

# SCS400: RESEARCH PROJECT PROPOSAL

**Aim:** By the end of this lesson, every student is expected to develop a title for his/her research and write a short description of the intended project

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# The Title

- A good title is defined as the fewest possible words that **adequately describe** the contents of the project.
- The title is extremely important and must be chosen with great care as it will be read by thousands, whereas few will read the entire project.
- Titles should neither be too short nor too long as to be meaningless
- Waste words (studies on, investigations on, a, an, the etc) should not be used.
- Syntax (word order) must be very carefully considered

# Title

- It should contain the keywords that reflect the contents of the paper.
- It should be meaningful and not general
- It should be concise, specific and informative
- It should capture the fundamental nature of the experiments and expected findings

# How to Prepare the Title

- Make a list of the most important keywords
- Think of a title that contains these words
- The title could state the expected conclusion of the project
- The title **NEVER** contains abbreviations, proprietary names or jargon
- Think, rethink of the title
- Be very careful of the grammatical errors due to faulty word order
- Avoid the use of the word “using”

# The Abstract

- An abstract can be defined as a summary of the information in a document
- It is of fundamental importance that the abstract be written clearly and simply, as it is the first and sometimes the only part of the manuscript read.
- It should provide a brief summary of each of the main sections (IMRAD) of the paper:
  1. State the principal objective and scope of the investigation
  2. Describe the methods used
  3. Summarize the results, and
  4. State the principal conclusions
- It is easier to write the abstract after completion of the paper

# Criteria of the Abstract

- It should not exceed 250 words
- It should be written in one paragraph.
- It should be written in the past tense as it refers to work done.
- Long words should be followed by its abbreviation which would be used throughout the abstract and paper.
- It should not cite any references (except in rare cases)
- It should never give any information or conclusion that is not stated in the paper
- Must be accurate with respect to figures quoted in the main text.

## Examples of Project Title and Project Description

### 1. Title: Secure Online Auction System.

#### PROJECT DESCRIPTION

Online auction however is a different business model where the items are sold through price bidding. Usually bidding have start price and ending time. Potential buyers in auction and the winner is the one who bids the item for highest price. We treat the fraud detection with a binary classification. For buying product online user have to provide his personal details like email address, license number, PAN number etc. Only the valid user will have authority to bid. This prevents various frauds according in online shopping.

# Modules

## Customer Module:

- Customer register: customer will be provided with a personal account through registration
- Customer Login: Login to the system with valid username and password.
- Profile Verification : The customers profile verified by the admin for the auction bid participation.
- Auction Products : Only verified customer can able to view auction product gallery, bidding for product and buy product.



## Seller Module

The seller module includes different sellers who wish to sell their products. The seller needs to be approved by administrator after a seller submits his registration. A seller can add or delete or modify information about different items. The different functionalities for seller are

- Can add a new a product
- Can delete a product
- Can place new offers to the product
- Can modify information related to the product such as price, basic information

## Admin Module

The administrative module includes an admin who acts as an intermediary between seller and the customer.

- Admin Login: Login with authorized username and passwords.
- Verify Customers & Sellers : The Administrator verifies new users when the online auctioning also approve authorized seller after registration.
- Delete Seller : If the admin feels all the products from particular seller mostly are not trusted he can also remove the seller and his related products.
- Block Fraud Customer : Administrator can delete an account when any of the user leave the

auctioning organization and permanently blocks the customer if fraud.

### Complaint Filing

Buyers can file complaints against fraudulent sellers. The administrator views the various types of complaints and takes the final decision about it.

### **Advantages:**

- Only authorized and verified customer can participate in auction.
- Fraud customer or seller gets detect in early stages and measure to prevent it.

- Authenticate legitimate users can buy the product online very efficiently and securely with the help of this system
- The products for auction does not need any physical location
- The bidder can participate in auction from anywhere at anytime through online auction.

### **Disadvantages:**

- Customer can view only the product picture and some details on the auction website, which may lead to lack of product genuineness.

## Hardware Requirement:

- i3 Processor Based Computer
- 1 GB RAM; - 50 GB Hard Disk
- Monitor; - Internet Connection

## Software Requirement:

- Windows 7 or higher.
- WAMP Server; - Notepad++.
- My SQL 5.6.

## IEEE Link

<http://ieeexplore.ieee.org/document/7588860/>

## 2. Project Title: OpenCV C++ Program for Face Detection

### PROJECT DESCRIPTION

This program uses the OpenCV library to detect faces in a live stream from webcam or in a video file stored in the local machine. This program detects faces in real time and tracks it. It uses pre-trained XML classifiers for the same. The classifiers used in this program have facial features trained in them. Different classifiers can be used to detect different objects.

## Requirements for running the program:

- 1) OpenCV must be installed on the local machine.
- 2) Paths to the classifier XML files must be given before the execution of the program. These XML files can be found in the OpenCV directory “opencv/data/haarcascades”.
- 3) Use 0 in `capture.open(0)` to play webcam feed.
- 4) For detection in a local video provide the path to the video. (`capture.open(“path_to_video”)`).

### 3. Project Title: E-Authentication System with QR Code & OTP

#### **PROJECT DESCRIPTION**

In the proposed scheme, the user can easily and efficiently login into the system. We analyze the security and usability of the proposed scheme, and show the resistance of the proposed scheme to hacking of login credentials, shoulder surfing and accidental login. The shoulder surfing attack can be performed by the adversary to obtain the user's password by watching over the user's shoulder as he enters his password. Since, we have come up with a secure system schemes with different degrees of resistance to shoulder surfing have been proposed. In order to use this authentication system, user need to first register himself into this system by filing up the basic registration details. After a successful registration, user can access the login module where he/she need



to first authenticate the account by entering the email id and password which was entered while registration. Once the email id and password is authenticated, the user may proceed with next authentication section where he/she need to select the type of authentication as QR (Quick Response) Code or OTP (One Time Password). Once the user selects the authentication type as QR Code, then system will generate a QR Code and send it to user's mail id over internet. If user select's OTP, then SMS will be sent on his/her registered mobile number. If the user passes the authentication, then system will redirect to the main page. The QR Code and OTP are randomly generated by the system at the time of login.

## Modules:

- **Registration:**

- To access the system, user need to first register by entering the basic registration details like name, email id, mobile number, gender, etc.

- **Login:**

- Here, user need to enter the login credentials to access the system.
- If the login credentials are validated by the system, the page will be redirected to user authentication page where user need to select any one authentication type as **OTP** or **QR Code**.

- **OTP Verification:**
  - If user select's OTP authentication, then system will send an OTP in the form of SMS on the registered mobile number which was provided by the user at the time of registration.
- **Scan QR Code:**
  - If user select's QR code, then code is generated in backend and sent on the user's email id.
  - User need to scan the QR Code using system webcam to validate the QR Code sent over the mail.
- **Main Page Access:**

- If the user passes the authentication process, then the page will be redirected to Main Page else, it will redirect to login page.
- **Software Requirements:**
  - Windows 7 or higher
  - Microsoft SQL Server 2008
  - Visual Studio 2010
- **Hardware Components:**
  - Processor –Core i3
  - Hard Disk – 160 GB
  - Memory – 1GB RAM
  - Monitor
- **Advantages of the Proposed Project:**

- Helps users to login into their account more securely.
- Stalker won't be able to collect the password via shoulder surfing.
- Complex password technique with easy user interface.
- **Disadvantages:**  
Requires an active internet connection.
- **Application:**  
This application can be used by the banks for login into internet banking.
- **Reference Link:**  
<http://ieeexplore.ieee.org/document/6982784/>

## 4. Project Title: Crime Rate Prediction Based on K-means

### PROJECT DESCRIPTION

Crime rate is increasing now-a-days in many countries. In today's world with such higher crime rate and brutal crime happening, there must be some protection against this crime. Here we introduced a system by which crime rate can be reduced. Crime data must feed into the system. We introduced data mining algorithm to predict crime. K-means algorithm plays an important role in analyzing and predicting crimes. K-means algorithm will cluster co-offenders, collaboration and dissolution of organized crime groups, identifying various relevant crime patterns, hidden links, link prediction and statistical analysis of crime data.

This system will prevent crime occurring in society. Crime data is analyzed which is stored in the database. Data mining algorithm will extract information and patterns from database. System will group crime. Clustering will be done based on places where crime occurred, gang who involved in crime and the timing crime took place. This will help to predict crime which will occur in future. Admin will enter crime details into the system which is required for prediction. Admin can view criminal historical data. Crime incident prediction depends mainly on the historical crime record and various geospatial and demographic information.

## **Features:**

- Admin Login: Admin can login to the system using his credentials.
- Criminal Data: Admin will add criminal records into the system.
- View Criminal Details: Admin can view criminal details.
- Crime Prediction: System will k-means algorithm to predict historical crime record which help to prevent crime in society.

## **Software Requirements:**

- Windows 7 or higher; - Microsoft SQL Server 2008
- Visual Studio 2010



## **Hardware Components:**

- Processor – i3
- Hard Disk – 5 GB
- Memory – 1GB RAM

## **Advantages of the proposed project:-**

- Helps to prevent crime in society
- System will keep historical record of crime.
- System is user friendly
- Saves time

## **Disadvantages:**

- Users who don't have internet connection can't access the system.

- Admin must enter correct records otherwise system will provide wrong information

### **Application:**

This application can be used in police station, residential and commercial areas.

### **IEEE Links**

- <http://ieeexplore.ieee.org/document/7433797/>
- <http://ieeexplore.ieee.org/document/7275858/>