DAIHC-1-06P: Health Data Visualization & Analysis Lab

Total Marks: 50
External Marks: 35
Internal Marks: 15
Credits: 2

Detailed Contents:

S. No.	Name of Experiment
1	Import real-world healthcare datasets (e.g., heart disease, diabetes, EHRs) and handle missing values, duplicate entries, and incorrect formats using Pandas.
2	Identify abnormal cholesterol or blood pressure readings and cap/transform/remove them.
3	Convert timestamp data in wearable sensor logs into weekday/weekend, shift periods, etc.
4	Analyze frequency of diagnoses and age distribution in hospital visit records.
5	Correlate BMI and glucose levels in a diabetes dataset.
6	Plot histograms for cholesterol levels in heart disease patients.
7	Scatter plot of BMI vs. Glucose and pair plot of selected features.
8	Generate heatmaps to visually analyze feature correlations in health datasets.
9	Plot a time-series line chart of heart rate over a 24-hour period from a wearable sensor.
10	Use visualizations and EDA to interpret trends and propose a clinical insight or policy suggestion.

Books

- Boye, M. E., Foulkes, A. S., & Gokhale, M. (2020). Health data science: An introduction to statistical programming in R and Python. CRC Press.
- Bader, J. S., & Madhuri, R. K. (2021). Practical data analysis for clinical and healthcare applications using Python. Springer.
- VanderPlas, J. (2016). Python data science handbook: Essential tools for working with data. O'Reilly Media.
- Waskom, M. (2021). Seaborn: Statistical data visualization. Zenodo.