

# Project Overview :

## 1. Introduction

With the increasing number of cyber threats, having a strong password is crucial for ensuring security in online systems. This project implements a **Password Strength Checker** in Java that evaluates the strength of a user-entered password based on specific criteria and provides an estimate of how long it would take to crack it.

## 2. Objective

The objective of this project is to develop a Java-based program that can:

- Analyze a password's strength based on its length and character composition.
- Categorize passwords as **Super Weak, Weak, Moderate, Strong, or Super Strong**.
- Provide an estimated time for cracking the password.

## 3. Methodology

The program follows these steps to determine password strength:

1. The user is prompted to enter a password.
2. The password is analyzed based on:
  - a. Length
  - b. Presence of uppercase letters, lowercase letters, numbers, and special characters
3. Based on predefined conditions, the password is categorized.
4. The estimated cracking time is displayed.

### Password Strength Classification

Criteria	Strength	Estimated Crack Time
Length < 8	Super Weak	10 seconds
Only Uppercase	Weak	30 seconds
Only Letters	Moderate	50 seconds
Uppercase + Numbers	Moderate	50 seconds
Lowercase + Numbers	Moderate	50 seconds

Letters + Numbers	Strong	500 seconds
Letters + Numbers + Special Characters	Super Strong	1600 seconds

## 4. Code Implementation

### Technologies Used:

- **Programming Language:** Java
- **Development Environment:** Any Java-supported IDE (e.g., IntelliJ, Eclipse, VS Code)