JSS SCIENCE AND TECHNOLOGY UNIVERSITY
MYSURU

Educate
Elevate
Enlighten

JSS SCIENCE & TECHNOLOGY UNIVERSITY

(*Shri Jayachamarajendra College of Engineering)*

MYSURU

CYBER SECURITY (IS742)

UNIT 1 TASKS

SUBMITTED TO:-

Dr. S.P. Shivaprakash

Department of Information science

& Engineering

JSSSTU, Mysuru

SUBMITTED BY:-

Sharath M

7TH SEM

01JST18IS066

1.CREATION OF BLOG

HTML file:

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="utf-8">
    <title>My Blog</title>
    <meta http-equiv="X-UA-Compatible" content="IE=Edge">
    <meta name="viewport" content="width=device-width, initial-scale=1">
    <meta name="keywords" content="">
    <meta name="description" content="">

    <!-- stylesheet css -->
    <link rel="stylesheet" href="css/bootstrap.min.css">
    <link rel="stylesheet" href="css/font-awesome.min.css">
    <link rel="stylesheet" href="css/templatemo-blue.css">
</head>
<body data-spy="scroll" data-target=".navbar-collapse">

<!-- preloader section -->
<div class="preloader">
    <div class="sk-spinner sk-spinner-wordpress">
       <span class="sk-inner-circle"></span>
     </div>
</div>

<!-- header section -->
<header>
    <div class="container">
        <div class="row">
            <div class="col-md-12 col-sm-12">
                <img src="images/resume pic.jpg" class="img-responsive img-circle
tm-border" alt="templatemo easy profile">
                <hr>
                <h1 class="tm-title bold shadow">Hi, I am Sharath</h1>
                <h1 class="white bold shadow">Cyber Security Enthusiast</h1>
            </div>
        </div>
    </div>
</header>

<!-- about and skills section -->
```

```
<section class="container">
    <div class="row">
        <div class="col-md-6 col-sm-12">
            <div class="about">
                <h3 class="accent">About Me</h3>
                <br>
                <p>
                    I am currently pursuing 7th semester in Information Science &
Engineering degree at SJCE Mysore.
                    I am interested in programming and gaming. I have experience
in coding in languages mentioned here.
                    My ambition is to work in an organization which provides me
with ample opportunities to enhance my skills and
                    knowledge along with contributing to the growth of the
organization.
                </p>
            </div>
        </div>
        <div class="col-md-6 col-sm-12">
            <div class="skills">
                <h2 class="white">Skills</h2>
                <strong>SQL</strong>
                <span class="pull-right">60%</span>
                    <div class="progress">
                        <div class="progress-bar progress-bar-primary"
role="progressbar"
                        aria-valuenow="60" aria-valuemin="0" aria-valuemax="100"
style="width: 60%;"></div>
                    </div>
                <strong>Python</strong>
                <span class="pull-right">90%</span>
                    <div class="progress">
                        <div class="progress-bar progress-bar-primary"
role="progressbar"
                        aria-valuenow="85" aria-valuemin="0" aria-valuemax="100"
style="width: 85%;"></div>
                    </div>
                <strong>C and C++</strong>
                <span class="pull-right">80%</span>
                    <div class="progress">
                        <div class="progress-bar progress-bar-primary"
role="progressbar"
                        aria-valuenow="80" aria-valuemin="0" aria-valuemax="100"
style="width: 80%;"></div>
                    </div>
```

```
                <strong>Cloud Computing</strong>
                <span class="pull-right">60%</span>
                    <div class="progress">
                        <div class="progress-bar progress-bar-primary"
role="progressbar"
                        aria-valuenow="60" aria-valuemin="0" aria-valuemax="100"
style="width: 60%;"></div>
                    </div>
                <strong>ML and AI</strong>
                <span class="pull-right">60%</span>
                    <div class="progress">
                        <div class="progress-bar progress-bar-primary"
role="progressbar"
                        aria-valuenow="60" aria-valuemin="0" aria-valuemax="100"
style="width: 60%;"></div>
                    </div>
                <strong>Flutter</strong>
                <span class="pull-right">70%</span>
                    <div class="progress">
                        <div class="progress-bar progress-bar-primary"
role="progressbar"
                        aria-valuenow="70" aria-valuemin="0" aria-valuemax="100"
style="width: 70%;"></div>
                    </div>
            </div>
        </div>
    </div>
</section>

<!-- education and languages -->
<section class="container">
    <div class="row">
        <div class="col-md-8 col-sm-12">
            <div class="education">
                <h2 class="white">Education</h2>
                    <div class="education-content">
                        <h4 class="education-title accent">Information Science &
Engineering</h4>
                            <div class="education-school">
                                <h5>SJCE Mysore</h5><span></span>
                                <h5>2018 August - Current</h5>
                            </div>
                        <p class="education-description">9.08 CGPA</p>
                        <h4 class="education-title accent">Secondary and Senior
secondary</h4>
```

```
                        <div class="education-school">
                            <h5>JNV Mysore</h5><span></span>
                            <h5>2011 June - 2018 March</h5>
                        </div>
                    <p class="education-description">12th - 89%
                        <br>
                        10th - 9.0 CGPA
                    </p>
                </div>
            </div>
        </div>
        <div class="col-md-4 col-sm-12">
            <div class="languages">
                <h2>Languages</h2>
                    <ul>
                        <li>Kannada</li>
                        <li>English</li>
                        <li>Hindi</li>
                    </ul>
            </div>
        </div>
    </div>
</section>

<!-- contact and PROJECTS -->
<section class="container">
    <div class="row">
        <div class="col-md-4 col-sm-12">
            <div class="contact">
                <h2>Contact</h2>
                    <p><i class="fa fa-map-marker"></i> Mysore, Karnataka</p>
                    <p><i class="fa fa-envelope"></i> sharath.prsnl@gmail.com</p>
                    <p><i class="fa fa-globe"></i>
https://www.linkedin.com/in/sharath-m-857a281a8/</p>
            </div>
        </div>
        <div class="col-md-8 col-sm-12">
            <div class="experience">
                <h2 class="white">Projects</h2>
                    <div class="experience-content">
                        <ul>
                            <li><a href="https://github.com/likhithkr7/Live-
Location-Tracker", target="_blank">Multiple Users location Tracking
App</a></li><br>
```

```
                            <li><a href="https://github.com/Sharath-
prsnl/facerecognition_AttendenceManagement", target="_blank">Facerecognition
based Attendence Management</a></li><br>
                            <li><a href="https://github.com/Sharath-
prsnl/Fee_calculator", target="_blank">Fee Calculator</a></li>
                        </ul>
                    </div>
            </div>
        </div>
    </div>
</section>

<!-- footer section -->
<footer>
    <div class="container">
        <div class="row">
            <div class="col-md-12 col-sm-12">
                <p>Copyright &copy; Sharath</p>
                <ul class="social-icons">
                    <li><a href="https://www.facebook.com/sharath.rohan/",
target="_blank", class="fa fa-facebook"></a></li>
                    <li><a href="https://github.com/Sharath-prsnl",
target="_blank", class="fa fa-github"></a></li>
                    <li><a href="https://www.linkedin.com/in/sharath-m-
857a281a8/", target="_blank", class="fa fa-linkedin"></a></li>
                </ul>
            </div>
        </div>
    </div>
</footer>

<!-- javascript js -->
<script src="js/jquery.js"></script>
<script src="js/bootstrap.min.js"></script>
<script src="js/jquery.backstretch.min.js"></script>
<script src="js/custom.js"></script>

</body>
</html>
```

2. WORKING OF A QR CODE

A QR Code, or quick response Code, is a Code that is quickly readable by a cell phone.

The structure of a QR Code

The modern-day QR Code consists of 7 parts. Each of these parts creates a sort of pixel pattern that looks similar to a crossword puzzle. Each element has a specific purpose that conveys certain information through the Code such as the print direction, timing, error tolerance, and empty spaces to differentiate the Code from what surrounds it.

Elements of a QR Code

QR Codes may appear to be random but they are in fact slightly different. Although QR Codes can be customized, the shape of the QR Code must always be square. There are 7 different elements in a QR Code.

Positioning marking:

This indicates the direction in which the QR Code is printed. Even if your camera is at an angle, you will still be able to scan the QR Code.

Alignment marking:

If the QR Code is too large, say on a billboard, this helps to orient the image.

Timing pattern:

This helps the QR Code scanner determine how large the data matrix is in the QR Code.

Quiet zone:

This is the most crucial part of the QR Code. This helps the QR Code scanner differentiate the QR code from the surroundings.

Version information:

There are over 40 different QR Code versions. These are markers present in a QR Code that specifies the one that is being used. The most common ones are versions 1 to 7.

Format information:

The format pattern consists of information about the error tolerance that makes it easier to scan the code.

Data and error correction module:

The central part of a QR Code consisting of black and white modules is where the code stores the data and has blank space surrounding them to allow up to 30% of the code to be damaged.

3. CYBER DEFAMATION CASE STUDY

Kalandi Charan Lenka vs State Of Odisha on 16 January, 2017

Case details:

Court: High Court of Orissa, Cuttack

Case No: BLAPL No.7596 of 2016

Type: Cyber Defamation

Judgment Date: 16th January 2017

Judge: Dr. D.P. Choudhury

ABSTRACT:

The factual matrix leading to the case of the prosecution is that the informant is a woman studying in the Pattamundai Women's College at Pattamundai. It is alleged, inter alia, that her father has got three daughters and his first daughter is mentally retarded girl and the second daughter is the informant herself. The victim girl while studying in College unknown obscene messages came in her mobile imputing her character. Before this also from unknown mobile number, obscene messages affecting the character of the informant also had come through Cell phone of her father. Her father after going through the message became remorse and asked the informant-victim about the matter. So, the victim woman was mentally disturbed by seeing these obscene messages. Then during the year 2015-2016 the written letters containing vulgar languages imputing the character of the victim girl came to her father. Such letters came with sexual remark and with a design to denigrate the character of the victim girl.

DEFENCE:

Learned counsel for the petitioner submitted that the petitioner is an innocent person and he was in love with the victim girl. According to him, the victim girl

has got another boyfriend who must have committed the offence as alleged. He further submitted that except offences under Sections 506 IPC and 67-A of the Information Technology Act, all other offences are bail able in nature and the offences under Sections 506 IPC and 67-A of the Information Technology Act have not prescribed capital punishment and the petitioner is in custody since last two months for which lenient view may be taken to release the petitioner on bail with any condition as deem fit and proper.

OPPOSITION:

Mr. Tripathy, learned Additional Standing Counsel vehemently opposed the bail stating that not only the victim girl has been defamed by the overt act of the petitioner but also through the electronic device the crime has been committed by the petitioner to sexually harass her and to cause intimidation to the victim girl so as to compel her to surrender to the design of the petitioner. He further submitted that the Cyber Cell of the Crime Branch has collected enough materials to find out prima facie case against the petitioner. Since it is a Cyber Crime which is a threat to the society and dignity of the women, the court should not allow the petitioner to go on bail.

VERDICT:

With due regard, in the above case under **Sections 292, 294 of I.P.C. and Sections 67, 67A and 67B of the I.T. Act,** charge was made but the Hon'ble Apex Court was pleased to opine that when the offence under the **I.T. Act** is made out, similar offence under **Section 292** of I.P.C. cannot go together for the reason that the **I.T. Act** being special provision would operate in the field of offence committed through electronic form.

Considering the punishment prescribed for the offence prima facie found out, most of the offences as alleged by prosecution are bail able, character of evidence as discussed above including absence of criminal antecedent of petitioner and period of his custody, lenient view is taken to release him on bail. But the dignity of the woman as discussed above has to be kept in view as stalking or opening of fake

Facebook account or obscene representation including morphed naked photographs are menace to the society and the right of the woman.

16. Thus, balancing the act committed, prima facie offence found out against the petitioner and protection of the dignity/right of victim woman, the petitioner should be released on bail by imposing strict conditions. So, let the petitioner be released on bail of **Rs.50,000/- (Rupees fifty thousand)** with two solvent sureties each, out of which one surety should be one of his parents, for the like amount to the satisfaction of the learned J.M.F.C., Pattamundai in G.R. Case No.225 of 2015 arising out of Cyber Crime P.S. Case No.07 of 2016 on conditions that (i) he would appear before the Investigating Officer on every Sunday at 10.00 A.M. till Final Form is submitted and also would be available to the I.O. as and when required for the purpose of further investigation, if any, after submission of Final Form; (ii) He would not commit any offence including the offence through the electronic form while on bail; (iii) He would not induce or threaten the victim woman or her parents or any prosecution witnesses directly or indirectly through any manner; and (iv) He would also not visit the town of Pattamundai where the victim or her family members reside and place where the victim is studying or working except in the occasion when he would have to appear before the I.O. or before the Court in session of the matter till submission of Final Form and in the event of filing of charge-sheet till conclusion of the trial.

4. METHODS AND TOOLS TO IDENTIFY FORGED DOCUMENTS

The different methods of forgery detection include examination, authentication and verification. Multiple methods of detection may be used to correctly identify a single forgery. More than one opinion on the results of detection methods also may be needed to confirm that a forgery has definitely occurred. Detection of forgery through examination, authentication and verification may be used to identify almost any type of forgery, including handwritten forgery, counterfeit forgery, digital forgery and art forgery.

Forgery detection by Examination involves looking closely at an object to determine if it is valid. For example, to check an art piece for signs of forgery, an examiner may look for indications that the piece was not created in a specific time period. If a piece of supposedly antique art is in a new wood frame or machine-made nails were used in a supposedly aged frame, these signs of forgery may be detected through an examination.

Forgery detection by Authentication will use tests to conclude if an item is real. Authentication must be carried out with a measurable test. For example, methods of authentication on suspected forged art may include carbon dating, X-ray diffraction and infrared analysis. Some methods of authentication are more reliable than others, and newly released authentication tests usually must be backed up with another reliable test until the new tests are proved reliable.

Forgery detection through Verification involves obtaining confirmation and locating evidence to conclusively determine if forgery has occurred. Verification is often used to detect forged emails for job scams; the receiver of the e-mail may simply look up the information of the company or call a representative of the company to confirm whether the email is real. A check can be verified by depositing the check in a bank and waiting for it to clear, and a signature may be verified if witnesses can swear or prove they were present when a document was signed.

Method 1: Provenance research

In all cases of suspected forgery, provenance research should be the first form of fake detection employed. Provenance is an art world term for an artwork's ownership history: the record of who owned it and when. In a perfect world, we would have detailed information about who bought and sold the artwork going all the way back to the moment the original artist took it off their easel. In the real world, we are often not so lucky. Records are lost or were never kept, deals are sealed with a handshake, and, as we will discuss further in Week 3, art can be seized illegally by organizations and states who then seek to obscure the origins of the works. Provenance investigators, then, unravel the history of an artwork using public and private records, archives, and other art historical research methods. At times, through looking at correspondence, catalogues, sales receipts, and even the

Artwork itself they discover it was very unlikely or even impossible for an artist to create a particular work. At other times, they might uncover a previously unknown legitimate record of the artwork's existence which provides strong evidence that it is real.

Method 2: Microscopy

The magnifying glass has been the indispensable tool of centuries of art investigators. Modern microscopy, a broad term that refers to magnifying images, takes the magnifying glass to a whole new level. By simply looking at a small paint sample from a painting under an optical microscope, one can learn a lot about the painting. Through an optical microscope, particularly a stereo microscope which allows for 3D visuals, the investigator can get a detailed look at how paint has been layered on an artwork and, especially, can see whether paint has been added at a much later date: for example, to add Rembrandt's signature to an old painting that isn't actually a Rembrandt. Microscopes are also good for observing craquelure, the cracks that appear in older paintings over time. Craquelure is like an old painting's fingerprint: different paintings, from different countries, produced at different times have different craquelure patterns and they are incredibly difficult to replicate in a fake. Thus, under a microscope, art scientists can determine if a painting has the correct pattern of craquelure. If the tell-tale cracks are either missing or incorrect, the scientist knows they have a forgery on their hands.

Method 3: Mass spectrometry

To put it as simply as possible, mass spectrometry is used to identify exactly what pigments were used to create a particular painting. To do this, the mass of molecules in a pigment sample is determined by measuring their mass-to-charge ratio. The results are displayed in the form of a chart known as a spectrum, and the art scientist can then compare the masses present in the pigment sample to the known masses of particular elements or molecules. For example, using mass spectrometry, the scientist can determine whether lead is present in what is thought to be a very old painting. Lead was commonly used by painters in the past, but because of the risk of lead poisoning, it is now rare and difficult to come by. No lead in the old painting raises clear questions about authenticity. Likewise, mass

spectrometry can detect the presence of pigments that were not yet created when the artwork being tested was supposedly made. If mass spectrometry shows that a supposed Leonardo painting contains pigment that wasn't manufactured until 1975, it's pretty clear that the piece is a fake.

Method 4: X-ray

X-ray technology can also be used to determine whether a possible forgery is painted on a reused canvas. Clever art forgers know that you can't paint what is meant to be an old painting on a new canvas. Simply looking closely at it with, say, a microscope (see Method 2) will reveal its lack of age. Thus forgers tend to paint over less valuable but still old artworks to create a more valuable fake. The reuse of canvases is not unknown in the art world: starving artists from all periods sought to save money by painting over their own or other people's paintings. But in that case, the older painting will obviously always be under the newer painting. If, for example, a suspect 17th century painting is X-rayed and what is obviously a 19th century painting is found beneath it, an art scientist would call the painting a fake. Furthermore, if through art historical research it was known that an artist only painted on new canvases, the presence of any previous painting below the surface would be a strong signal that a forger was at work.

Method 5: Infrared reflectography

Many artists don't just paint a whole painting directly on a canvas with no plan whatsoever. It is common practice for an artist to make at least some marks, known as under drawings, before and during the painting process to help guide the form and structure of the piece. Some artists use pencils, others use paint. Some artists use only tiny marks, others sketch nearly complete versions of the final piece. In nearly all instances, artists use the same painting preparation technique over again and in their own distinct way. Through the use of infrared reflectography, art scientists can see below the surface of a painting and investigate the otherwise-invisible sketches below. This technique is based on the fact that unlike light in our visual range, infrared light can penetrate the layers of pigment until it reaches an artwork's under drawings. The infrared light is then reflected back into a specially-designed camera which then produces an image of what is down there.