists, only then Criteria 3 will be used

Final Presentation Round:

Teams qualified for final presentations will have to present their models, strategies and write-up to the Judges and the winner will be decided by considering the modeling technique, accuracy in results, write-up and presentation skill

## Prizes

1<sup>st</sup> Prize: USD 1,800

2<sup>nd</sup> Prize: USD 1,100

3<sup>rd</sup> Prize: USD 800

## Rules and Regulation

- 1) A minimum of 1, and a maximum of 4 participants are allowed to form a team. Each participant can be part of only 1 team.
- 2) Teams should be made up exclusively of the current employees of EXL who are not organizers, volunteers, judges, sponsors, or in any other privileged position at the event
- 3) Teams can use libraries, frameworks, or open-source code in their projects. Working on a project before the event and open sourcing it for the sole purpose of using the code during the event is against the spirit of the rules and is not allowed.
- 4) Teams should prepare the codes in an easily understandable format and shall submit it along with their predictions.
- 5) Estimates from any National Agency of Statistics should not be directly or indirectly used.
- 6) Teams can be disqualified from the competition at the organizers' discretion. Reasons might include but are not limited to breaking the Competition Rules, behaving in a way that violates the EXL code of conduct or other unsporting behavior.
- 7) Participation in blog writing competition is not necessary for participation in hackathon and vice versa
- 8) Plagiarism of any kind shall not be entertained

## Process to Participate

Following are the steps to participate in the Hackathon:

- 1) **EXL Analytics Hackathon 2023** is open for all EXL Employees except for organizers, volunteers, judges, and sponsors.
- 2) Create a team of 1-4 members
- 3) Please use the following link for registration using EXL ids: [Microsoft Forms](#)



If the link is not working for any team, drop a mail to the following ids with a subject line – “Participation in EXL Analytics Hackathon 2023” - in the below mentioned format:

Team Name	What are you participating in?	Team Members and Emp. Id.	Contact Number(s)	Email IDs	Team Size
MYTEAMNAME	Hackathon	ABC 1234, XYZ 2345	+91 91234 34567, +91 98765 43210	abc@exlservice.com, xyz@exlservice.com	2

Send the above details to: [md.aftab@exlservice.com](mailto:md.aftab@exlservice.com);

All submissions need to be CC ed to the following IDs: [gaurav.kejriwal2@exlservice.com](mailto:gaurav.kejriwal2@exlservice.com);  
[sayantan.dutta@exlservice.com](mailto:sayantana.dutta@exlservice.com); [bhagyam.choudhary@exlservice.com](mailto:bhagyam.choudhary@exlservice.com); [shantanu.verma@exlservice.com](mailto:shantanu.verma@exlservice.com);  
[somesh.kumar@exlservice.com](mailto:somesh.kumar@exlservice.com); [rakshita.asati@exlservice.com](mailto:rakshita.asati@exlservice.com)

- 4) Open platform for doubt clarification

WhatsApp group: <https://chat.whatsapp.com/Lvr7NHi2pqB22d2w6TAyDP>



(Only one member from each team should join the WhatsApp Group, you can also ping on +91 9128024900 to get yourself added in the WhatsApp group)

- 5) **Hackathon queries form** (post your queries and doubts about the hackathon using this form):

<https://forms.office.com/r/EBc5Z3Kzf>



## Important dates

Dates	Description
4 <sup>th</sup> April 2023	Registrations Open
10 <sup>th</sup> April 2023 EST EOD	Registrations Close
18 <sup>th</sup> April 2023	Doubt Session
10 <sup>th</sup> May 2023 EST EOD	Submission Deadline
30 <sup>th</sup> May 2023*	Final Shortlist
1 <sup>st</sup> June 2023	Doubt Session for Final Presentation
6 <sup>th</sup> June 2023*	Final Presentation
8 <sup>th</sup> June 2023*	Winner Announcement

*\*Tentative timelines*