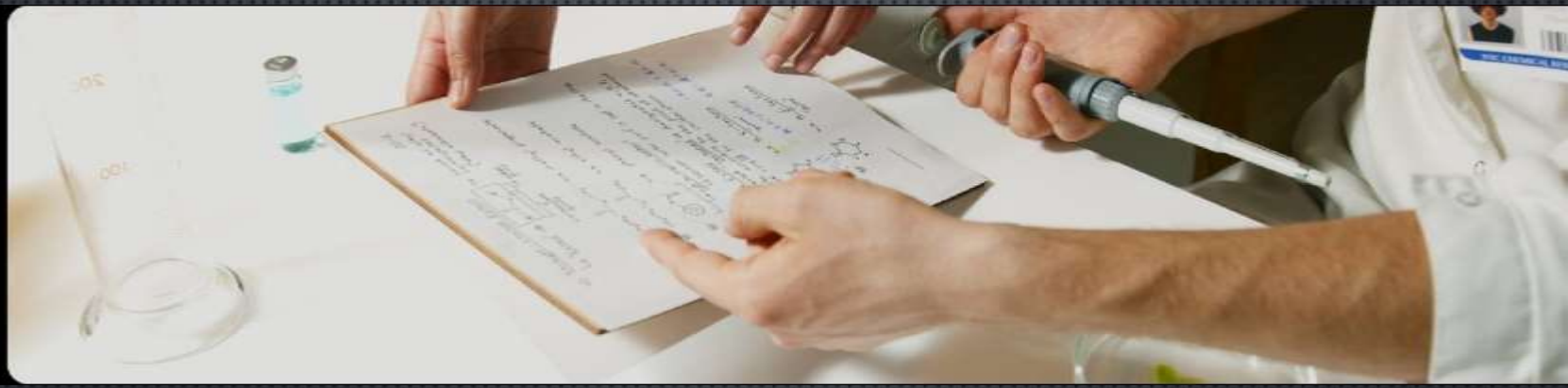


MediScan: Your Handy Prescription Reader Tool

MediScan is a user-friendly web-based tool that leverages advanced OCR technology to extract and read handwritten medical prescriptions. It empowers patients to easily understand their doctor's instructions, making healthcare more accessible and efficient.

TEAM : MMP CODE

- TEAM LEADER:
- MUBEENUNNISA.J

- TEAM MEMBERS:
- PRADIKA.IK
- MRIDULA.S

Challenges of Handwritten Prescriptions

Exploring the difficulties faced by patients with handwritten prescriptions and their implications on health.

Difficult to read
Handwritten prescriptions can be unclear.

Misinterpretation risks
Errors occur in medication details.

Elderly challenges
Older patients struggle with reading.

Visual impairment issues
Visually impaired have more difficulties.

Health impacts
Errors affect patient health outcomes.

CREATING A CLIENT-SIDE PRESCRIPTION READER

An innovative web app that reads handwritten prescriptions for better user experience and privacy

Extracts key instructions from prescriptions.

The web application efficiently captures crucial medicine instructions directly from handwritten prescriptions, ensuring clarity and accuracy foi users

Voice output for user convenience.

To enhance accessibility, the app reads out the extractedl instructions making it easier for users to understand theii medication needs.

Client-side operation ensures privacy.

By running entirely on the client-side the application guarantees that sensitive prescription data remains private and secure, protecting user information.

Fast processing for instant results.

The application is designed for speed providing immediate feedback and instruction extraction without the need for server interaction, ensuring a smooth user experience

User-friendly design for all ages.

With an intuitive interface, the web app caters to users of all ages, making it easy for anyone to use and benefit from its features.

Technologies

Exploring the key technologies that power our handwriting prescription reader.

BEHIND MEDISCAN: AN OVERVIEW

UI Development with HTML, CSS, JavaScript

These core web technologies facilitate the creation of a visually appealing user interface, enhancing interactivity and usei experience for MediScan

Text Extraction Using Tesseract.js

This lpowerful client-side OCR library enables accurate extraction of text from images, making it essential for interpreting handwritten prescriptions efficiently.

Image Enhancement via Canvas API

Utilizing the Canvas API allows ïor advanced image processing techniques such as grayscale conversion and contrast adjustments, improving OCR accuracy

Voice Instructions with Speech Synthesis API

The Speech Synthesis API converts text ïnstructions into speech, providing an engaging and accessible way for users to interact with MediScan.

Understanding the MediScan Workflow for Prescription Reading

A streamlined approach to interpreting handwritten prescriptions using advanced technology.

1

Upload Prescription Image

Users start by uploading a clear image of their handwritten prescrlp1!ion, provioling the initial document for processing

2

Image Enhancement

The uploaded image undergoes a transformation where it is converted to grayscale and its contrast is enhanced îor better clarity

3

Text Extraction

Using Tesseract.js, the system extracts text from the enhanced image, ensuring accurate recognition of the handwritten notes.

4

Filtering Important Lines

The extracted text is filtered to include only significant information such as dosage, timings, and medicine names, eliminating unnecessary details

5

Text-to-Speech Functionality

To aid users, the system offers a Text-to-Speech feature, allowing them to listen to the important instructions extracted from their prescription

6

User-Friendly Experience

The entire workflow is designed to be accessible and informal, ensuring that users can easily understand and interact with the iec.nnology.

CODE:

```
            <!DOCTYPE HTML>
<HTML LANG="EN">
<HEAD>
  <META CHARSET="UTF-8" />

  <META NAME="VIEWPORT" CONTENT="WIDTH=DEVICE-WIDTH, INITIAL-SCALE=1.0"/>
  <TITLE>MEDISCAN – HANDWRITING PRESCRIPTION READER</TITLE>
  <SCRIPT
SRC="HTTPS://CDN.JSDELIVR.NET/NPM/TESSERACT.JS@2.1.1/DIST/TESSERACT.MIN.JS"></S
CRIPT>
  <STYLE>
    BODY {
      FONT-FAMILY: 'SEGOE UI', SANS-SERIF;
      BACKGROUND: LINEAR-GRADIENT(135DEG, #E1F5FE, #FFFFFF);

      TEXT-ALIGN: CENTER;
```

```
PADDING: 30PX;
    COLOR: #2C3E50;
  }
  H1 {
    COLOR: #00796B;
  }
  INPUT, BUTTON {
    PADDING: 10PX 20PX;
    MARGIN: 10PX;
    FONT-SIZE: 16PX;
    BORDER: NONE;
    BORDER-RADIUS: 5PX;
  }
  BUTTON {
    BACKGROUND-COLOR: #00796B;
    COLOR: WHITE;
    CURSOR: POINTER;
  }
  BUTTON:HOVER {
    BACKGROUND-COLOR: #004D40;
  }
```

```
#OUTPUT {
    MARGIN-TOP: 30PX;
    BACKGROUND: #FFFFFF;
    PADDING: 20PX;
    BORDER-RADIUS: 10PX;
    BOX-SHADOW: 0 4PX 8PX RGBA(0,0,0,0.1);
    TEXT-ALIGN: LEFT;
    MAX-WIDTH: 600PX;
    MARGIN-LEFT: AUTO;
    MARGIN-RIGHT: AUTO;
  }
  #TEXTOUTPUT {
    WHITE-SPACE: PRE-WRAP;
    FONT-SIZE: 16PX;
    COLOR: #333;
  }
 </STYLE>
</HEAD>
<BODY>

 <H1>□□ MEDISCAN – READ HANDWRITTEN INSTRUCTIONS</H1>

 <INPUT TYPE="FILE" ID="IMAGEINPUT" ACCEPT="IMAGE/*"/>
 <BR/>
 <BUTTON ONCLICK="RUNOCR()">🔍 SCAN HANDWRITING</BUTTON>
 <BUTTON ONCLICK="SPEAKTEXT()">🔊 READ INSTRUCTIONS</BUTTON>
```

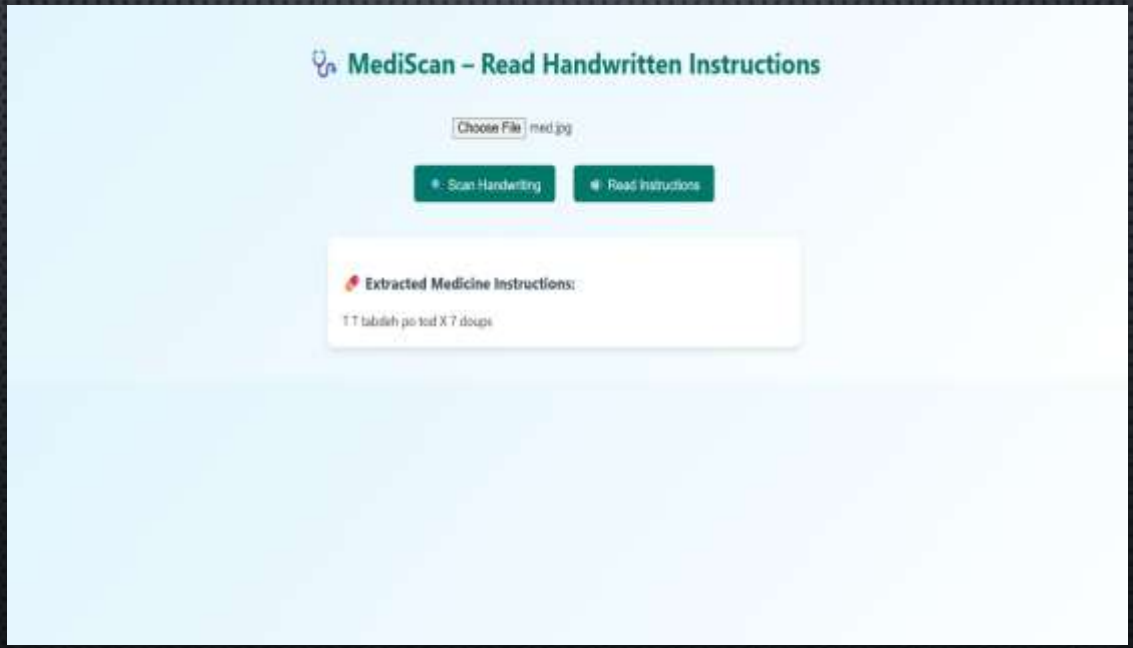
```
<DIV ID="OUTPUT">
   <H3>💊 EXTRACTED MEDICINE INSTRUCTIONS:</H3>
   <DIV ID="TEXTOUTPUT">(YOUR RESULT WILL APPEAR HERE...)</DIV>
  </DIV>

  <SCRIPT>
   LET FILTEREDTEXT = '';

   FUNCTION RUNOCR() {
    CONST IMAGE = DOCUMENT.GETELEMENTBYID('IMAGEINPUT').FILES[0];
    IF (!IMAGE) {
     ALERT("SELECT A PRESCRIPTION IMAGE, .");
     RETURN;
    }

    DOCUMENT.GETELEMENTBYID('TEXTOUTPUT').TEXTCONTENT = "SCANNING...";
CONST READER = NEW FILEREADER();
    READER.ONLOAD = FUNCTION(E) {
     CONST IMG = NEW IMAGE();
     IMG.SRC = E.TARGET.RESULT;
```

```
IMG.ONLOAD = FUNCTION() {
        CONST CANVAS = DOCUMENT.CREATEELEMENT('CANVAS');
        CANVAS.WIDTH = IMG.WIDTH;
        CANVAS.HEIGHT = IMG.HEIGHT;
        CONST CTX = CANVAS.GETCONTEXT('2D');

        // CONVERT TO GRAYSCALE & ENHANCE CONTRAST
        CTX.DRAWIMAGE(IMG, 0, 0);
        CONST IMAGEDATA = CTX.GETIMAGEDATA(0, 0, CANVAS.WIDTH, CANVAS.HEIGHT);
        CONST DATA = IMAGEDATA.DATA;
        FOR (LET I = 0; I < DATA.LENGTH; I += 4) {
          CONST AVG = (DATA[I] + DATA[I + 1] + DATA[I + 2]) / 3;
          CONST CONTRAST = AVG > 128 ? 255 : 0;
          DATA[I] = DATA[I + 1] = DATA[I + 2] = CONTRAST;
        }
        CTX.PUTIMAGEDATA(IMAGEDATA, 0, 0);

        TESSERACT.RECOGNIZE(CANVAS, 'ENG', {
          TESSEDIT_CHAR_WHITELIST:
'ABCDEFGHIJKLMNOPQRSTUVWXYZABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789 MGMG.,-()',
```

```
PSM: 6,
          LOGGER: M => CONSOLE.LOG(M)
        }).THEN(({ DATA: { TEXT } }) => {
          CONST LINES = TEXT.SPLIT('\N');
          CONST FILTERED = LINES.FILTER(LINE =>

/TABLET|TAB|TAKE|MG|DOSE|DAILY|NIGHT|MORNING|ONCE|TWICE|AFTER|BEFORE/I.TEST(
LINE)
          );
          FILTEREDTEXT = FILTERED.JOIN('\N');
          DOCUMENT.GETELEMENTBYID('TEXTOUTPUT').TEXTCONTENT = FILTEREDTEXT || "NO CLEAR
MEDICINE INSTRUCTIONS FOUND.";
        }).CATCH(ERR => {
          CONSOLE.ERROR(ERR);
          ALERT("OCR FAILED. TRY A CLEARER IMAGE, BABE.");
        });
      };
    };
    READER.READASDATAURL(IMAGE);
  }
```

```
 FUNCTION SPEAKTEXT() {
     IF (!FILTEREDTEXT.TRIM()) {
       ALERT("NOTHING TO READ YET! PLEASE SCAN A PRESCRIPTION.");
       RETURN;
     }

     CONST SPEAK = NEW SPEECHSYNTHESISUTTERANCE(FILTEREDTEXT);
     SPEAK.LANG = 'EN-IN';
     SPEECHSYNTHESIS.SPEAK(SPEAK);
   }
  </SCRIPT>

</BODY>
</HTML>
```

WORKING OUTPUT:



Key Features of MediScan: Your Prescription Assistant

Discover the innovative features of MediScan that enhance accessibility and usability for medication management

Medicine Extraction

Extracts medicine-related instructions.

Voice Output

Speech output for accessibility.

Browser-Based

No backend/server dependency.

User-Friendly

Simple and user-friendly interface

Timely Reminders

Helps with dosage and timing

Accessibility Focus

Designed for inclusive use

Empowering [redacted] & Use Cases

Discover how MediScan aids patients, pharmacies, and those with visual impairments in reading prescriptions safely

PATIENTS WITH MEDISCAN: BENEFITS

- **Read Difficult Prescriptions**
  MediScan helps patients understand and accurately read challenging prescriptions, promoting better medication adherence
- **Support for Pharmacies**
  This tool is useful for pharmacies and healthcare workers, improving efficiency and accuracy in prescription filling
- **Aid for the Visually Impaired**
  MediScan can assist visually impaired or elderly Individuals, ensuring they understand their medication instructions clearly
- **Promotes Safe Consumption**
  By providing clear information, MediScan promotes safe and accurate medicine consumption, reducing the risk oTerrors

Exploring THE FUTURE OF MEDISCAN

Innovative advancements for enhanced prescription reading and patient care

- Multiple language support
  - Expand accessibility for users
- Improved handwriting recognition
  - Enhance AI detection accuracy.
- PDF and notifications export
  - Convenient sharing options
- Integration with health records
  - Streamline patient data access
- User-friendly interface
  - Simplify user interactions
- Real-time updates
  - Stay informed instantly.

LIVE DEMO OF MEDISCAN: PRESCRIPTION READER

Experience the power of MediScan with a hands-on demo

Upload a sample prescription image.

Provide a sample for processing.

Show extracted instructions.

Demonstrate information retrieval.

Demonstrate speech ,ead,n ,

Show audio output feature.

Highlight accuracy of extraction.

Display reliability of results.

MEDISCAN: BRIDGING PRESCRIPTION GAPS

Transforming handwritten prescriptions into digital clarity for improved healthcare access.

MediScan solves a common healthcare issue.

It offers a straightforward, accessible tool Tor interpreting handwritten prescriptions, enhancing patient care.

Bridges traditional and digital methods.

MediScan effectively connects outdated handwritten prescriptions with the clarity of modern digital formats for better accuracy.

Scalable for future medical tech advancements.

The platform is designed to grow and adapt, ensuring it remains relevant as medical technology evolves.

JOIN US IN MAKING HEALTHCARE ACCESSIBLE FOR EVERYONE

To ensure that MediScan is accessible to all patients, we must actively seek partnerships with healthcare providers. This collaboration will help integrate MediScan into various services, enhancing the overall healthcare experience and ensuring that every patient benefits from our innovative handwriting prescription reader.

,, , ' ”’-æa ,°œ, preseutotionsg