

INVOICE MATCHING WITH PURCHASE ORDER

In my project extracting the details from the invoice and download the bills from akaunting application compare both the invoices and bills matches forward the invoice to the accounts team for payment doesn't match reply to the customer bills doesn't match

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I. Introduction

I.1 Purpose of the document

The Process Definition Document outlines the business process chosen for automation using UiPath Robotic Process Automation (RPA) technology.

The document describes the sequence of actions performed as part of the business process, the conditions and rules of the process prior to automation and how they are envisioned to work after automating it, partly or entirely. This specifications document serves as a base for developers, providing them with the details required for applying robotic process automation to the selected business process.

I.2 Objectives

The business objectives and benefits expected by the Business Process Owner after automation of the selected business process are:

- Processing time is reduced by 80%.
- Better monitoring of the overall activity by using the logs provided by the robots.
- Reduces human error.

I.3 Process key contact

The specifications document includes concise and complete requirements of the business process and it is built based on the inputs provided by the **process Subject Matter Expert (SME)/ Process Owner**.

The **Process Owner** is expected to **review it and provide signoff for accuracy** and completion of the actions, context, impact and a set of process exceptions. The details are to be included in the table below.

Role	Name	Contact details (email, phone number)	Notes
Accountant	HARINI	1813323037012@ethirajcollege.edu.in	

I.4 Minimum Pre-requisites for automation

1. A filled in Process Definition Document
2. Test Data to support development
3. User access and creation of user accounts (licenses, permissions, restrictions to create accounts for robots)

II. As-Is process description

II.1 Process Overview

General information about the process selected for RPA prior to automation.

#	Item	Description
1	Process full name	Invoice matching with purchase order
2	Process Area	Supply chain
3	Department	Finance and Accounting
4	Process short description (operation, activity, outcome)	Extracting the details from different invoices and comparing with the bills downloaded from the akaunting application if it matches send the mail to the account team for the payment else send the mail to the vendor that the total mismatched
5	Role(s) required for performing the process	Accountant
6	Process schedule and frequency	Monthly
7	# of items processed /reference period	2 (Sample data)
8	Process execution time	8 min. 46 sec.
9	Peak period (s)	Monthly
10	Transaction Volume During Peak period	30 to 40 mail
11	Total # of FTEs supporting this activity	2
12	Expected increase of volume in the next reference period	100
13	Level of exception rate	7
14	Input data	Invoices
15	Output data	Invoice approved, Rejected invoice

II.2. Applications used in the process

The table includes a comprehensive list of all the applications that are used as part of the process to be automated to perform the given actions in the flow.

#	Application name & version	System Language	Thin/Thick Client	Environment/ Access method	Comments
1.	Excel - 2010	C#,c++	Thick Client	Local environment	-
2.	Chrome Browser - 90.0.4430.93	Python,assembly, C++	Thick Client	Local environment	-
3.	Adobe acrobat reader - 1.5(Acrobat 6.x)	C	Thick Client	Local environment	-

*Add more rows to the table to include the complete list of applications.

II.3 As-Is Process map

High Level As-Is Process Map:

This chapter depicts the As-Is business process at a High Level to enable developers to have a high-level understanding of the current process.



II.4 Process statistics

High level statistics

Processes	Windows	Actions	Mouse clicks	Keys pressed	Text entries	Hotkeys used	Time
5	18	90	73	255	13	1	8 min. 46 sec.

Detailed statistics

Window name	Mouse Clicks	Text entries	Keys pressed
Gmail - Google Chrome	3	2	44
Open the invoice mail - Ethiraj College for Women	3	0	0
Login - Akaunting - Google Chrome	5	2	33
Dashboard - Akaunting - Google Chrome	2	0	1
Dashboard - ethiraj college - Google Chrome	2	0	0
Bills - ethiraj college - Google Chrome	2	0	0
Open another invoice mail- Ethiraj College for Women	8	4	112
Open the statement invoice- Ethiraj College for	5	2	38
Microsoft Excel - Bills	1	0	0
Save As	4	0	0
Microsoft Excel- Bills	5	0	0
Microsoft Excel - report	10	3	27
Open the invoicemail folder	2	0	0
Task Switcher	8	0	0
Export Inv PL No 026-1.pdf - Adobe Acrobat Reader DC (32-bit)	4	0	0
invoice-01.pdf - Adobe Acrobat Reader DC (32-bit)	3	0	0

II.5 Detailed As-Is Process Actions

1. Gmail - Google Chrome

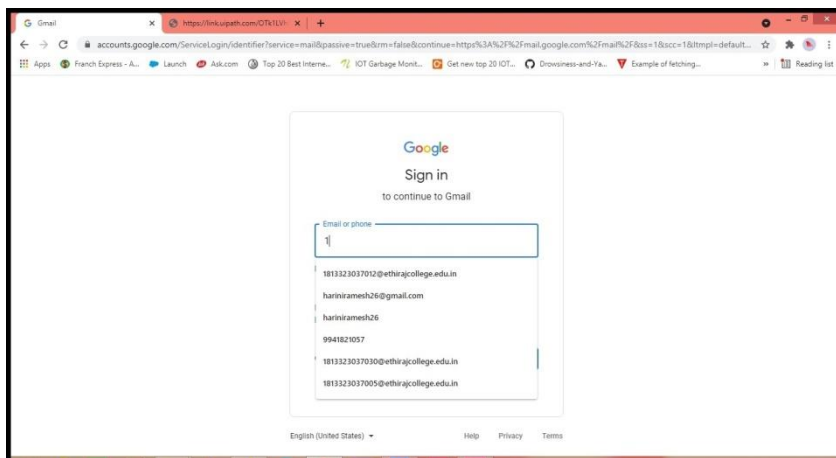
Est. time: 40.2 sec.

1.1 Entering email address

Enter the email address in the textbox

Est. time: 2.7 sec.

Action: Keyboard Input

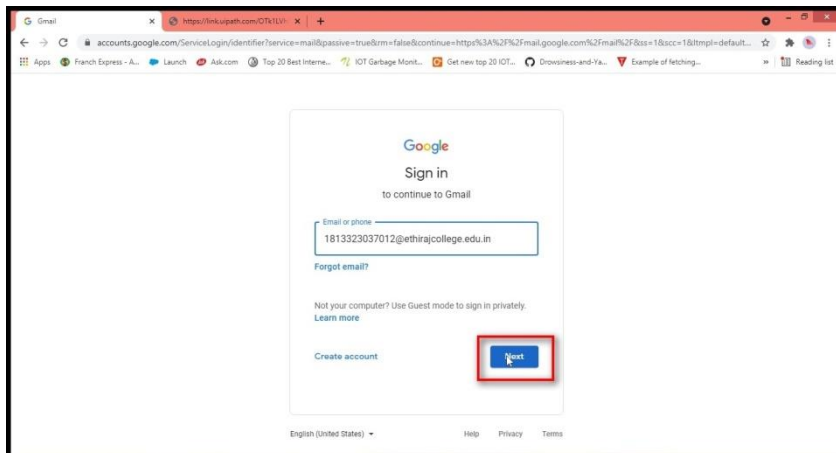


1.2 Click on next button

Navigate to the next window to enter password click next button

Est. time: 23.9 sec.

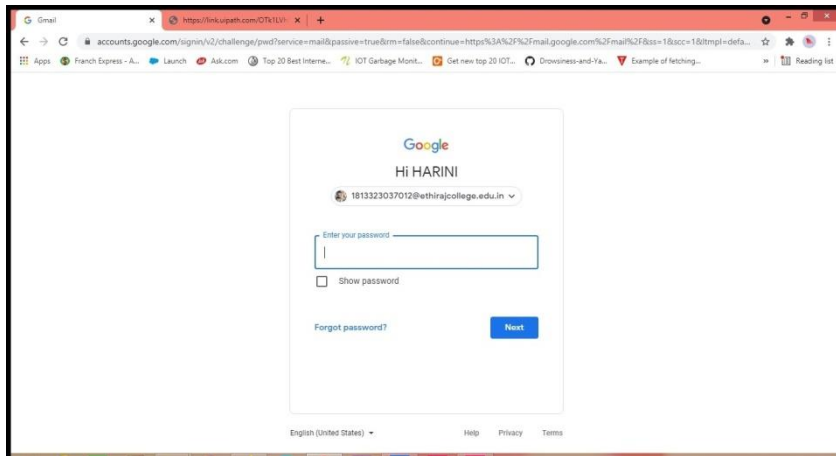
Action: Click



1.3 Entering password

Enter the password in the given textbox

Est. time: 4.1 sec.

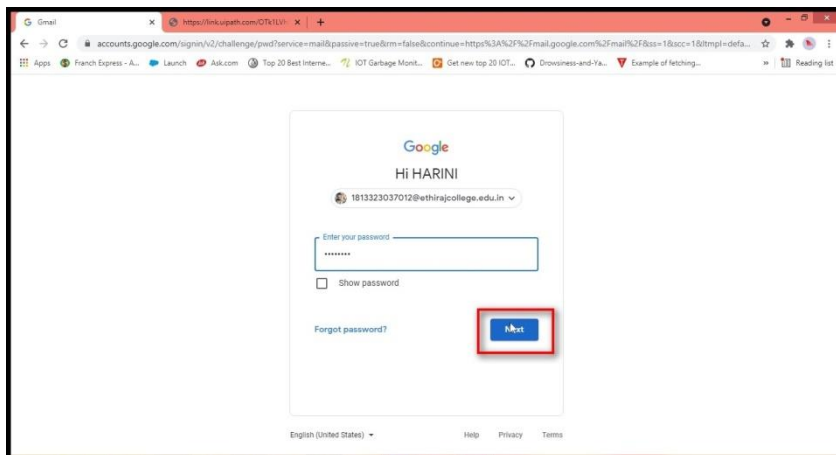


Action: Keyboard Input

1.4 Click on next button

Open the inbox to download the invoice mail

Est. time: 6.7 sec.



Action: Click

2. Open the invoice mail to download the attachment

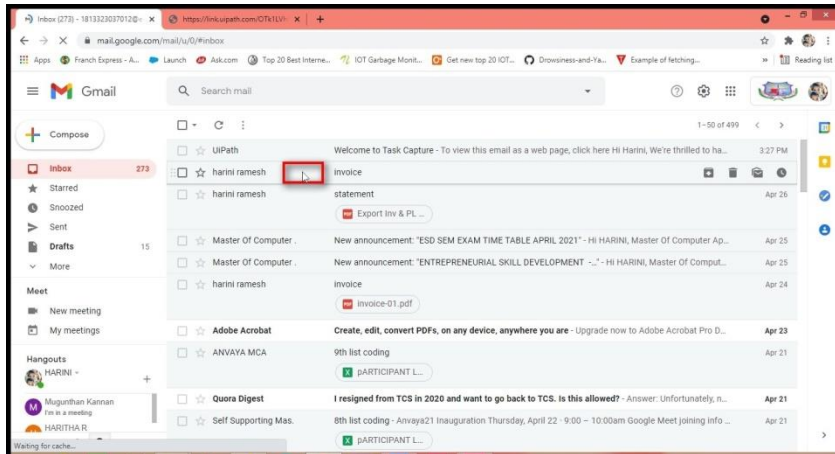
Est. time: 53.0 sec.

2.1 Click on invoice mail

Open the mail to download the attachment

Est. time: 14.7 sec.

Action: Click

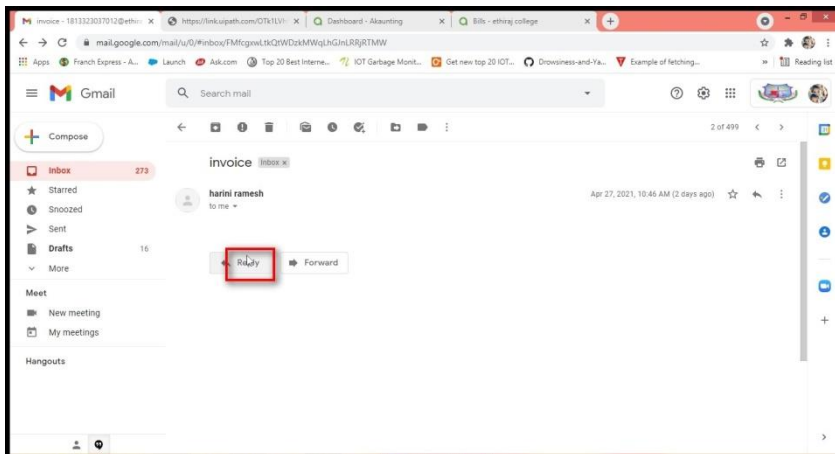


2.2 Opening invoice mail

There is no attachment found to download so sent the reply mail no attachment found

Est. time: 1.9 sec.

Action: Click

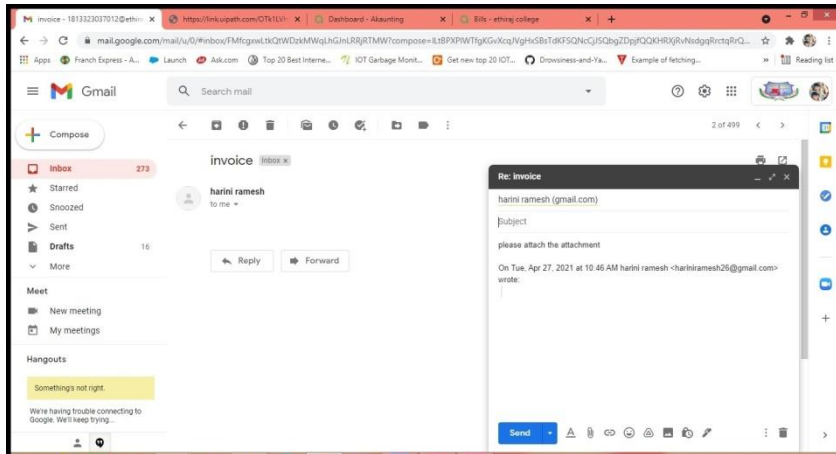


2.3 Type the subject

Enter the subject that there is no attachment

Est. time: 1.1 sec.

Action: Keyboard Input

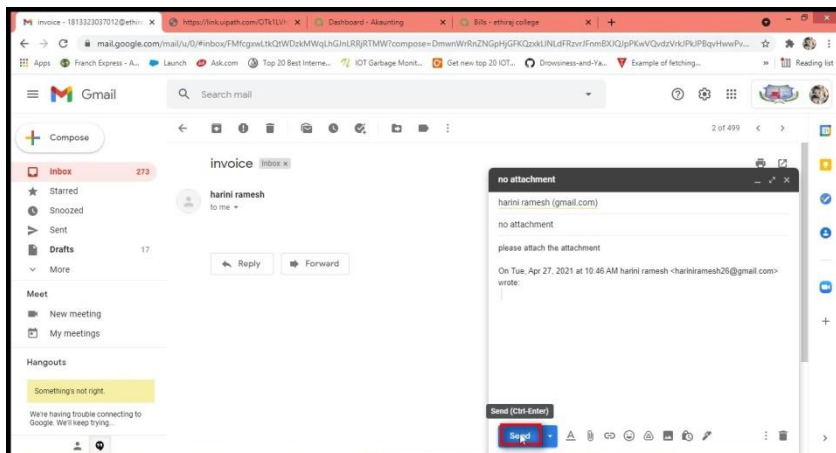


2.4 Sending reply mail

Send the reply mail to attach the file

Est. time: 11.6 sec.

Action: Click



3. Open the another invoice mail to download the attachment

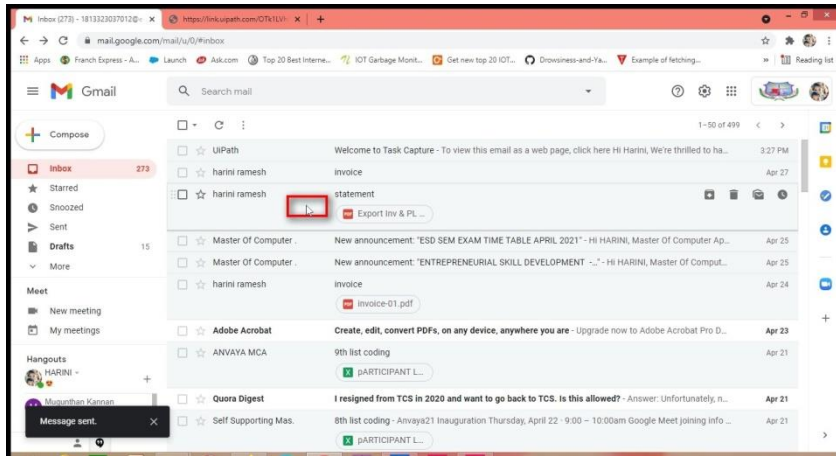
Est. time: 11.2 sec.

3.1 Opening statement mail

Open another invoice mail

Est. time: 4.3 sec.

Action: Click

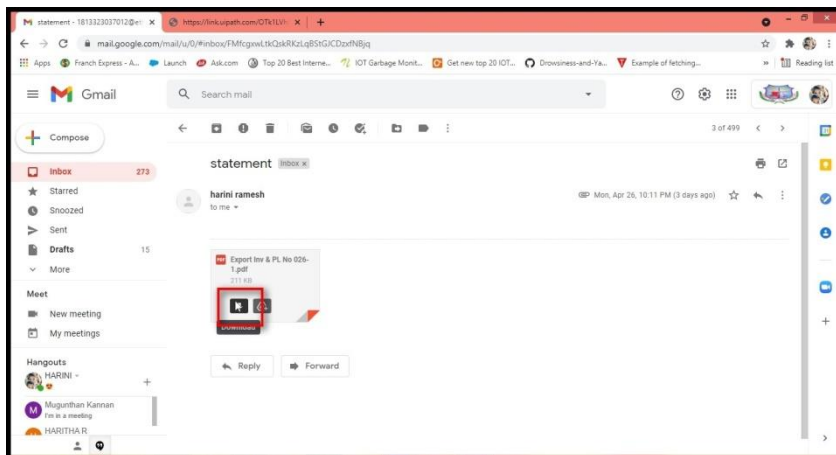


3.2 Download the attachment

Download the attachment of the invoice pdf

Est. time: 6.9 sec.

Action: Click



4. Login - Akaunting - Google Chrome

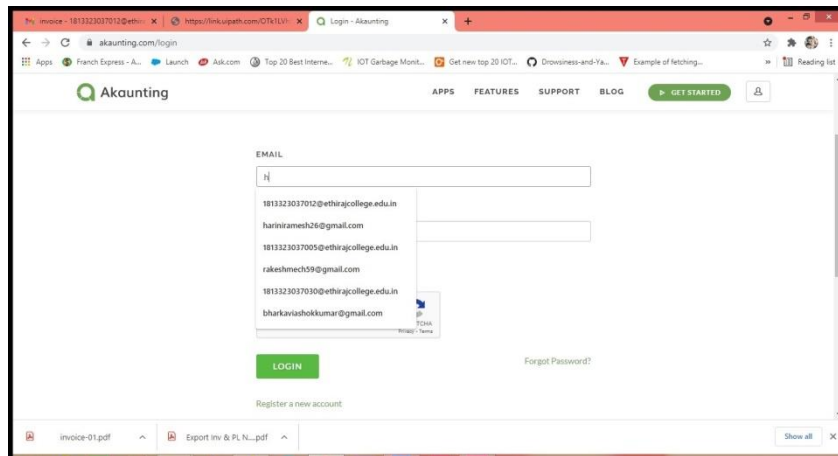
Est. time: 2 min. 54 sec.

4.1 Open the akaunting url

Enter the email address

Est. time: 1.2 sec.

Action: Keyboard Input

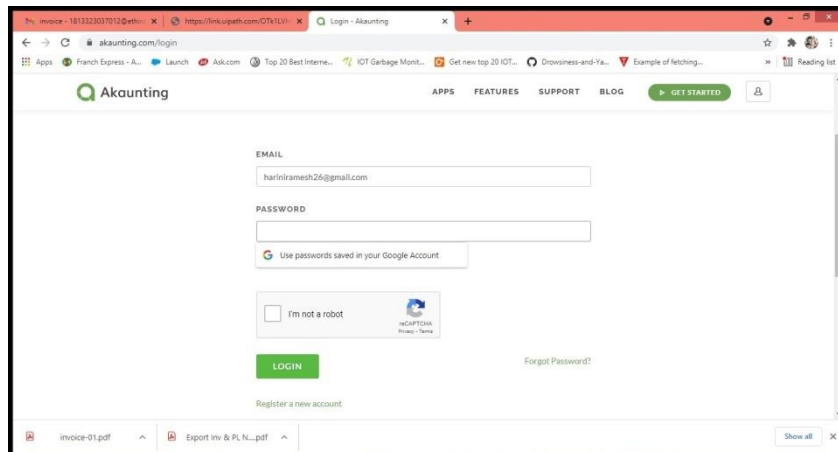


4.2 Enter the password

Enter the password to download the bill

Est. time: 0.9 sec.

Action: Keyboard Input

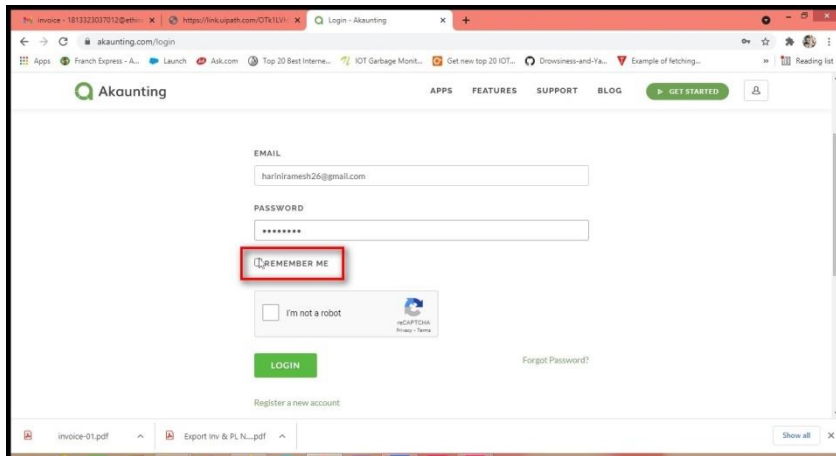


4.3 Select remember checkbox

Select the checkbox to login

Est. time: 4.9 sec.

Action: Click

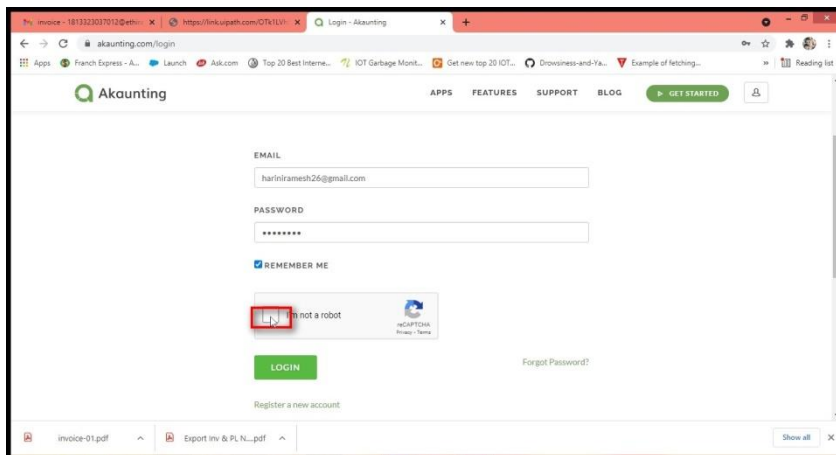


4.4 Select I am not a robot

Select captcha to navigate to the next window

Est. time: 1.4 sec.

Action: Click

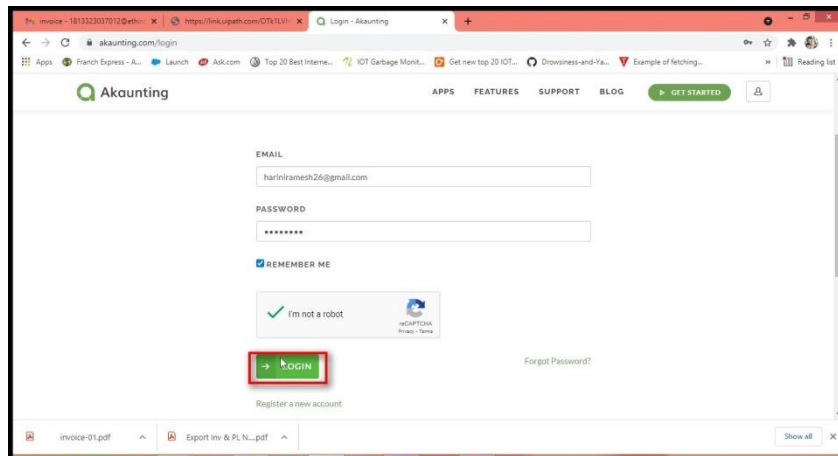


4.5 Click login

Click login button to navigate to the dash board

Est. time: 3.1 sec.

Action: Click

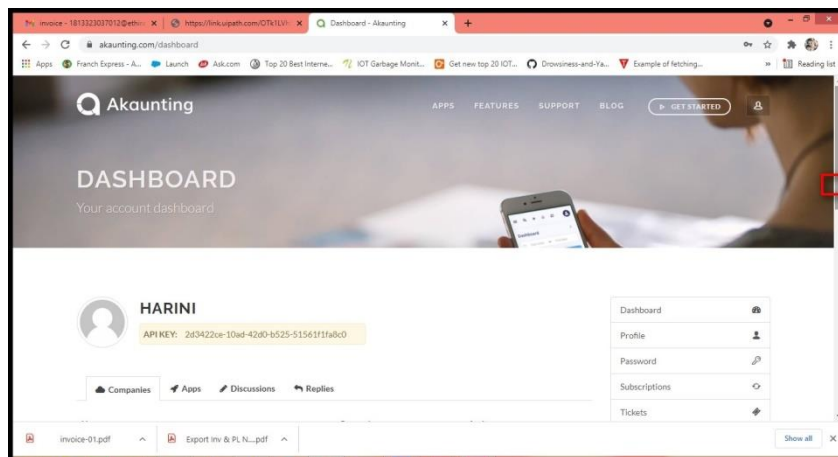


4.6 Akaunting dashboard

Select the company to download the bill

Est. time: 2.5 sec.

Action: Click

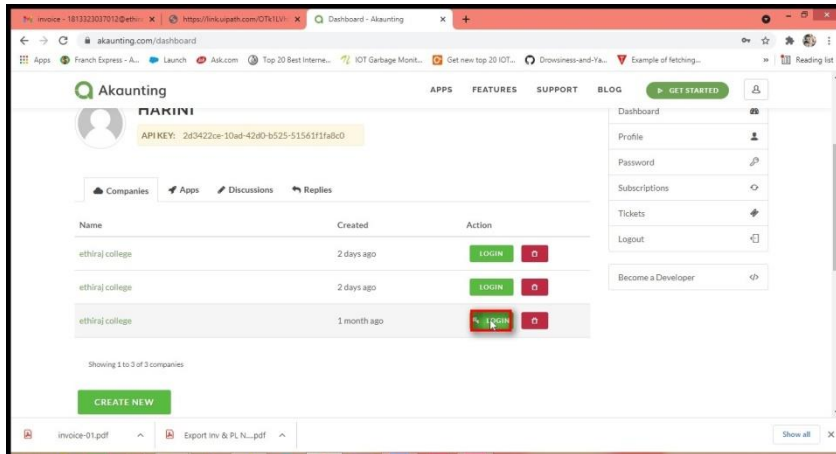


4.7 Click on ethiraj college login

Select the ethiraj college login button

Est. time: 3.9 sec.

Action: Click

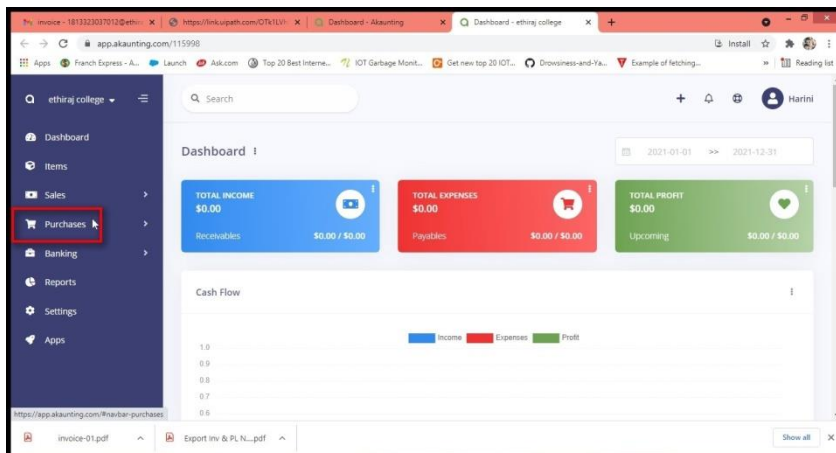


4.8 Click on purchase

Select the purchase to download the bills

Est. time: 9.1 sec.

Action: Click

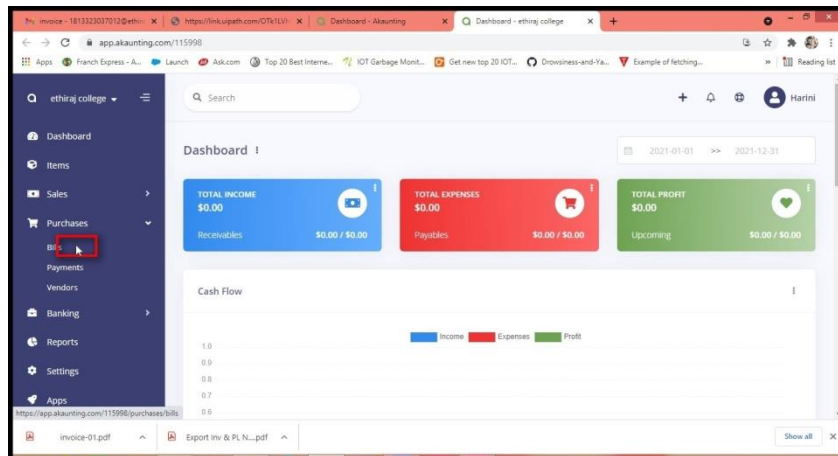


4.9 Click on bills

Click on bills to download

Est. time: 1.8 sec.

Action: Click

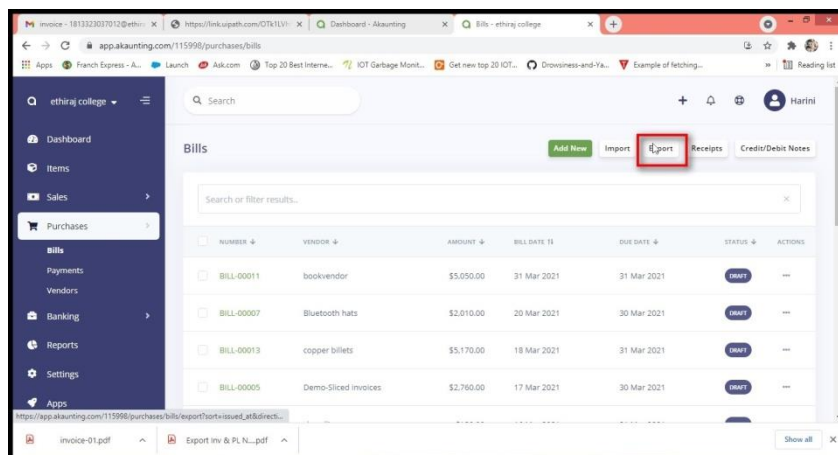


4.10 Click on export

download the excel files

Est. time: 10.4 sec.

Action: Click

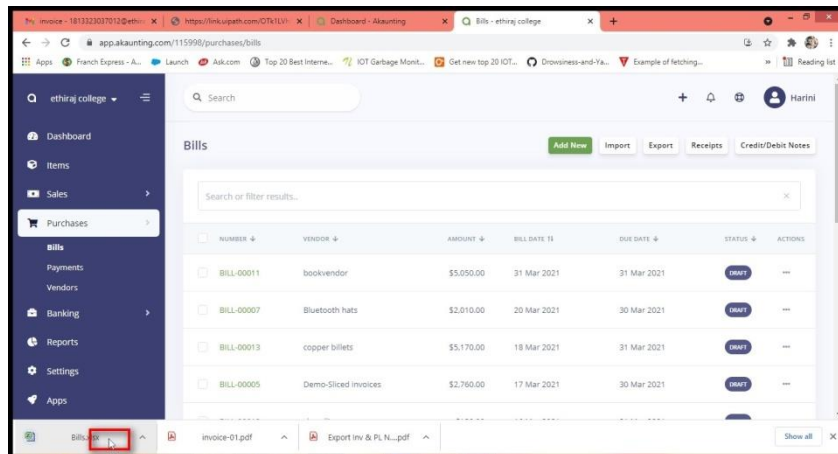


4.11 Open the downloaded excel

Open the downloaded bills

Est. time: 10.5 sec.

Action: Click

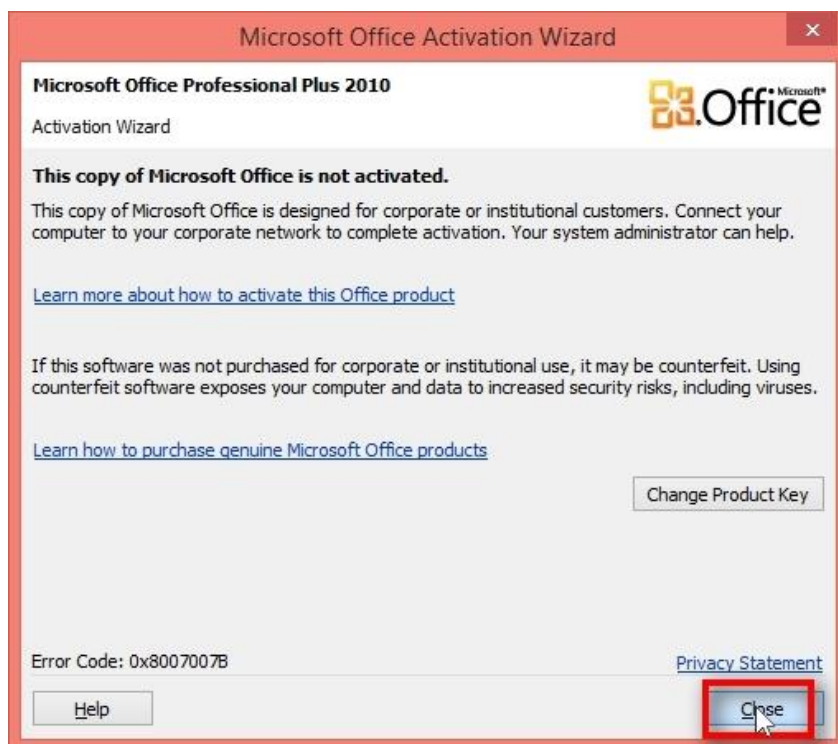


4.12 Click close button in excel

Opening excel and close the dialog box

Est. time: 45.1 sec.

Action: Click

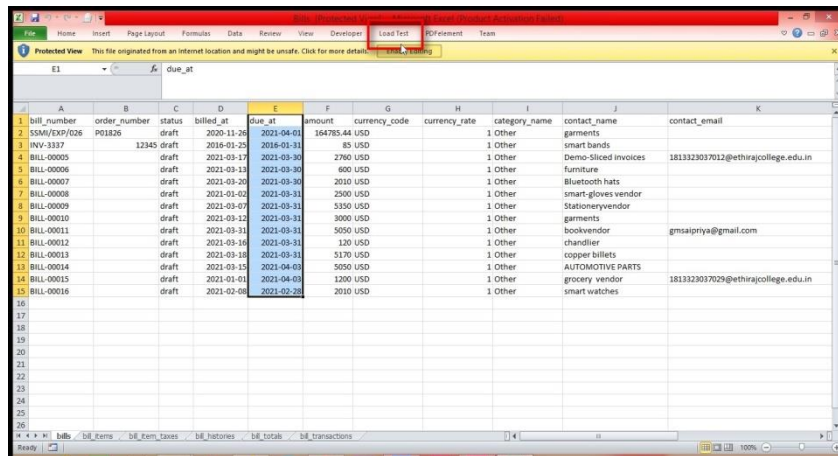


4.13 Click enable editing button

Save the excel click enable editing

Est. time: 2.3 sec.

Action: Click

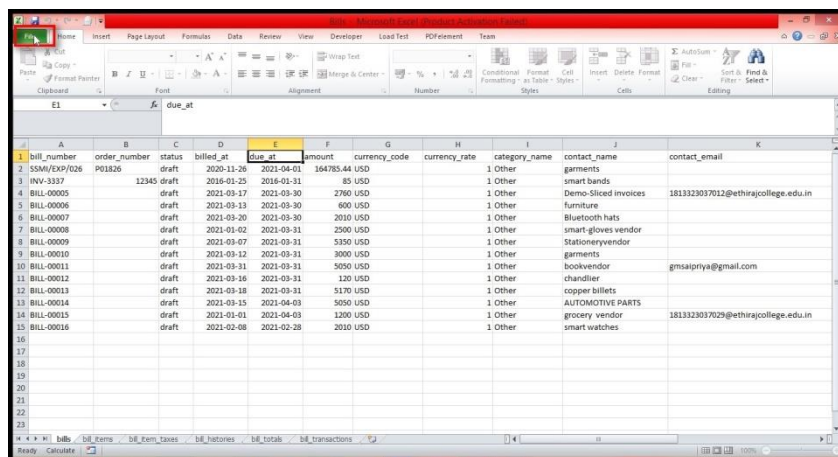


4.14 Click file

Click file and save to the new location

Est. time: 12.5 sec.

Action: Click

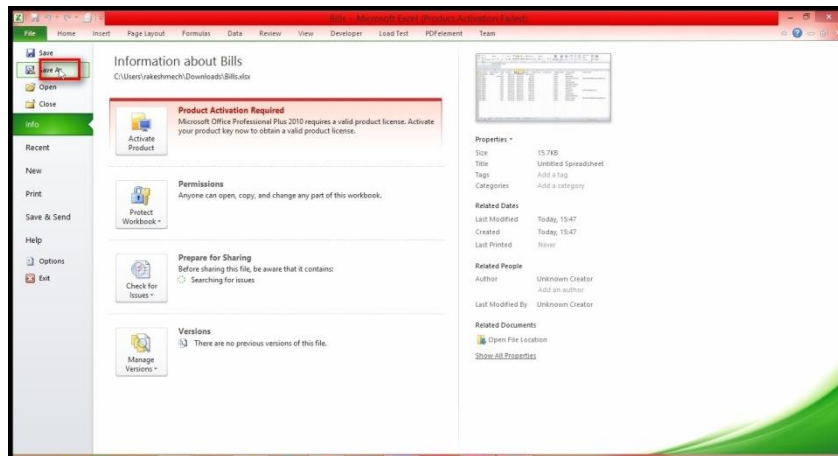


4.15 Click save as

Click save as and save the file to the location

Est. time: 7.10 sec.

Action: Click

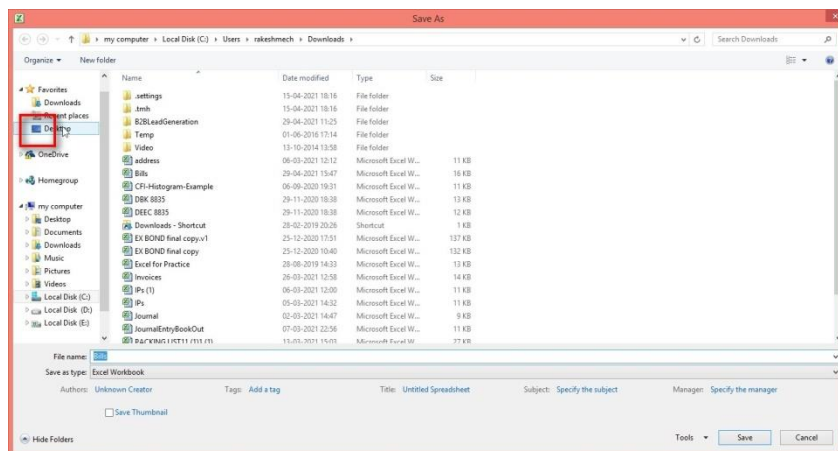


4.16 Save the file to the location

Select desktop folder

Est. time: 16.8 sec.

Action: Click

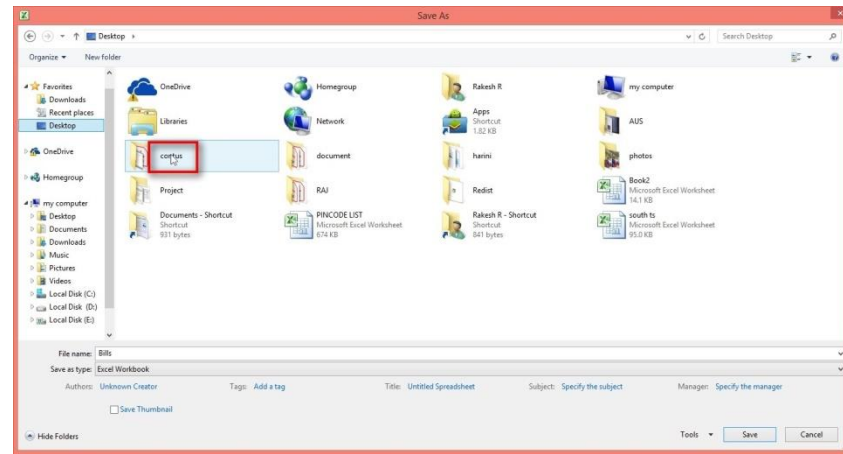


4.17 Contus folder

In desktop select contus folder

Est. time: 3.7 sec.

Action: Click

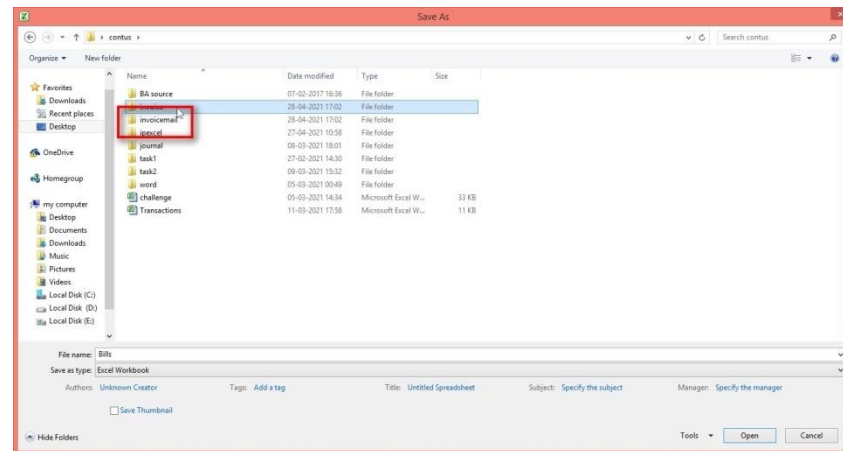


4.18 Invoice folder

From the contus select invoice folder to save the file

Est. time: 3.4 sec.

Action: Double Click

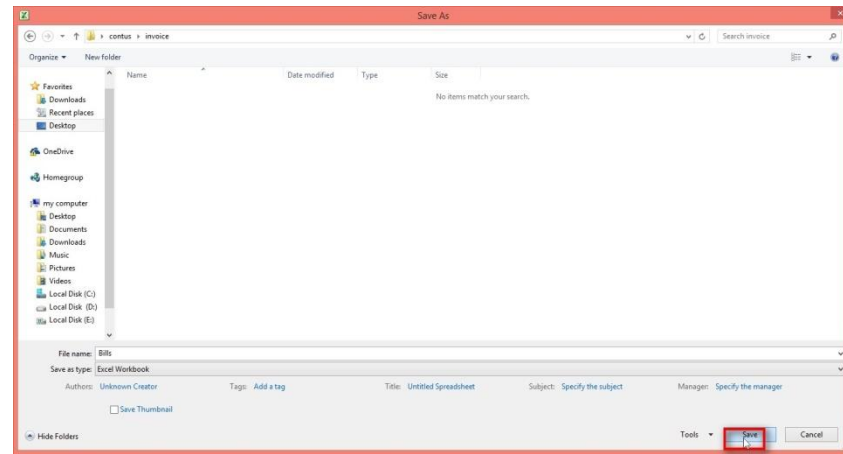


4.19 Save the bill excel

Save the excel bill in the location

Est. time: 4.1 sec.

Action: Click

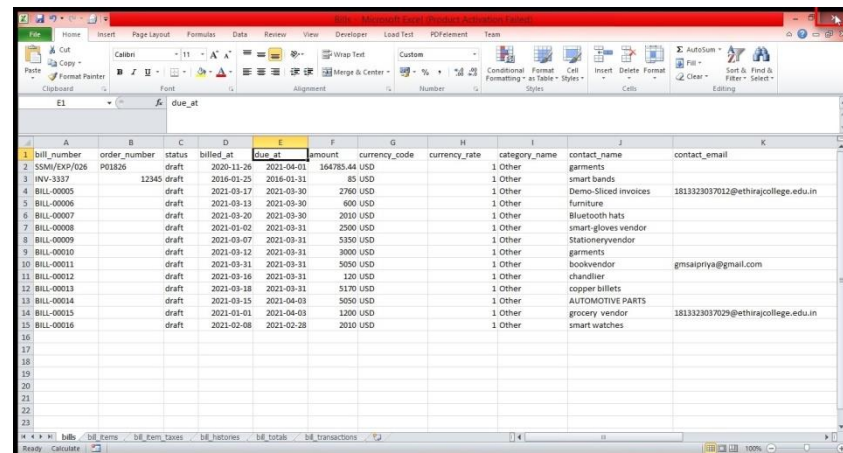


4.20 Close the excel

Closing the excel

Est. time: 7.5 sec.

Action: Click



5. invoicemail

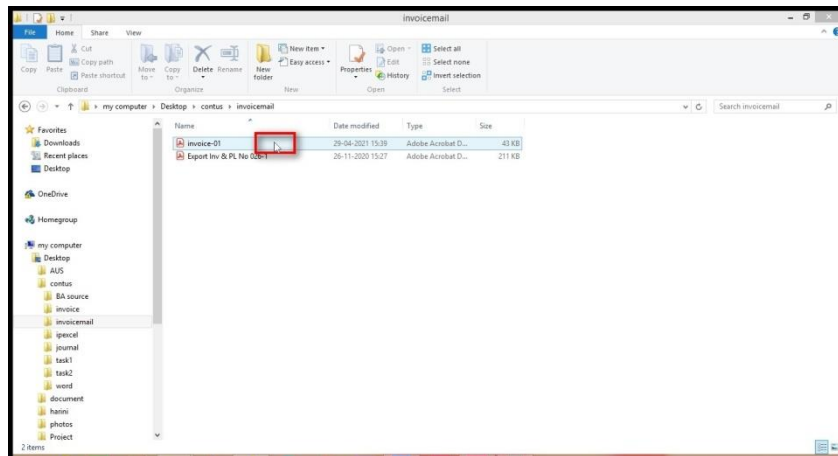
Est. time: 42.5 sec.

5.1 Open the downloaded invoice

Open the downloaded invoice pdf

Est. time: 2.2 sec.

Action: Double Click

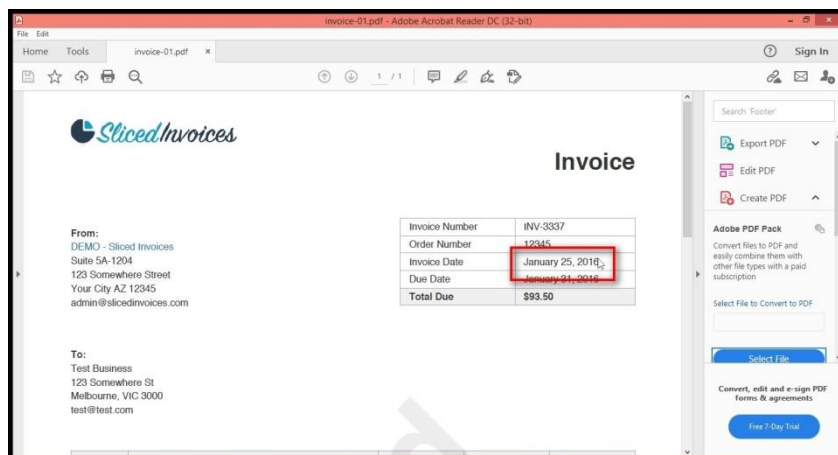


5.2 Extract invoice date

Extract the date from the invoice pdf

Est. time: 4.3 sec.

Action: Click

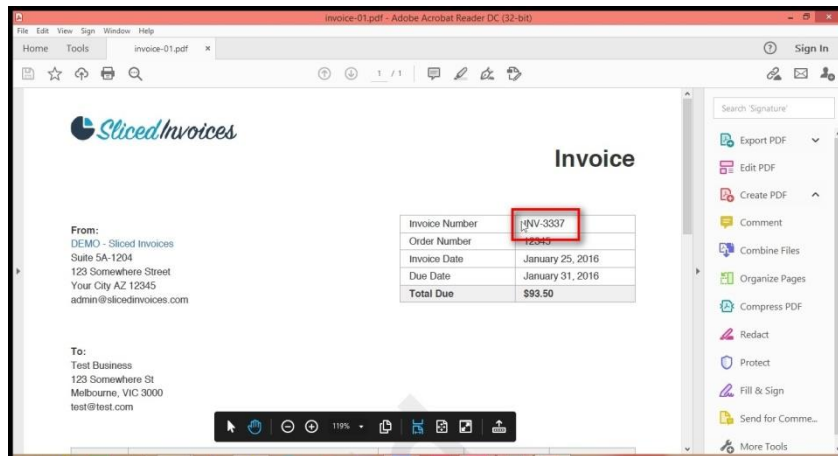


5.3 Extracting invoice number

Extract the invoice number from the pdf

Est. time: 7.3 sec.

Action: Click

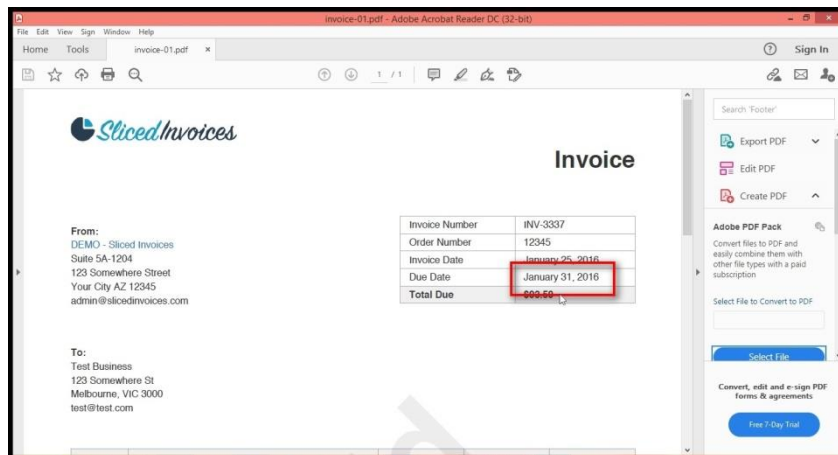


5.4 Extract total

Extract the total from the pdf

Est. time: 2.8 sec.

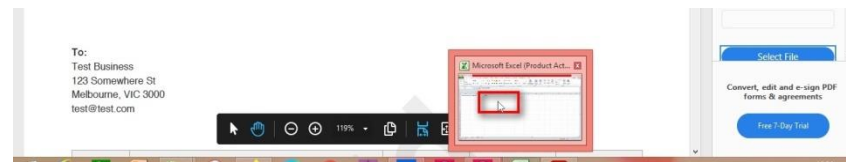
Action: Click



5.5 Opening excel

Open the excel to write the extracted data

Est. time: 7.0 sec.

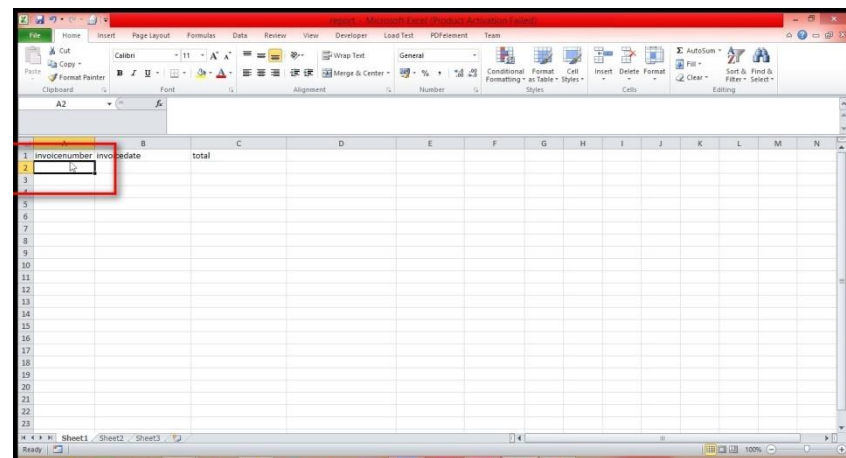


Action: Click

5.6 Clicking on cell

To write the extracted data

Est. time: 2.3 sec.



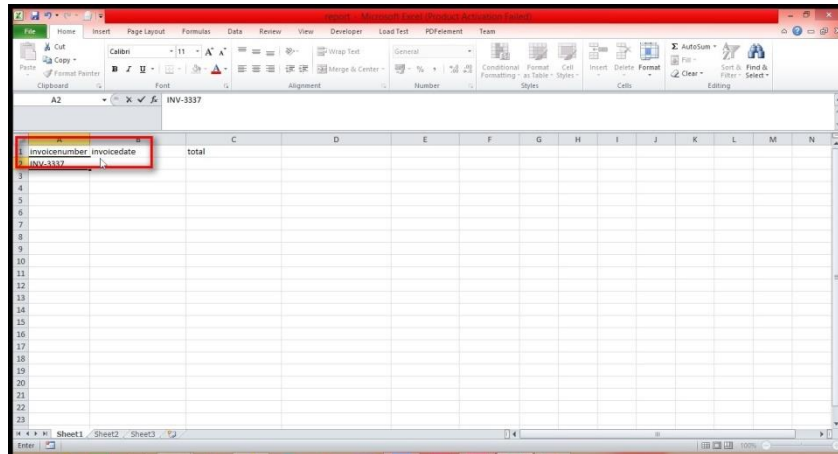
Action: Click

5.7 Writing invoice number that is extracted

Write the extracted invoice number

Est. time: 7.3 sec.

Action: Click

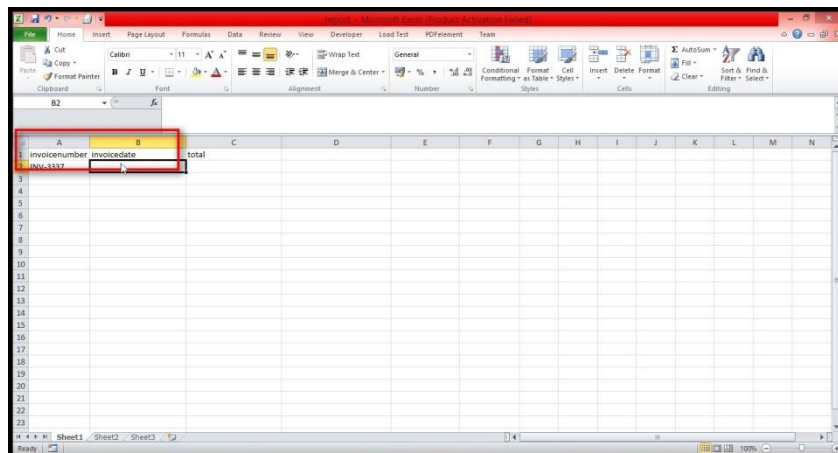


5.8 Click on cell to write invoice date

To write the extracted invoice date

Est. time: 0.9 sec.

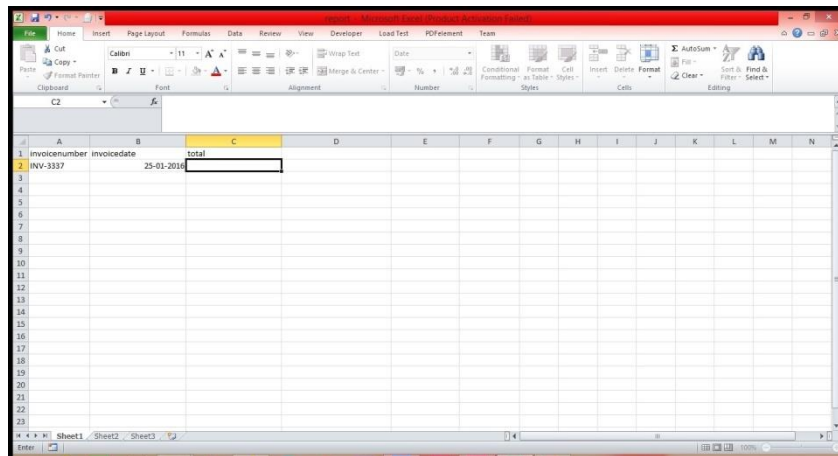
Action: Click



5.9 Click on total cell

To write the extracted total click on cell

Est. time: 1.6 sec.

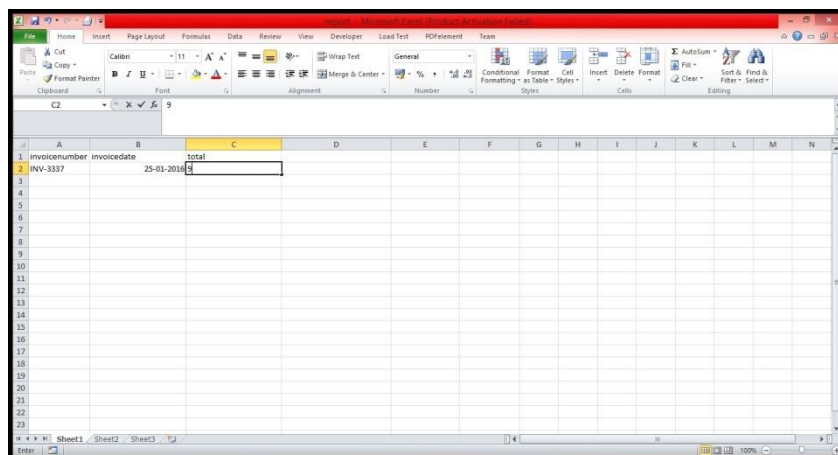


Action: Special Key

5.10 Enter the total

Enter the extracted total

Est. time: 6.8 sec.



Action: Keyboard Input

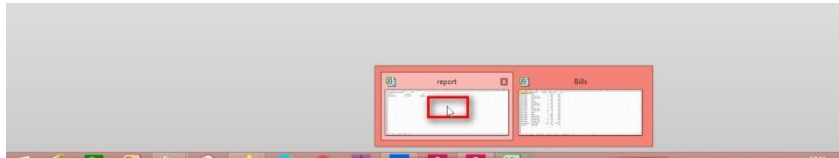
6. Comparing the invoice excel and bill excel

Est. time: 30.1 sec.

6.1 Comparing excel

Select the excel to compare

Est. time: 6.3 sec.

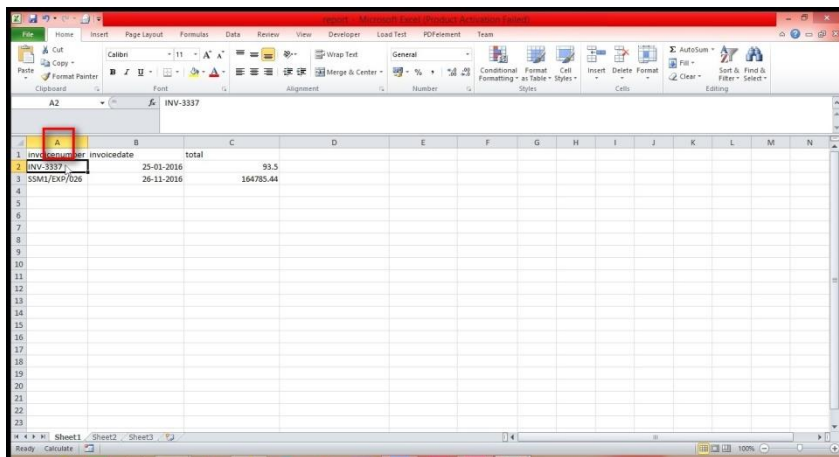


Action: Click

6.2 Reading invoice number

Check the invoice number is matched

Est. time: 8.7 sec.

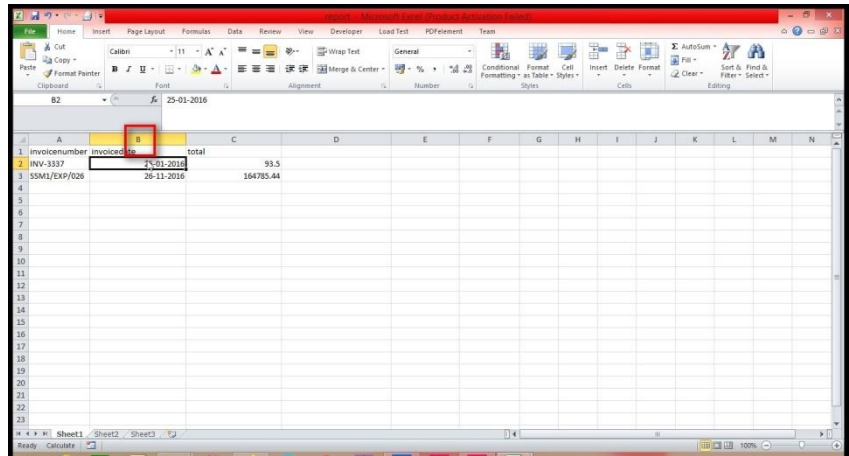


	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	INV-3337	InvoiceDate	total	93.5										
2	SSM/EXP/028	25-01-2016	104795.44											
3		26-11-2016	104795.44											
4														
5														
6														
7														
8														
9														
10														
11														
12														
13														
14														
15														
16														
17														
18														
19														
20														
21														
22														
23														

Action: Click

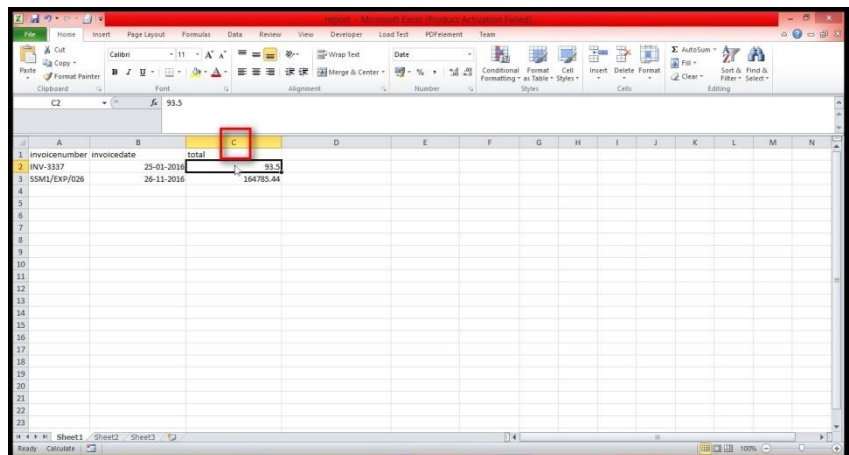
Check the invoice date is matched

Est. time: 1.6 sec.



Check the total is matched

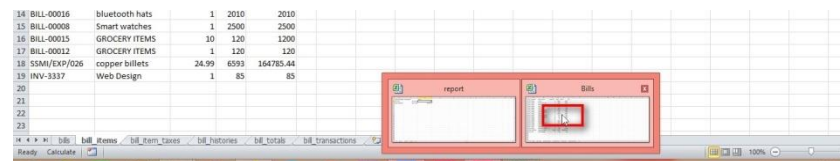
Est. time: 1.1 sec.



6.5 Comparing with bills

Bills matched with the extracted pdf data

Est. time: 6.2 sec.



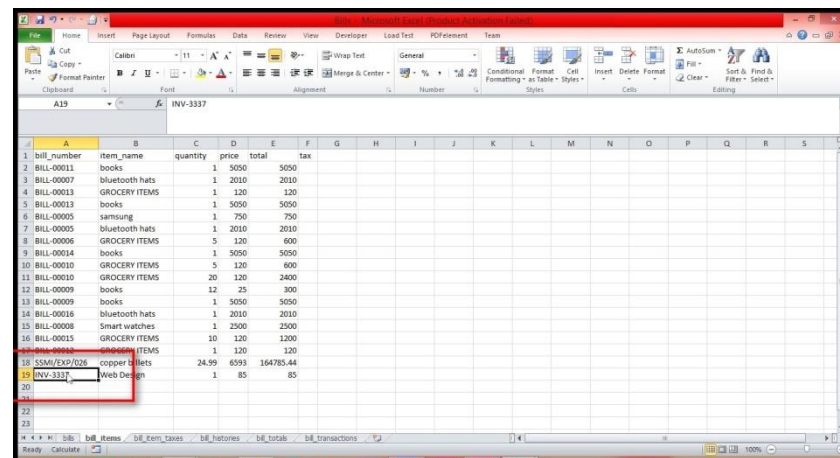
14	BILL-00016	bluetooth hats	1	2010	2010
15	BILL-00008	Smart watches	1	2500	2500
16	BILL-00015	GROCERY ITEMS	10	120	1200
17	BILL-00012	GROCERY ITEMS	1	120	120
18	SSM/EXP/026	copper billets	24.99	6593	164785.44
19	INV-3337	Web Design	1	85	85

Action: Click

6.6 Checking invoice number

Compare the invoice number

Est. time: 3.8 sec.



	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
1	bill_number	item_name	quantity	price	total	tax													
2	BILL-00011	books	1	5050	5050														
3	BILL-00007	bluetooth hats	1	2010	2010														
4	BILL-00013	GROCERY ITEMS	1	120	120														
5	BILL-00013	books	1	5050	5050														
6	BILL-00005	samsung	1	750	750														
7	BILL-00005	bluetooth hats	1	2010	2010														
8	BILL-00006	GROCERY ITEMS	5	120	600														
9	BILL-00014	books	1	5050	5050														
10	BILL-00010	GROCERY ITEMS	5	120	600														
11	BILL-00010	GROCERY ITEMS	20	120	2400														
12	BILL-00009	books	12	25	300														
13	BILL-00009	books	1	5050	5050														
14	BILL-00016	bluetooth hats	1	2010	2010														
15	BILL-00008	Smart watches	1	2500	2500														
16	BILL-00015	GROCERY ITEMS	10	120	1200														
17	BILL-00012	GROCERY ITEMS	1	120	120														
18	SSM/EXP/026	copper billets	24.99	6593	164785.44														
19	INV-3337	Web Design	1	85	85														

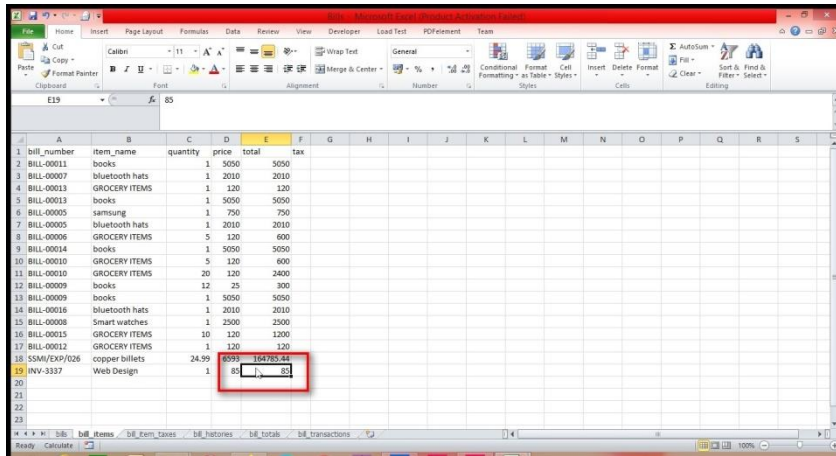
Action: Click

6.7 Checking total

Compare the total

Est. time: 2.3 sec.

Action: Click



	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
1	bill_number	item_name	quantity	price	total	tax													
2	BILL-00011	books	1	5050	5050														
3	BILL-00017	bluetooth hats	1	2010	2010														
4	BILL-00013	GROCERY ITEMS	1	120	120														
5	BILL-00013	books	1	5050	5050														
6	BILL-00005	samsung	1	750	750														
7	BILL-00005	bluetooth hats	1	2010	2010														
8	BILL-00006	GROCERY ITEMS	5	120	600														
9	BILL-00014	books	1	5050	5050														
10	BILL-00010	GROCERY ITEMS	5	120	600														
11	BILL-00010	GROCERY ITEMS	20	120	2400														
12	BILL-00009	books	12	25	300														
13	BILL-00009	books	1	5050	5050														
14	BILL-00016	bluetooth hats	1	2010	2010														
15	BILL-00008	Smart watches	1	2500	2500														
16	BILL-00015	GROCERY ITEMS	10	120	1200														
17	BILL-00012	GROCERY ITEMS	1	120	120														
18	SSM/EXP/026	copper billets	24.99	6593	164785.44														
19	INV-3337	Web Design	1	85	85														

7. Sending the reply mail

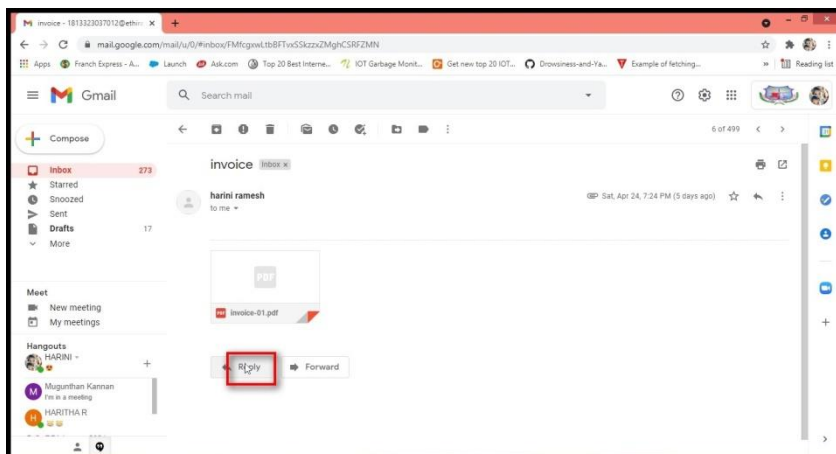
Est. time: 56.1 sec.

7.1 Opening the invoice mail to send reply

Open the mail to send a reply

Est. time: 2.6 sec.

Action: Click

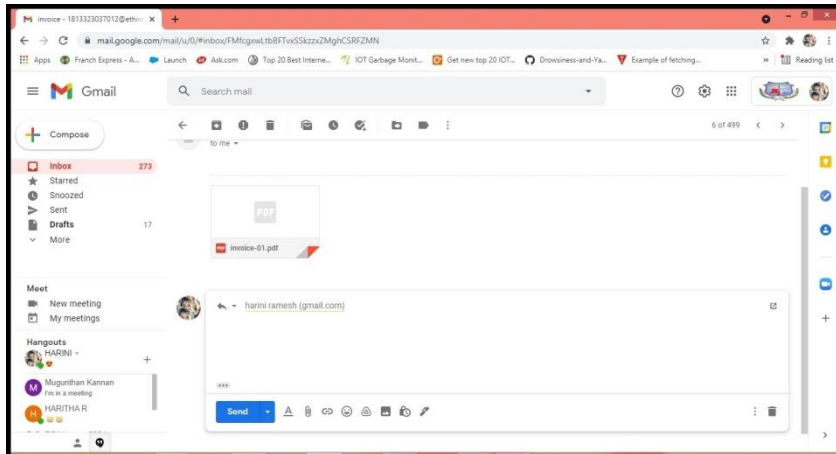


7.2 Sending reply mail

Send a reply that total mismatched

Est. time: 5.6 sec.

Action: Keyboard Input

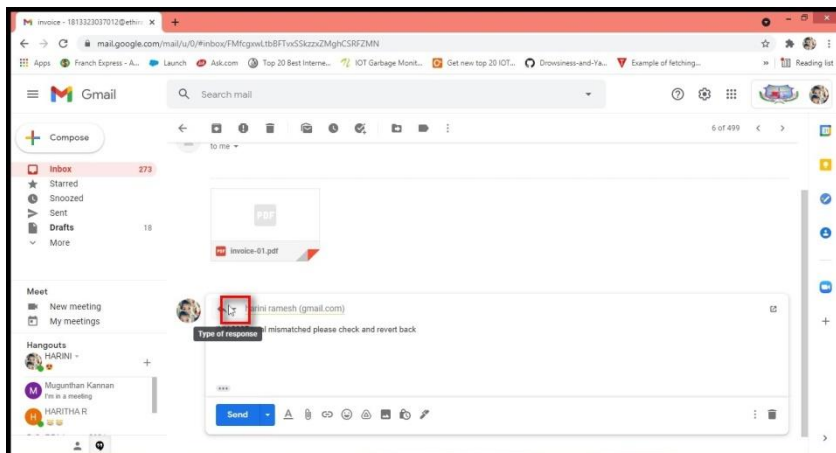


7.3 Type the text

Type total mismatch in the subject

Est. time: 33.4 sec.

Action: Click

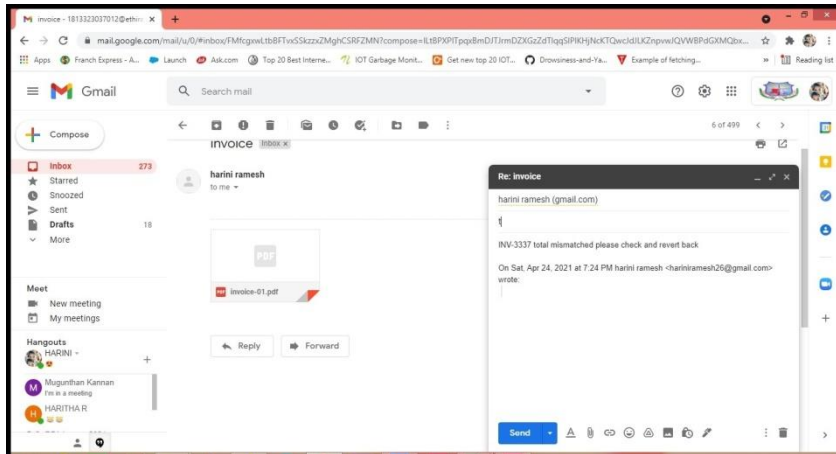


7.4 Enter the subject

total mismatch

Est. time: 1.8 sec.

Action: Keyboard Input

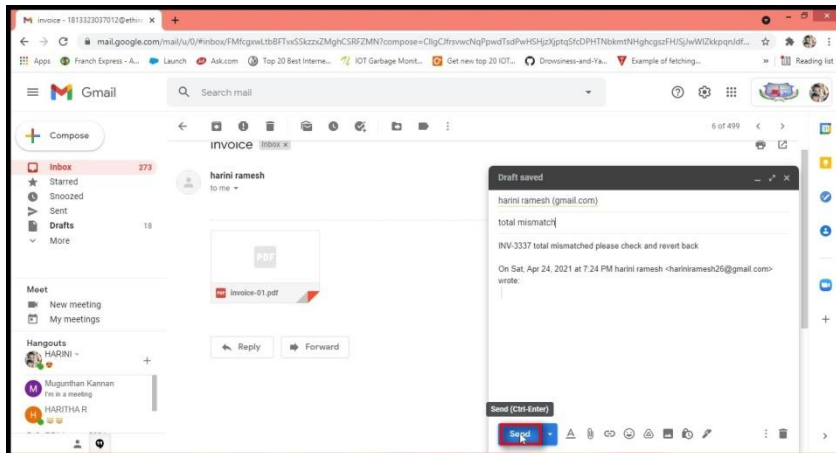


7.5 Enter the body and send the mail

Total mismatched in this particular invoice number

Est. time: 7.2 sec.

Action: Click



8. Open the mail

Est. time: 43.9 sec.

8.1 Opening mail

Open the mail to send reply for another invoice

Est. time: 5.8 sec.

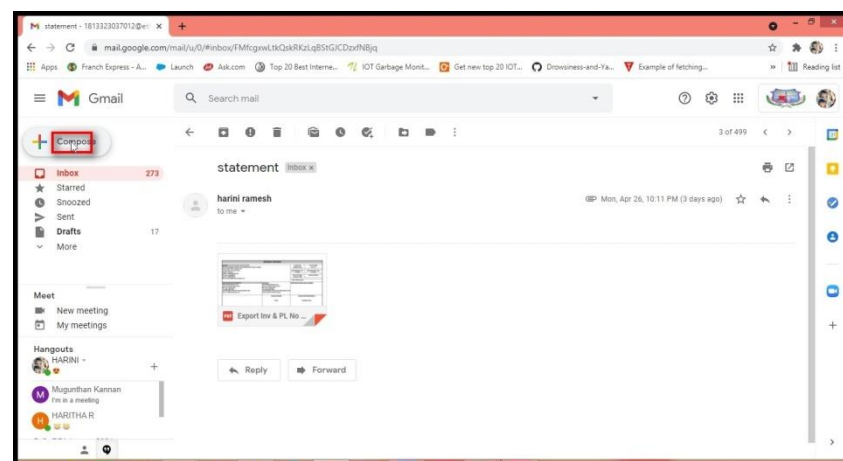


Action: Click

8.2 Open the statement mail

Open the statement in which pdf is downloaded

Est. time: 3.9 sec.

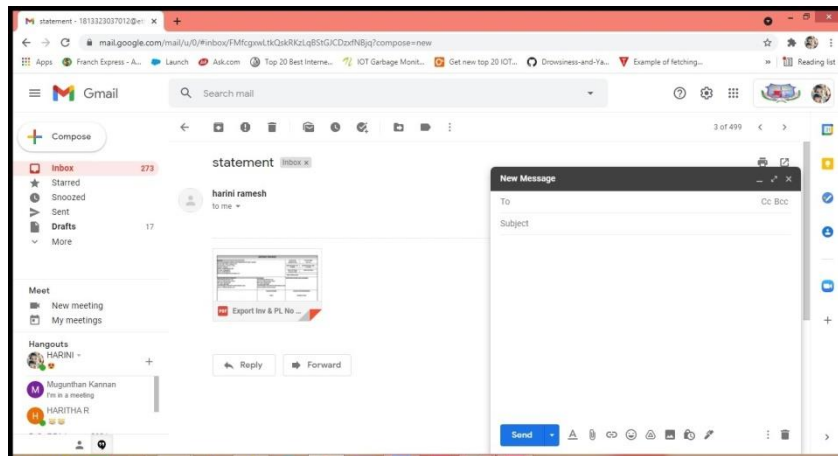


Action: Click

8.3 Accounts team

type the mail address

Est. time: 3.2 sec.

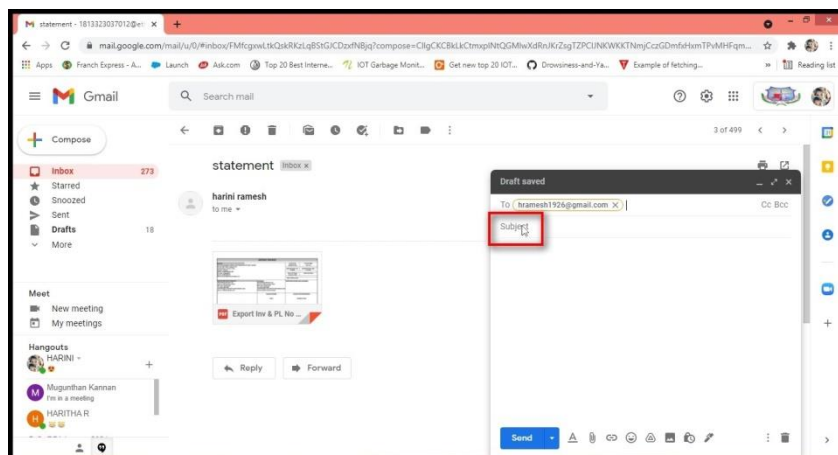


Action: Keyboard Input

8.4 Type the subject

Enter the subject total matched and it is ready for payment process

Est. time: 2.4 sec.

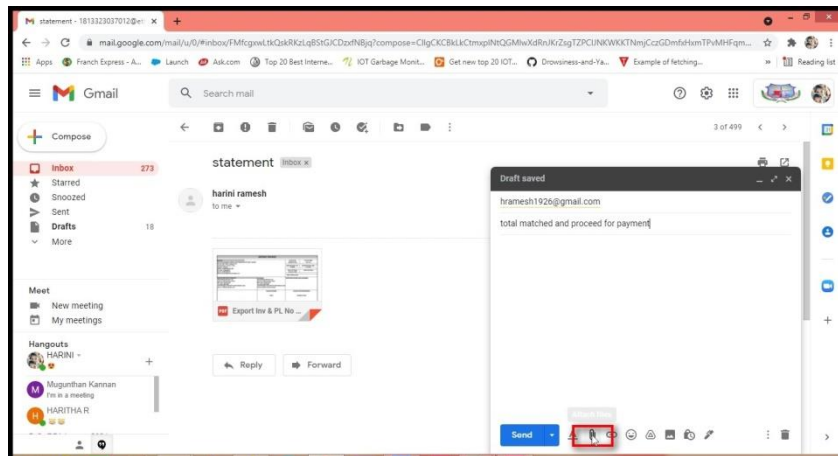


Action: Click

8.5 Add the attachment of downloaded mail

Attach the attachment

Est. time: 15.2 sec.

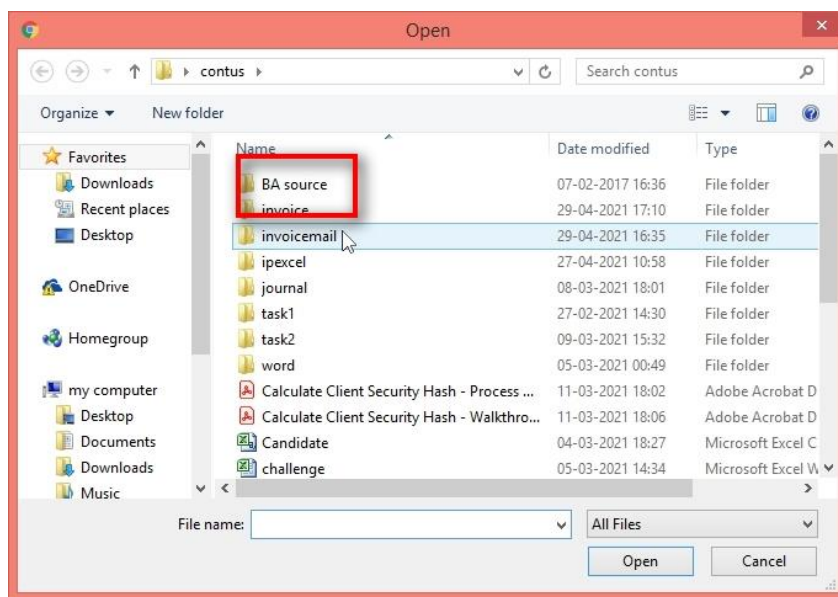


Action: Click

8.6 Select a folder to attach the file

select invoice folder

Est. time: 4.6 sec.



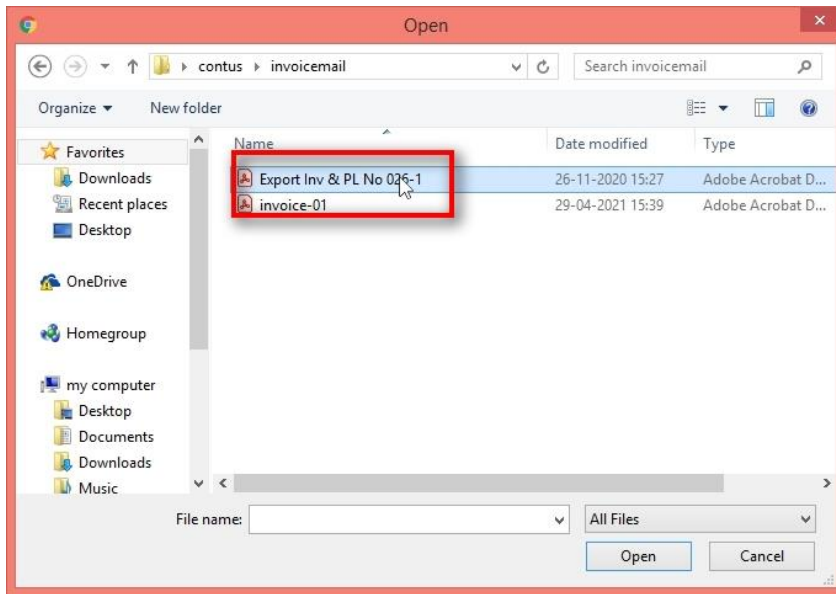
Action: Double Click

8.7 Select a file to upload

Select the total matched with the bill pdf file

Est. time: 1.5 sec.

Action: Click

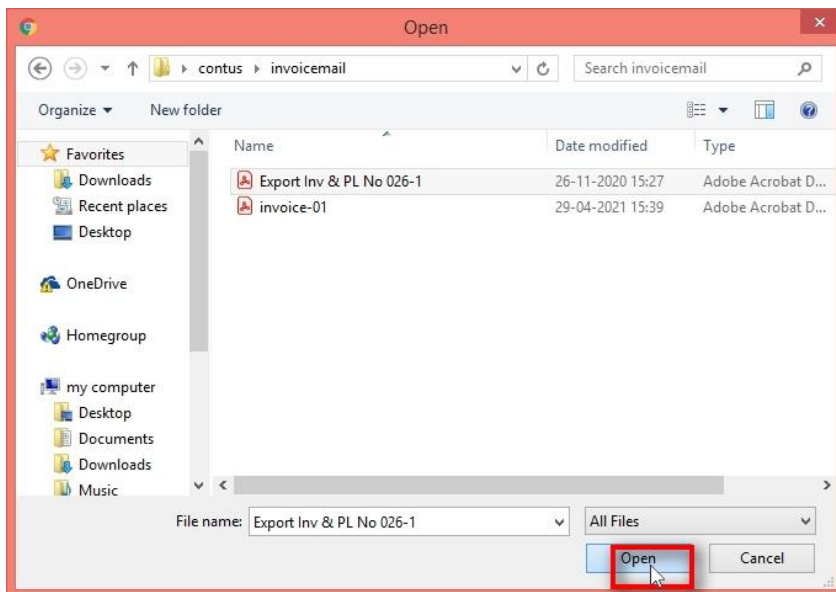


8.8 Select the file

click open

Est. time: 1.6 sec.

Action: Click

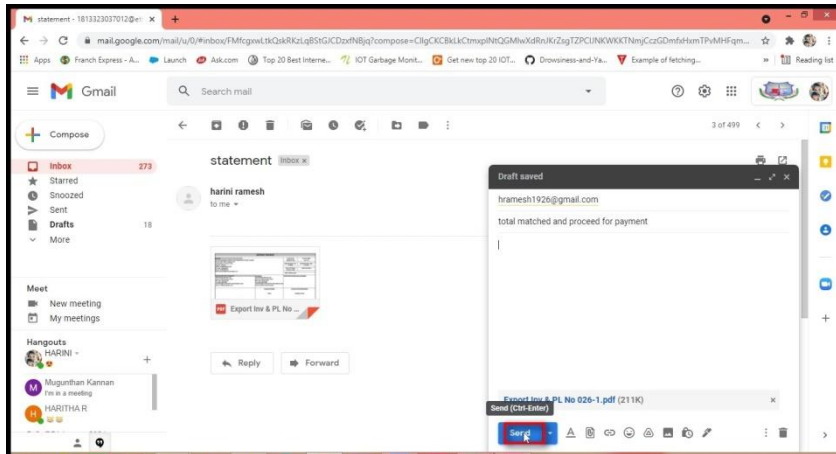


8.9 Send the mail after adding the attachment

The attachment is added and sent the mail to the accounts team

Est. time: 4.8 sec.




Action: Click



III. To-Be Process Description

This chapter highlights the expected design of the business process after automation.

III.1 To-Be Detailed Process Map

Legend	Description
	Action number in the process. Referred to in details or Exceptions and Errors table
	This process action is proposed for automation
	This process action remains manual (to be performed by a human agent)

III.2 Parallel Initiatives/ Overlap (if applicable)

This chapter covers the proposed Business, Process & System changes to be made in the near future and their impact.

S.No	Initiative Name	Process Action(s) where it is identified	Impact on current automation request? How?	Expected Completion Date	Contact person for more details
	n/a				

III.3 In Scope of RPA

The activities **In scope of RPA**, are listed here:

1. Download the attachment no attachment found send the reply mail-action(2.1)
2. Download the attachment-action(3.2)
3. Navigate to the bills in akaunting software-action(4.10)
4. Extract the invoice details and write in excel-action(5.1)
5. Compare the invoice excel and bill excel-action(6.1)
6. Total mismatched send a reply mail to vendor-action(7.1)
- 7.Total matched send mail to accounts team for payment-action(8.1)

III.4 Out of Scope of RPA

The activities **Out of scope of RPA**, are listed here:

Sub-process (if applicable)	Activity (action)	Reasons for Out of scope*	Impact on the To-Be	Possible measures to be taken into consideration for future automation
4	4.1-4.2	Captcha in Akaunting	After processing 4.1-4.3, it is asking to enter the captcha in order to go to action 4.10	By disabling or removing captcha

III.5 Business Exceptions Handling

The Business Process Owner and Business Analysts are expected to document below all the business exceptions identified in the automation process. These can be classified as:

Known	Unknown
Previously encountered. A scenario is defined with clear actions and workarounds for each case.	New situation never encountered before. It can be caused by external factors. Cannot be predicted with precision, however if it occurs, it must be communicated to an authorized person for evaluation.

Known Exceptions

The table below reflects all the business process exceptions encountered during the process evaluation and documentation. These are **known exceptions** that occurred before. For each of these exceptions, define a corresponding expected action that the robot should complete if it encounters the exception.

BE #	Exception name	Action	Parameters	Action to be taken
1.	Attachment not found	-	No file found	Send the mail there is no attachment
2.	Invalid login credential	-	If a message for username and password	send the mail invalid credential
3.	Api key expired	-	Api expired	send the mail to process owner to generate api key
4.	Akaunting login	-	Bills not found	open the application before the process start due to captcha
5.	Smtplib Exception	-	Unable to send mail	Retry for 2 times and check the recipients email address

Unknown Exceptions

For all other unanticipated or unknown business (process) exceptions, the robot should:

III.6 Application Error and Exception Handling

A comprehensive list of all errors, warnings or notifications should be consolidated here with the description and action to be taken, for each, by the robot.

Errors identified in the automation process can be classified as:

Area	Known	Unknown
Technology/Applications	Experienced previously, an action plan or a workaround available.	Never encountered before, or may happen independently of the applications used in the process.

Known Errors or Exceptions

The table below reflects all the errors identified in the process evaluation and documentation.

For each of these errors or exceptions, define a corresponding expected action that the robot should complete if it is encountered.

#	Error name	Action	Parameters	Action to be taken
1.	Application unresponsive / page not loading	-	Blank page or no response	Retry 2 times. Close applications and run the sequence again
2.	Couldn't fetch credentials from asset	-	Invalid Credentials	Send an email alert to process owner or check the credentials given in the asset

Unknown Errors and Exceptions

For all the other unanticipated or unknown application exceptions/errors, the robot should:

III.7 Reporting

#	Report type	Update frequency	Details	Monitoring Tool to visualise the data
1	Process logs	Daily	Processing Transaction Number	Orchestrator
3	Transaction logs	Daily	Process finished due to no more transaction data	Orchestrator
5	Error logs	Daily	Processed Transaction failed with application exception	Orchestrator

IV. Additional sources of process documentation

If there is additional material created to support the process automation please mention it here, along with the supported documentation provided.

Additional Process Documentation		
Video Recording of the process (Optional)	https://drive.google.com/file/d/1ScmjCz8n12_JWTb0Zo6Rallm2Ge9xr7K/view?usp=sharing	-
Power point presentation (Optional)	https://drive.google.com/file/d/10yNo4_4wx7Nt5_oP5zjubf2AzB_9qBqX/view?usp=sharing	-