Scene Detection From A Large Input Video

K.Rama Krishna[#1] Assistant Professor, J.Thirupathi[#2] Associate. Professor
College of Engineering and Technology
Department of Computer Science Engineering
SAMARA UNIVERSITY,SAMARA, ETHIOPIA

Abstract - In this paper, we utilize This project mainly focuses on detecting a particular person role from a large video. It will help the investigating agencies (police, CBI, etc...) in finding out the role of a particular person in a crime. It can be mainly used in public areas like airports, railway stations, meetings, cinema halls etc....After providing valid credentials i.e., user ID and password admin logins into his/her account and upload images and details of a person based on category. For example: If a person is criminal he comes in criminal category. Admin also has the facility to update and delete person's information. Admin can update the profile which is already existed and can delete the profile if it is not necessary. User sets his/her password and gets login to his account by entering valid credentials. User uploads a video and clicks on frame division than that video is divided into frames using (API) JAR file technology. . Those frames are saved in the folder called "snapshots" which is already created in the C – drive. We can browse a frame either from the divided frames or from the desktop and clicks onto the "match operation" button. That matching operation is internally done and the matched frames are displayed in the folder called "Thumb Images" at and then clicks on to the "view matched frames" button. After viewing the matched frames we can clicks onto the "form a video" button. We have a save that video in anywhere of the system and shows a popup that "video is successfully created". We can run the video from the saved location through any video player. In that "frame division" page itself we can have the profile of the user. If the users profile is already saved in the database it displays a popup as already exists, if not the profile has to be created and click on the "ok" button so that the entered data stored to the database. User clicks on to the logout button and a logout page is displayed and there we have a option of going to the home page directly.

keywords: frame division , security , images , database integrity , scene detection , usability, maintainability, portability, accuracy, expandability and communicative, snapshots .

I.Introduction

Analysis is the detailed study of the various operations performed by a system and their relationships within and outside of the system. A key question is: "What must be done to solve the problem? One aspect of analysis is defining the boundaries of the system and determining whether or not candidate system should consider other related systems. During analysis, data are collected on the available files, decision points, and transactions handled by the present system.

It's a manual operation and takes more time. The investigating departments has to view the whole video in search of role of a one particular person thereby it increases their work and time. So we have developed this project to make their work easy and effective mainly in investigating purpose so that they no need to view the whole video for detecting a particular person's role in a large video. So our project entitled as "scene detection from a large video". This is the flow of work they are implementing. Now they are expecting a desktop application, which allows them to set a password and enters that password and clicks on to the login button. So that user enters into the login page where user can upload a video from anywhere of the system and then clicks on to the "frame division" button. Those frames are saved in the folder called "snapshots" which is already created in the C – drive. We can browse a frame either from the

ISSN: 2278 – 7798

divided frames or from the desktop and clicks onto the "match operation" button. That matching operation is internally done and the matched frames are displayed in the folder called "Thumb Images" at and then clicks on to the "view matched frames" button. After viewing the matched frames we can clicks onto the "form a video" button. We have a save that video in anywhere of the system and shows a popup that "video is successfully created". We can run the video from the saved location through any video player.

In that "frame division" page itself we can have the profile of the user. If the users profile is already saved in the database it displays a popup as already exists, if not the profile has to be created and click on the "ok" button so that the entered data stored to the database.

This project is also web-based application where the admins task plays a major role in that web-based application. Here admins can upload, update and delete the users profile. The visitors can view about the project very briefly in this application by clicking on the buttons like about us, help, reviews, contact us.

II.System Overview

→Existing system:

In existing system, for detecting a particular person role in a video we have to go through the whole video. In the current scenario, we don't have the facility to keep track on single person's information in a large video.

DISADVANTAGES:

1 .If any investigating departments want to check for the role of the person on a video then they have to go through the whole video.

2. Time consuming.

→Proposed System

In the proposed system, we need not go through the whole video, to detect a particular person role. The video is divided into number of frames and each frame is matched with the image. The matched images are then framed into a video. Unlike existing system this is very quick process and required task can be completed in a simple manner with less complexity.

ADVANTAGES:

1. Instead of checking the whole video, we can select the specified frame from the segmented video of the particular image.
2. It's a user friendly application can be used in different areas to solve various security issues.

III. Working principle

Operational Feasibility:

It refers to the feasibility of the product to be operational. Some products may work very well at design and implementation but may fail in the real time environment. It includes the study of additional human resource required and their technical expertise. After the completion of development the customers can access the application from anywhere with the help of internet there is no operational problems for the system.

Technical Feasibility:

It refers to whether the software that is available in the market fully supports the present application. It studies the pros and cons of using particular software for the development and its feasibility. As we are planning to use Java platform the application can be accessed from any platform and H/w and in order to maintain performance aspects we will have plenty of concepts in java such as Multithreading (to support more user with each user for a thread), Networking concepts, Serve lets (to run web based applications).

→Module Description

1. User Module:

i. AUTHENTICATION: It is used for the security purpose to the user to login.

ii. APLOADING VIDEO: User uploads a video.

iii. FRAME DIVISION: The video which is required for the investigating agencies is divided into number of frames.

iv. SELECTION OF PHOTO: The image is selected from the database and is passed to the frontend.

v. MATCHING PROCESS: It matches the picture from the divided frames which has been retrieved from the database.

vi. SHOWING RESULT FRAMES: All the matched frames are displayed.

vii. FORMATION OF VIDEO: All the matched frames are then converted into video.

→Admin Module:

i. AUTHENTICATION: It is used for the security purpose

ii. UPLOAD: Upload the details and their image.

ISSN: 2278 – 7798

iii. UPDATE: He can update details and image any time.
iv. DELETE: Delete the unwanted details of a person

IV. Design of System

Introduction To UML Diagrams:

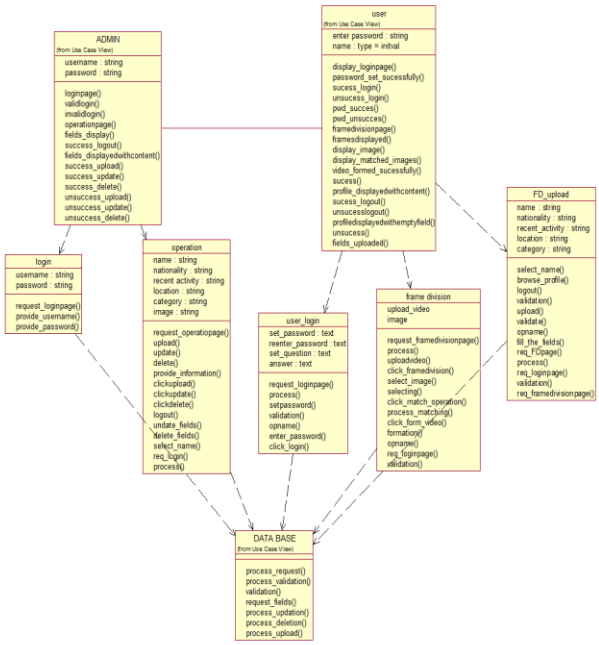
The unified modeling language (UML) is a standard language for writing software blue prints. The UML may be used to visualize, specify, construct, & document the artifacts of software – intensive system

The UML is appropriate for modeling systems ranging from enterprise information systems to distributed web-based applications and even to hard real time embedded systems. It is a very expressive language, addressing all the views needed to develop and deploy such systems. Even though it is expressive, it is not difficult and easy to use. Learning to apply the UML effectively starts with forming a conceptual model of the rules that dictate how these building blocks, the rules that how these building blocks may be put together, and some common mechanisms that apply throughout the language. The UML is a language and is also just a part of a software development method. The UML is process independent, although optimally it should be used in a process that is use case driven, architecture-centric, iterative, and incremental.

Class Diagram:

The class diagram is a static diagram. It represents the static view of an application. Class diagram is not only used for visualizing, describing and documenting different aspects of a system but also for constructing executable code of the software application. The class diagram describes the attributes and operations of a class and also the constraints imposed on the system. The class diagrams are widely used in the modeling of object oriented systems. The class diagram shows a collection of classes, interfaces, associations, collaborations and constraints. It is also known as a structural diagram.

Fig: Class diagram explaining about Admin and user Relationship



V. Implementation of System

Java is an object oriented, multi thread programming language developed by Sun Microsystems in 1991. It is designed to be small, simple and portable across different platforms as well as operating systems. The popularity of Java is due to its unique technology that is designed on the basis of three key elements. They are the usage of applets, powerful programming language constructs and a rich set of significant object classes.

The editor (i.e., where the programs are being written) can be Notepad, WordPad, MS-DOS editor, etc…). This provides system input and output capabilities and other utility functions in addition to classes that support networking, common Internet protocols and user interface toolkit functions.

--Why Java is selected?

Java was designed to meet all the real world requirements with its key features, which are explained in the following paragraphs:

Simple and powerful:

Java was designed to be easy for the professional programmers to learn and use efficiently. Java makes itself simple by not having surprising features. Since it exposes the internal working of the machine, the programmers can perform his desired action without fear. Unlike other programming systems that provide dozens of complicated ways to

ISSN: 2278 – 7798

perform a simple task, Java provides a small number of clear ways to achieve a given task. Secur
--Portable:
In Java, the same mechanism that gives security helps in portability. Many types of computers and operating systems are used throughout the world and are connected to the Internet. For downloading programs through different platforms connected of the Internet, some portable, executable ode is needed. Java's answer to these problems is its well-designed architecture.
Object-oriented: Java was not designed to be source code compatible with any other language. Java team gave a clean, usable, realistic approach to objects. The object model in Java is simple and easy to extend, while simple types, such as integers, are kept as high-performance non-objects.t
Most programs in use nowadays fail of the two reasons: memory management or exceptional conditions.

Java forces the user to find mistakes in the early stages of the program development. At the same time, Java frees the user from having to worry about the most common causes of the programming errors. Java virtually rectifies the problem of memory management by managing memory allocation and automatic memory reallocation by providing garbage collection for unused objects.
--Multithreaded: Java was designed to meet the real-world requirements of creating interactive, networked programs. To achieve this, Java supports multithreaded programming, which allows user to write programs that perform many function simultaneously. The Java run-time system enables the user to construct smoothly running interactive systems. Java's easy-to-use approach to multithreading allows the user to think about the specific behavior of his own program, not the multitasking subsystem.

The Java designers worked hard in attaining their goal "write once; run anywhere, anytime, forever" and as a result the Java Virtual Machine was developed.
A main issue for the designers was that of code longevity and portability. One of the main problems is the execution speed of the program. Since Java is architecture-neutral it generates byte code that resembles machine code, and is not specific to any processor.

With most programming languages, you either compile or interpret a program so that you can run it on your computer. The Java programming language is unusual in that a program is both compiled and interpreted. With the compiler, first you translate a program into an intermediate language called Java byte codes —the platform-independent codes interpreted by the interpreter on the Java platform. The interpreter parses and runs each Java byte code instruction on the computer. Compilation happens just once; interpretation occurs each time the program is executed. The following figure illustrates how this works.
What Can JAVA Technology do?
The most common types of programs written in the Java programming language are applets and applications. If you've surfed the Web, you're probably already familiar with applets.
An application is a standalone program that runs directly on the Java platform. A special kind of application known as a server serves and supports clients on a network. Examples of servers are Web servers, proxy servers, mail servers, and print servers. Another specialized program is a servlet.
A servlet can almost be thought of as an applet that runs on the server side. Java Servlets are a popular choice for building interactive web applications, replacing the use of CGI scripts. Servlets are similar to applets in that they are runtime extensions of applications. Instead of working in browsers, though, Servlets run within Java Web servers, configuring or tailoring the server. Every full implementation of the Java platform gives you the following features:

- The essentials: Objects, strings, threads, numbers, input and output, data structures, system properties, date and time, and so on.
- Applets: The set of conventions used by applets.
- Networking: URLs, TCP (Transmission Control Protocol), UDP (User Data gram Protocol) sockets, and IP (Internet Protocol) addresses.
- Internationalization: Help for writing programs that can be localized for users worldwide. Programs can automatically adapt to specific locales and be displayed in the appropriate language.

ISSN: 2278 – 7798

Requests and Responses :

Methods in the HttpServlet class that handle client requests take two arguments:

1. An HttpServletRequest object, which encapsulates the data from the client
   An HttpServletResponse object, which encapsulates the response to the client
2. HttpServletRequest Objects

An HttpServletRequest object provides access to HTTP header data, such as any cookies found in the request and the HTTP method with which the request was made. The HttpServletRequest object also allows you to obtain the arguments that the client sent as part of the request.

1) HttpServletResponse Objects

An HttpServletResponse object provides two ways of returning data to the user:

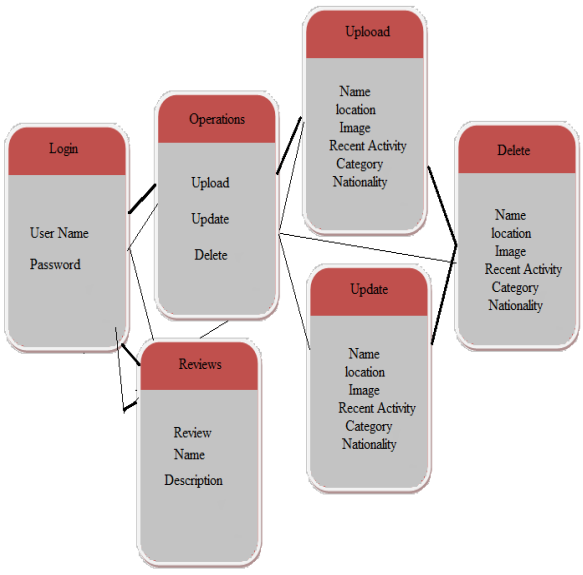
The getWriter method returns a Writer

the getOutputStream method returns a ServletOutputStream

Use the getWriter method to return text data to the user, and the getOutputStream method for binary data.

•

Admin E-R Diagram:

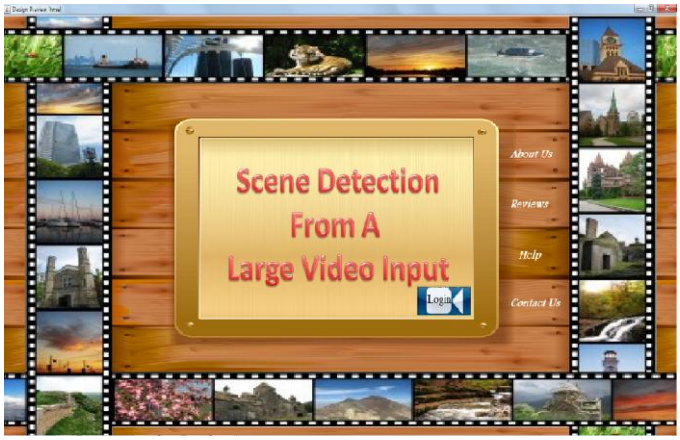


❖

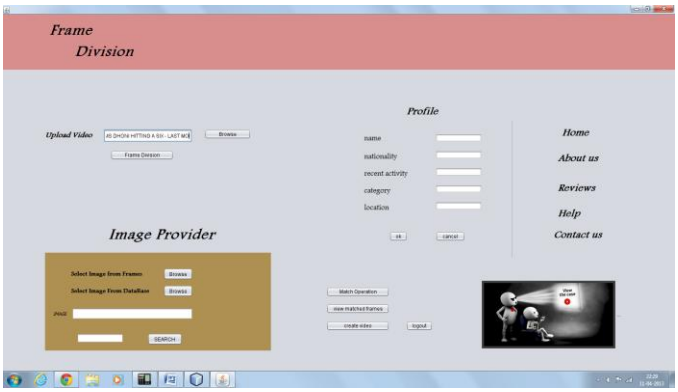
VI.SCREEN SHOTS

Home screen:

This is user home page where he/she can get login, know about the project, he/she can give reviews on the software, he/she can also get manual help and user can also contact us for any quires.



Frame division:



- After successful login, Frame Division page is displayed where the user provides video by browsing from anywhere in the system.User then performs frame division operation. The frames will be divided for every 1 minute.The process will be running internally for few seconds. These frames are stored in C:Drive in “Snapshots” folder.

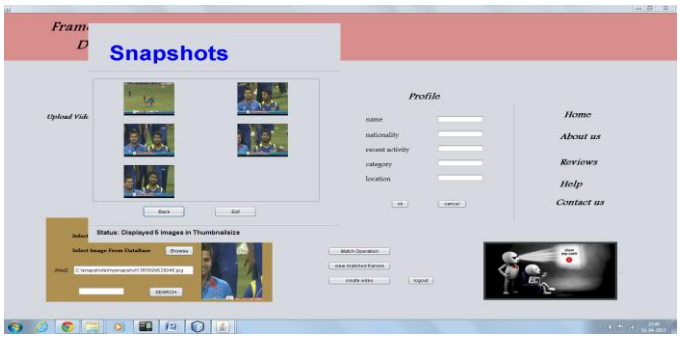
Frames Which Are Divided From Video:

ISSN: 2278 – 7798

❖ Once the frames get divided and saved they are displayed.

❖ He/she can also know the number of frames got divided as the status will be given below the images.

Providing Image And Performing Match operation:



❖ Once image is provided, user clicks on Match Operation.

❖ Each frame is matched with the provided image and these matched images are stored in
D: Drive in "Thumb Images" folder.

❖ User can know the number of images which are matched in the status.

VII . Conclusion

This system has been developed successfully incorporate all the requirements. Appropriate care has taken during database design maintain database integrity and to avoid redundancy of data. This site was developed in such a way that any further modifications needed can be easily done. User feels freely while using this site. In this all technical complexities are hidden. This site is a more user friendly.

We have developed this site for making the investigators work more easy and effective. Investigators need not go through the whole video for checking the role of a single person. Our project mainly focuses on viewing a role of a single person from a large video input. So we call this as a user friendly. This can be done by dividing the frames from the given input video. That video is divided into frames and user selects an image either from the divided frames or by the desktop. That selected frame gets matched with the video and matching operation is done and all the matched frames gets form a video again.

The quality fusers like correctness, efficiency, usability, maintainability, portability, accuracy, errors, tolerance, expandability and communicatively all are successfully done.

Hence we hereby conclude that our project is very user friendly and is very useful to the investigating departments thereby we can say that this project makes the investigators work more easy and effective.

VIII. Future Enhancements

There is always a room for improvement in any software package, however good and efficient it may be. The important thing is that the website should be flexible enough for further modifications. Considering this important factor, the web site is designed in such a way that the provisions are given for further enhancements. At present this website provides all the information using static pages. In future we can enhance our project by providing options like.

➢ Searching can be done through various sites.

➢ We can convert static web pages to dynamic web pages.

➢ In this proposed project it matches not only the face but the frame completely whereas, in the future enhancement we can match the frames by face to face.

➢ We can make the matching very accurately in the future enhancements.

➢ In the proposed system we can take a single video and match the frames whereas, in the future enhancements we can match the frames using multiple videos.

➢ We can make any format of video can be uploaded without conversion.

➢ We can improve the quality of the final video.

IX. References

ISSN: 2278 – 7798

[1] S. Bansal and M. Baker, "Observation-Based Cooperation Enforcement in Ad Hoc Networks," Research Report cs. NI/0307012,Standford Univ., 2003.
[2] R.V. Boppana and X. Su, "An Analysis of Monitoring Based Interference Revelation for Ad Hoc Networks," Proc. IEEE Globecom: Computer and Comm. Network Security Symp., Dec. 2008.
[3] R.V. Boppana and S. Desilva, "Evaluation of a Stastical Technique to Mitigate Malicious Control Packets in Ad Hoc Networks," Proc.Int'l Symp. World of Wireless Mobile and Multimedia Networks (WoWMoM)/Workshop Advanced Experimental Activities on Wireless
Networks and Systems, pp. 559-563, 2006.
[4]. National Vulnerability Data Base http://web.nvd.nist.gov/view/vuln/search
[5]. WASP: Protecting Web Applications Using Positive Tainting and Syntax-Aware Evaluation .
[6]. C. Anley, "Advanced SQL Injection In SQL Server Applications," white paper, Next Generation Security Software, 2002.
[7]. S.W. Boyd and A.D. Keromytis, "SQLrand: Preventing SQL Injection Attacks," *Proc. Second Int'l Conf. Applied Cryptography and Network Security*, pp. 292-302, June 2004.
[8]. Andrews D.J and MacEwen G., (1990), "A review of Tools and Methods for System Assurance", Andyne Computing Ltd.

- Java Servlets
  - TATA McGraw HILL
  - Karl Moss
- Oracle-SQL & Pl/Sql Programming
- -Evan Byross
- [J2EE-Overview] - http://java.sun.com/j2ee/overview.html
- [JS-NET] - http://developer.netscape.com/docs/manuals/communicator/jsref/contents.htm
- [J2EE-Home]-http://java.sun.com/j2ee/
- [J2EEComponents]
- http://java.sun.com/j2ee/blueprints/platform_technologies/component/index.html
- [SUN-Developer]- http://developer.java.sun.com/developer/
- Software Engineering
- -A Practitioner's Approach
  - McGraw-Hill Publications
  - Roger S. Pressman.

Mr.K.Ramakrishna,presently working as an assistant professor in computer science engineering and technology department, **samara university, samara ,Ethiopia** .He received the master of technology degree in Computer Science Engineering in VNR Vignana Jyothi Institute of Engineering and Technology- Jawaharlal Nehru Technological University Hyderabad, India in 2010. He received the bachelor of technology degree in The Vazir Sultan College of Engineering And technology, kakatiya university ,Warangal, India. He Has 7+ Years Teaching Experience, His Research Interests Include mobile ad-hoc networks , Data Mining, Information Security, Software Testing, mobile communication and cloud computing.

Mr. Thirupathi J, post graduated in (CSE-) M.Tech from JNTUH and graduated in (CSE) B.Tech from JNTUH,AP,INDIA,he is has 8+ experience, He is working presently as an Assoc. Professor in Department of computer science engineering and technology in Samara University ,Samara, ETHIOPIA, his research interests include, cloud computing and information security .

ISSN: 2278 – 7798