A CAPTCHA is a type of challenge-response test used in computing as an attempt to ensure that the response is generated by a person. Because other computers are supposedly unable to solve the CAPTCHA, any user entering a correct solution is presumed to be human.

Our project aims to crack the CAPTCHA system design, that is, to be able to analyze and recognize the CAPTCHA challenge image and return a text answer to the question.

- **Preprocessing**
  If the CAPTCHA image is colored, we will convert it to a grey-level image. Any other preprocessing attempts such as initial answer guessing and useful segmentation methods may be added.

- **Template Matching Engine**
  Template matching is simply use a template image in a database, scan through the CAPTCHA image and find the area that is most similar to the template.

- **Post-processing**
  It is a step that refining our CAPTCHA answer returned by our template matching engine. Here we may adopt some machine learning/global optimization techniques such as simulated annealing, genetic programming, pattern recognition algorithms to solve the CAPTCHA.