# AI Solution (5 marks)

MediCareAI, is an AI-powered disease prediction system that uses patient symptoms as input to predict possible illnesses through a machine learning classification model. This solution is relevant to the theme “AI Solutions for Industries” because it demonstrates how Artificial Intelligence can transform the healthcare industry, one of the most vital sectors of society. By automating early disease prediction, MediCareAI enhances medical decision-making, improves patient outcomes, and aligns with the Forth Industrial Revolution (4IR) vision of using AI to solve real-world industry challenges.

# Business objectives (25 marks)

## Business objectives

The main objective of MediCareAI is to design and implement a machine learning classification model that predicts possible diseases from patient symptoms, thereby enabling early detection, assisting healthcare professionals, and improving patient outcomes.

* Develop a reliable AI system that predicts possible diseases based on symptoms.
* Support healthcare professionals in early screening and prioritizing critical cases.
* Reduce the time and cost of diagnosis by giving quick preliminary results.
* Increase accessibility of healthcare by enabling digital pre-diagnosis tools.
* Improve patient engagement and awareness of their health status.

## Business success criteria

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## Business background

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## Requirements

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## Constraints

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## Risks

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## Tools and techniques

• **Programming Language**: Python 3

• **Libraries**: Pandas & NumPy for data handling, Scikit-learn for machine learning,

Matplotlib/Seaborn for visualization, Joblib for model storage

• **Environment**: Visual Studio Code

• **Machine Learning Technique**: Random Forest Classifier for multi-class

disease prediction

• **Evaluation**: Accuracy score, confusion matrix, precision/recall, F1-score

• **Visualization**: Feature importance to show which symptoms most influence predictions

# Problem definition (10 marks)

## What is the problem?

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## How relevant is it to the theme and how beneficial it will be in solving the problem?

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# References