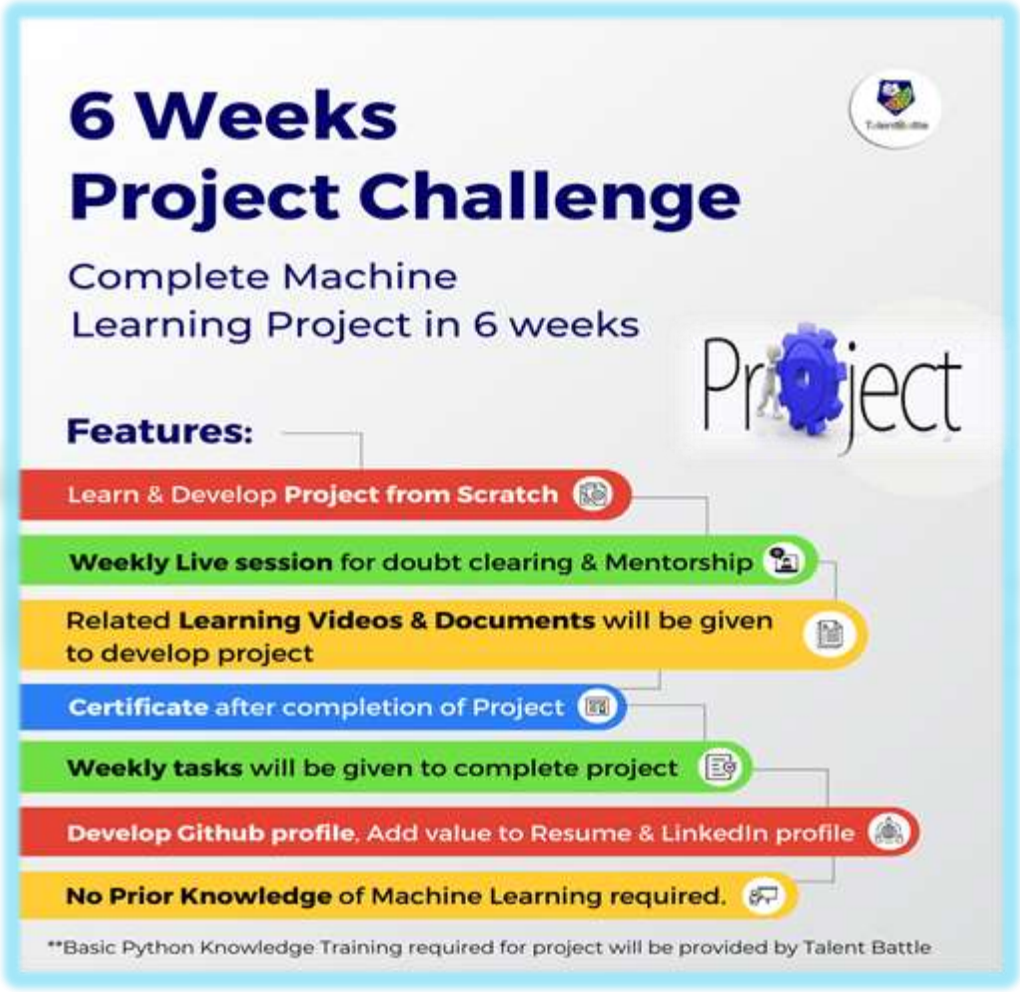
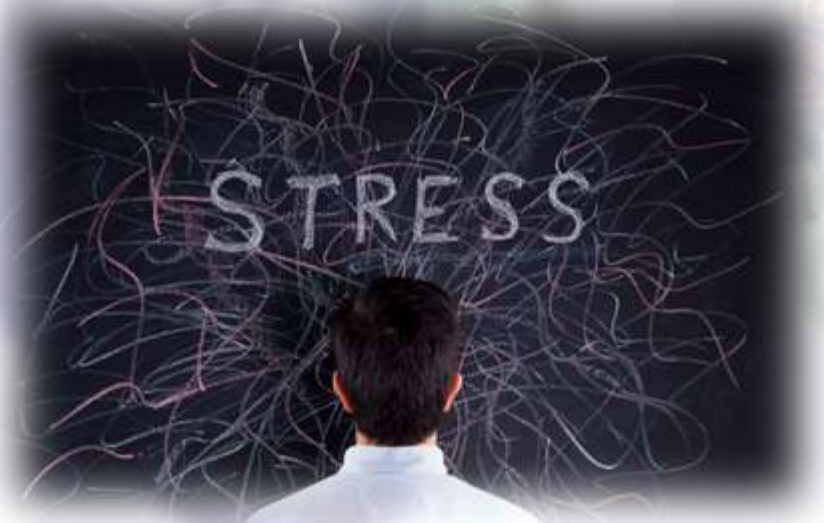
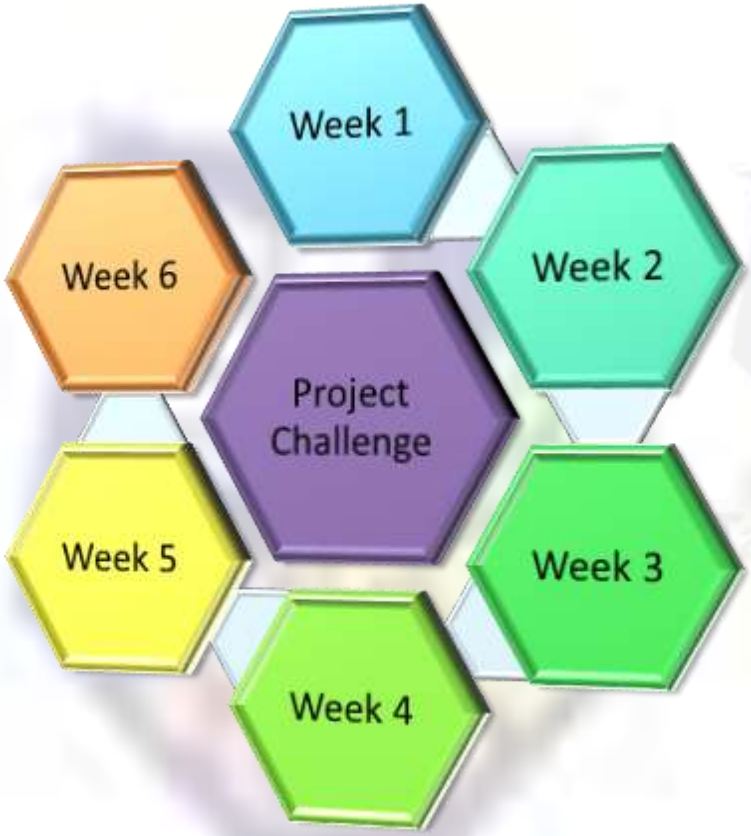
6 Weeks Project Challenge





Stress Detection using ML



Week 1	Prerequisite Learning
Week 2	Programming Fundamentals (Python) + Required Installation
Week 3	ML Specific
Week 4	Coding
Week 5	Git Hub Deployment
Week 6	Extension + Summarization

SDLC

Software Development Life Cycle

Process :

A process is the sequence of steps executed to achieve a goal. A process is defined by cycles. Similar to a project, a process also has a beginning, middle, and end; however, this cycle repeats itself over an average period of time.

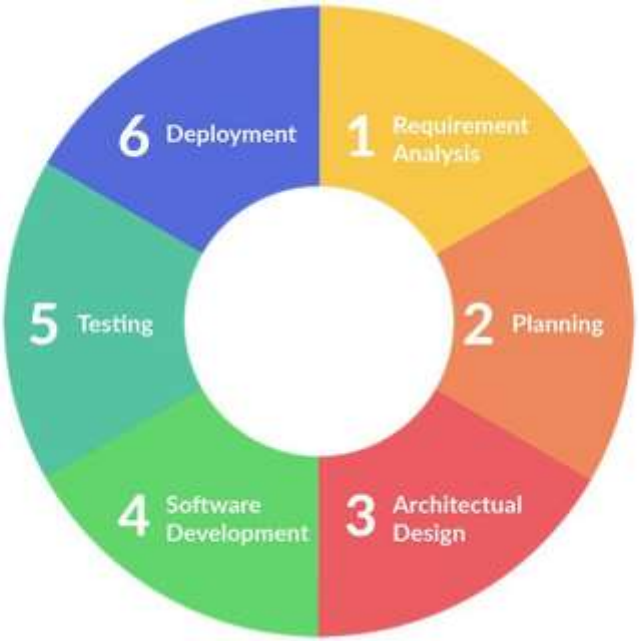
Project :

A project is defined by a fixed time, scope, and resources. When implementing a project, the goal is to execute change, usually drastic, and to incorporate that change into the day-to-day processes of the company.

SDLC: Software Development Life Cycle

Software Development Life Cycle (SDLC) is a framework that defines the steps involved in the development of software at each phase. It covers the detailed plan for building, deploying and maintaining the software.

SDLC defines the complete cycle of development i.e. all the tasks involved in planning, creating, testing, and deploying a Software Product



Week 1

Prerequisite Learning

Prerequisites to Learn Machine Learning

- Statistics
- Probability
- Linear Algebra
- Calculus
- Programming Language

Statistics

Statistics, as a discipline, is concerned mainly with data collection, sorting, analysis, interpretation, and presentation.

You have to be familiar with:

- Mean
- Median
- Standard deviation
- Outliers
- Histogram

Probability

Probability describes how likely it is for an event to occur. All data-driven decisions stem from the foundation of probability. In machine learning, you will be dealing with:

- Notation
- Probability distribution, joint and conditional
- Different rules of probability—Bayes theorem, sum rule, and product or chain rule
- Independence
- Continuous random variables

Linear Algebra

While linear algebra is integral to machine learning, the dynamics between the two are a little vague and are only explicable through abstract concepts of vector spaces and matrix operations.

- Algorithms in code
- Linear transforms
- Notations
- Matrix multiplication
- Tensor and tensor rank

Calculus

Calculus is crucial to building a machine learning model. An integral part of several Machine Learning algorithms.

- Basic knowledge of integration and differentiation
- Partial derivatives
- Gradient or slope
- Chain rule—for training neural networks

Programming Languages

It is good to have a sound foundation in programming as machine learning algorithms are put into effect with code. While you can get away as a novice programmer and focus on the mathematics front, it is advised to pick up at least one programming language as it will truly help your understanding of the internal mechanisms of machine learning.

Python

Python's easy syntax, built-in functions, and wide package support make it popular for machine learning, especially for beginners. It has the most-supported libraries. Through the Python Package Index (PyPI,) you can access over 235,000 packages.

Referring IEEE Papers

It will help to understand the current work status in the respective domain.

You have to refer some latest papers (last 3 years) to work on the domain as well to understand the literature survey.