Data Analytics & Visualisation Challenge

Biostatistics CDS GBS

26-Aug-2022

Data Analytics & Visualisation Challenge - Tracks

Track 1

Programming & Data Visualization –

Fair knowledge of visualization tools such as R/SAS/Python/etc

Track 2

Statistical analysis & Interpretation –

Pursuing Post-Graduation in Statistics/Biostatistics

Fair knowledge of statistical analysis methodologies and tools such as R/SAS/Python

Timelines


8 Aug
Last date of application
12 Aug to 19 Aug
Preliminary round
24 Aug
Communication to colleges and students on preliminary round results
26 Aug
Talk on overview of Novo Nordisk and Clinical Trials and details on case-study
29 Aug to 16 Sep
Case-study
23 Sep
Final presentation

TRACK - 1
Case Study for
Programming & Data Visualization

CDISC

- CDISC stands for the “Clinical Data Interchange Standards Consortium”.
- The consortium works in tandem/collaboration with global agencies like the U.S. Food and Drug Administration (FDA), European Medicines Agency (EMA), Japan’s Pharmaceuticals and Medical Devices Agency (PMDA), and China’s National Medical Products Administration (NMPA) to develop guidelines and requirements that influence the standards for both clinical and nonclinical data.

- https://www.cdisc.org/

Problem Statement – Datasets introduction

ADSL

- Subject Level Analysis Dataset
- ADSL dataset contains variables that include information on demographics, randomization factors, planned and actual treatment, sub grouping, subject -level population flags and important trial dates
- One record per subject

SUBJID	SITEID	SITEGR1	ARM	TRT01P	TRT01PN	TRT01A	TRT01AN	TRTSDT
1015	701	701	ARM A	ARM A	0	ARM A	0	2-Jan-14
1023	701	701	ARM A	ARM A	0	ARM A	0	5-Aug-12
1028	701	701	ARM B	ARM B	81	ARM B	81	19-Jul-13
1033	701	701	ARM C	ARM C	54	ARM C	54	18-Mar-14
1034	701	701	ARM B	ARM B	81	ARM B	81	1-Jul-14

	A	B	C
	MEMNAME	NAME	LABEL
	ADSL	STUDYID	Study Identifier
	ADSL	USUBJID	Unique Subject Identifier
	ADSL	SUBJID	Subject Identifier for the Study
	ADSL	SITEID	Study Site Identifier
	ADSL	SITEGR1	Pooled Site Group 1
	ADSL	ARM	Description of Planned Arm
	ADSL	TRT01P	Planned Treatment for Period 01
	ADSL	TRT01PN	Planned Treatment for Period 01 (N)
	ADSL	TRT01A	Actual Treatment for Period 01
	ADSL	TRT01AN	Actual Treatment for Period 01 (N)

Problem Statement – Datasets introduction

ADVS

- Vital Signs Analysis dataset
- BDS (Basic Data Structure)
- The BDS is designed as one or more records per subject per analysis parameter per analysis time point

	A	B	Q	S	U	V	W
1	SITEID	USUBJID	PARAM	ADT			AVISIT
2	701	01-701-1015	Height (cm)	26-Dec-13			
3	701	01-701-1015	Weight (kg)	26-Dec-13			
4	701	01-701-1015	Weight (kg)	2-Jan-14			Baseline
5	701	01-701-1015	Weight (kg)	16-Jan-14			Week 2
6	701	01-701-1015	Weight (kg)	30-Jan-14			Week 4
7	701	01-701-1015	Weight (kg)	12-Feb-14			Week 6
8	701	01-701-1015	Weight (kg)	5-Mar-14			Week 8
9	701	01-701-1015	Weight (kg)	26-Mar-14			Week 12
10	701	01-701-1015	Weight (kg)	7-May-14			Week 16
11	701	01-701-1015	Weight (kg)	21-May-14			Week 20
12	701	01-701-1015	Weight (kg)	18-Jun-14			Week 24

ADAE

- Adverse Event Analysis dataset
- Occurrence Data Structure

A	B	C	N	U	
SITEID	USUBJID	TRTA	ASTDT	AETERM	AELLT
701	01-701-1015	ARM A	3-Jan-14	APPLICATION SITE ERYTHEMA	APPLICATION SITE
701	01-701-1015	ARM A	3-Jan-14	APPLICATION SITE PRURITUS	APPLICATION SITE
701	01-701-1015	ARM A	9-Jan-14	DIARRHOEA	DIARRHEA
701	01-701-1023	ARM A	7-Aug-12	ERYTHEMA	ERYTHEMA
701	01-701-1023	ARM A	7-Aug-12	ERYTHEMA	LOCALIZED ERYTHE
701	01-701-1023	ARM A	26-Aug-12	ATRIOVENTRICULAR BLOCK SECOND DEGREE	AV BLOCK SECOND

Problem Statement – Task

Visualize and graphically summarize the data provided (ADSL, ADAE, ADVS)

Key points to be explored-

- Demographics and baseline characteristics by treatment
- Overview of TEAEs (Treatment Emergent Adverse Events) and event rate
- Distribution of days on study to AE (Adverse Events) onset for subjects with AE (Adverse Events)
- Distribution of BMI (Body Mass Index) across visits

You are welcome to explore beyond the above

What you can expect from Mentors

- Meetings will be scheduled by mentors through **MS Teams**
  - First meeting will be scheduled latest by 31st August
- Mentors will be available to spar with for 1 hour every week during the case-study challenge
- Explore, discuss and align in meetings with mentor
- Mentors will only provide directions and no trainings will be given

Submission & Final Presentation

- Final visualizations and relevant codes need to be submitted by **17th Sep 2022**
- Final presentations to be submitted by **21st Sep 2022**

- All teams will be scored by mentors during the entire period of the case study challenge based on the idea, content, technical skills, teamwork and communication
- A panel of internal judges will evaluate the final presentation on **23rd or 26th Sep 2022**

- **Two best teams from each track** will be awarded the winner certificates based on the cumulative scores of mentors and judges' panel