

### Exam Results

- **Excel sheets:** to create excel sheets we used `xlwt`.
- **PDF report:** we used `lxml` library for java to create a PDF file.
- **Google Drive:** We used Google Drive API in our project and we generate API KEY, and we used it to upload files.

### Creating box file

We created box file for every image, there were errors in recognizing the numbers, and so we corrected this errors by using `JessKnoxEditor`



### What is Marks Reader website?

The Marks Reader website is a web application that allows users to upload their exam results and view them online. It is built using Java and JavaScript.



### Handwritten Digit Recognition using JESSKNOX

The JESSKNOX library is used to recognize handwritten digits.



### What is Marks Reader application?

- The application is a web application that allows users to upload their exam results and view them online.
- The application is built using Java and JavaScript.
- The application is built using the JESSKNOX library.

We created the application using the JESSKNOX library.



### Demo

### Conclusion

Mobile applications has led to the development of the educational process in many respects. This application also helps in developing the educational process by reducing the time and effort required to collect student marks in the exams and transfer them to files.

### Future work

- Read handwritten registration number.
- Read the names rather than taking them from the table stored in the database, which is by training Tesseract OCR engine to recognize handwritten characters.

### Contents

- What is Marks Reader application?
- What is Marks Reader website?
- Our Methodology.
- Results and Demo.
- Conclusion.
- Future work.

# Marks Reader

Thank you ^\_^

Hanan Abudura & Nuha Abdulhadi

### Exam Results

- **Excel sheets:** to create excel sheets we used `xl.jar`.
- **PDF reports:** we used `libext-libj2p` for java to create a PDF file.
- **Google Drive:** We used Google Drive API in our project and we generate API KEY, and we used it to upload files.

### • Creating box file:

We created box file for every image, there were errors in recognizing the numbers and so we corrected this errors by using *DesktopEditor*.



Handwritten Digit Recognition using *libsvm*

### • Training:

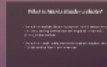
The SVM is trained for 10000 samples for digits.



### Demo

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### What is Marks Reader application?

- This system is used to capture marks from handwritten and read from the reader (either through the camera).
- This system is used to capture marks from the camera.
- This system is used to capture marks from the camera.

### Conclusion

Mobile applications has led to the development of the educational process in many respects. This application also helps in developing the educational process by reducing the time and effort required to collect student marks in the exams and transfer them to files.

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# Marks Reader

Hanan Abudura & Nuha Abdulhadi

# *Contents*

- *What is Marks Reader application?*
- *What is Marks Reader website?*
- *Our Methodology.*
- *Results and Demo.*
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# *What is Marks Reader application?*

- This app can be used to grade multiple choices question and read the registration number through the camera.
- This app read the handwritten students' marks in other questions.
- This app helps the user to obtain results related to the exam.

# *What is Marks Reader website?*

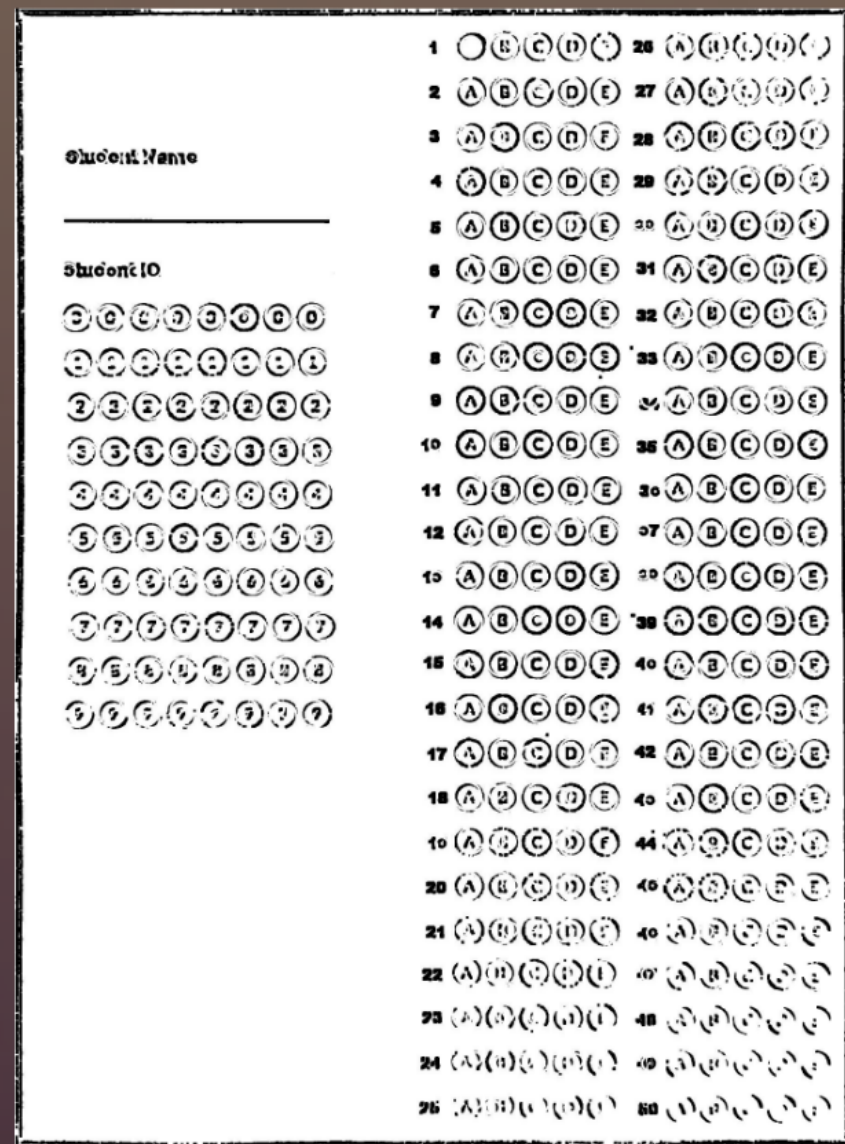
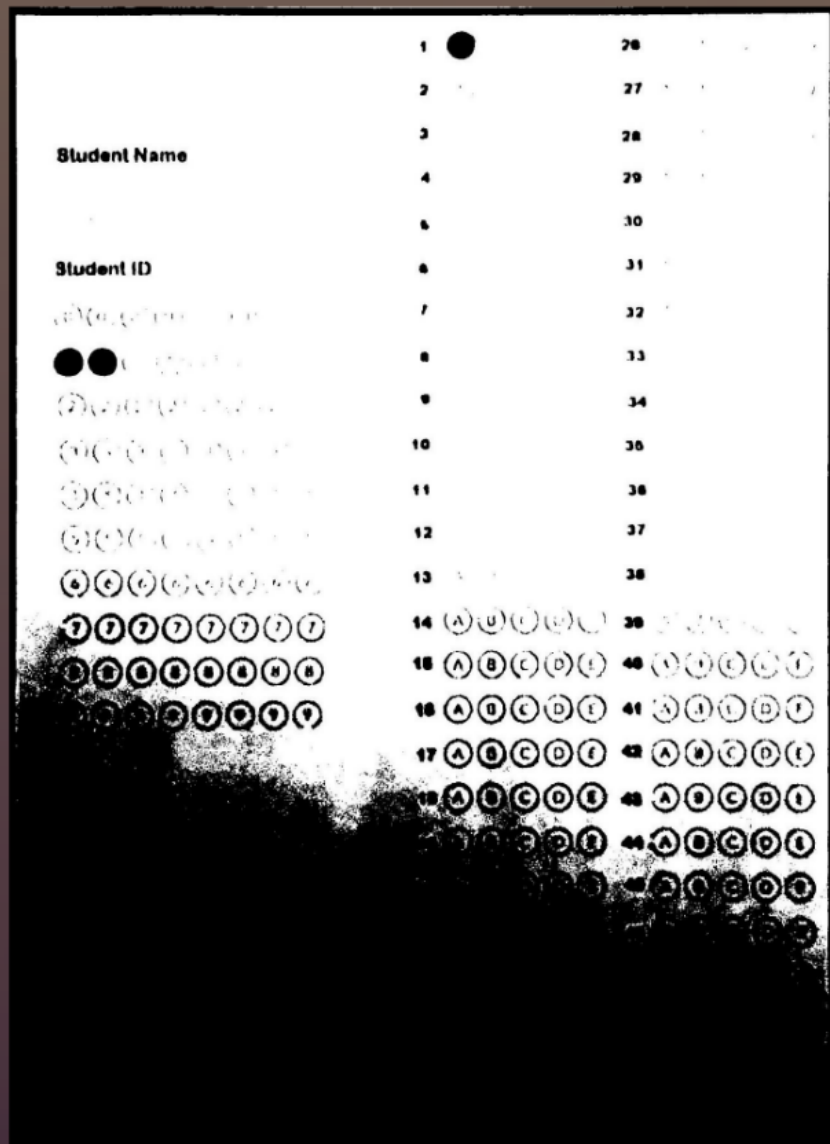
- This website enables the user to use the Excel sheet containing the marks and registration numbers to upload these marks directly to the students.
- This website sends notification to the students to inform them that the mark in Marks Reader website.

## *Our Methodology*

### *Key answer and student answer*

For scanning image, we build our application that at first search for largest quadrilateral, then draw box around this page, and to do that we used **OpenCV** library which can analysis the image that taken by camera.

Student Name	_____	1	A	B	C	D	E	26	A	B	C	D	E
Student ID	0000000000	2	A	B	C	D	E	27	A	B	C	D	E
	1111111111	3	A	B	C	D	E	28	A	B	C	D	E
	2222222222	4	A	B	C	D	E	29	A	B	C	D	E
	3333333333	5	A	B	C	D	E	30	A	B	C	D	E
	4444444444	6	A	B	C	D	E	31	A	B	C	D	E
	5555555555	7	A	B	C	D	E	32	A	B	C	D	E
	6666666666	8	A	B	C	D	E	33	A	B	C	D	E
	7777777777	9	A	B	C	D	E	34	A	B	C	D	E
	8888888888	10	A	B	C	D	E	35	A	B	C	D	E
	9999999999	11	A	B	C	D	E	36	A	B	C	D	E
		12	A	B	C	D	E	37	A	B	C	D	E
		13	A	B	C	D	E	38	A	B	C	D	E
		14	A	B	C	D	E	39	A	B	C	D	E
		15	A	B	C	D	E	40	A	B	C	D	E
		16	A	B	C	D	E	41	A	B	C	D	E
		17	A	B	C	D	E	42	A	B	C	D	E
		18	A	B	C	D	E	43	A	B	C	D	E
		19	A	B	C	D	E	44	A	B	C	D	E
		20	A	B	C	D	E	45	A	B	C	D	E
		21	A	B	C	D	E	46	A	B	C	D	E
		22	A	B	C	D	E	47	A	B	C	D	E
		23	A	B	C	D	E	48	A	B	C	D	E
		24	A	B	C	D	E	49	A	B	C	D	E
		25	A	B	C	D	E	50	A	B	C	D	E



# *Handwritten Digits Recognition using Tesseract*

- *Training:*

The MNIST dataset has 60000 samples for digits.



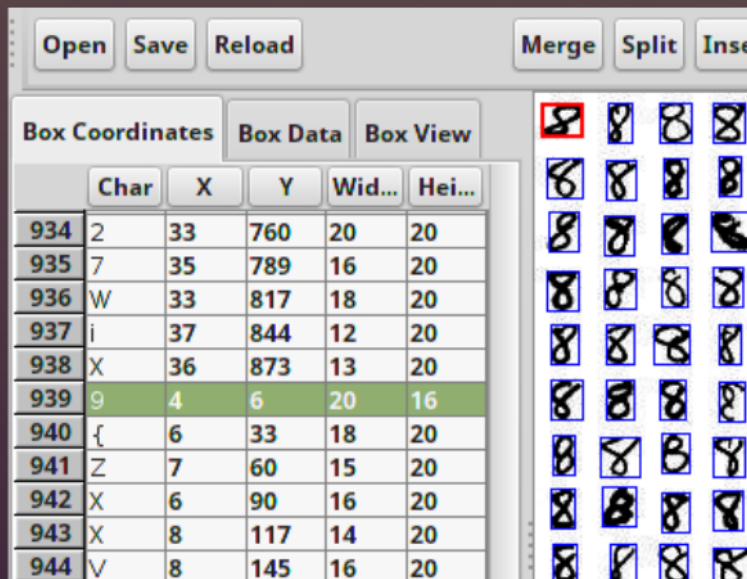
MNIST Image



Inverted Image

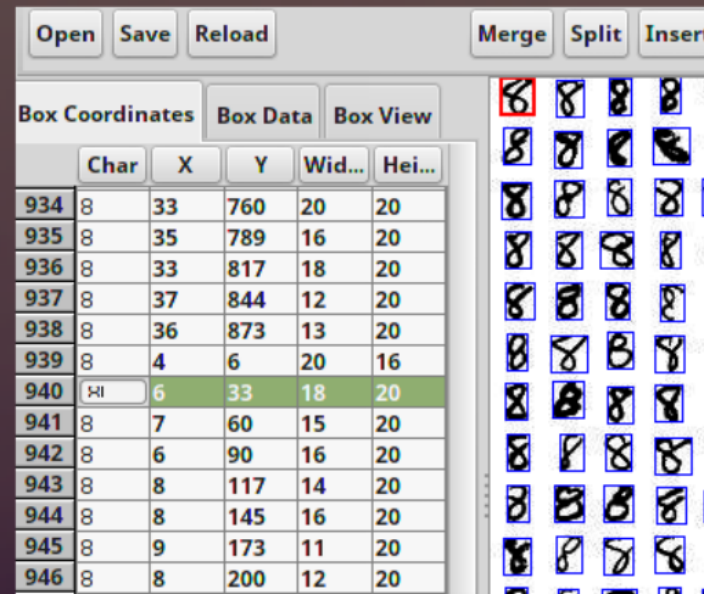
- *Creating box file:*

We created box file for every image, there were errors in recognizing the numbers and so we corrected this errors by using *JTessBoxEditor*.



Box Coordinates		Box Data		Box View	
	Char	X	Y	Wid...	Hei...
934	2	33	760	20	20
935	7	35	789	16	20
936	W	33	817	18	20
937	i	37	844	12	20
938	X	36	873	13	20
939	9	4	6	20	16
940	{	6	33	18	20
941	Z	7	60	15	20
942	X	6	90	16	20
943	X	8	117	14	20
944	V	8	145	16	20

Box file with errors



Box Coordinates		Box Data		Box View	
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934	8	33	760	20	20
935	8	35	789	16	20
936	8	33	817	18	20
937	8	37	844	12	20
938	8	36	873	13	20
939	8	4	6	20	16
940	6	6	33	18	20
941	8	7	60	15	20
942	8	6	90	16	20
943	8	8	117	14	20
944	8	8	145	16	20
945	8	9	173	11	20
946	8	8	200	12	20

Box file without errors

An-Najah National University  
Faculty of Engineering



جامعة النجاح الوطنية  
كلية الهندسة

Department Name  
Course Name

Instructor Name:  
Academic Year:  
Semester:  
Credit Hours:  
Date:  
Exam Duration:

Student  
Name,  
Registration Number;  
Serial Number;  
Section:  
Total Exam Mark:  
Exam Weight:

Questions	Points	ILO'S	ILO'S%	Question grade	required time
Q1	50	1	100%		40
Q2	50	1	100%		20
Student Grade					

**Exam Notes:**

- 1- Closed Books & Notes.
- 2- Read each problem carefully before attempting to solve it.
- 3- Write all work on this exam paper.

***Good Luck***

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# *Demo*

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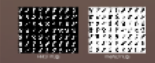
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