MODULE 27: DISTRIBUTION OF SOFTWARE

On Completion of this module you will be able to prepare and "pack" your software on different mediums for distribution (free or commercial).

Subject Outcome 1: Introduction

Subject Outcome 2: Design & Layout

Subject Outcome 3: Mediums

Subject Outcome 4: Auto Run

Subject Outcome 5: Installation Application & IEXPRESS

Subject Outcome 6: Update Application

Subject Outcome 7: Help file

27.1   INTRODUCTION

One of the most important and most crucial tasks your program should be able to perform is to install. There is nothing more frustrating and discrediting than a software package that does not auto install or install correctly and then just don't work. Nobody will ever again invest in one of your programs should your program not work from installation.

27.2   DESIGN & LAYOUT

When you design your program, the layout of your configuration files should be included. The basic structure of all programs should include the following:

- Application (EXE) files and DLL, INC, etc.
- RESOURCE folder – this is image and sound files that must not be distributed with your program to protect the image from manipulation.
- GX folder – this is graphic files (images) to be distributed with your program.
- FX folder – this is sound/music files to be distributed with your program.
- DATALX folder – this is data files required by your program as startup data and configuration.
- DATALM folder – usually this folder is created by your program to store new data created/added by the user (this is not part of the initial distribution as it is created afterwards).

Here is a typical configuration of a standard program:
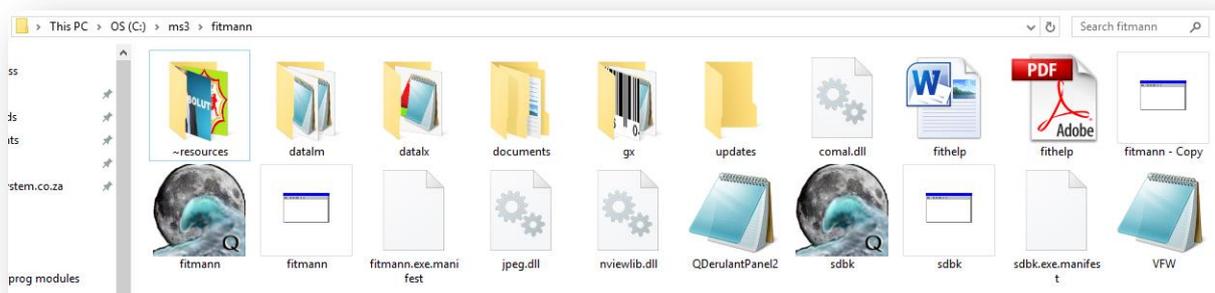
It is crucial that you DO NOT DISTRIBUTE your programs WITH THE RAW SOURCE CODE (.BAS) files.

27.3 MEDIUM

The medium will influence your installation files and installation instructions. Medium represents the physical method of distribution. You may use any of the following mediums (each with advantages and disadvantages):

Sno	Medium	Advantages	Disadvantages
1	Disk (CD or DVD)	Full control of all files. Auto-install capability. Copy protection methods. Large files (incl video files) Online updates & registration.	Expensive (disks and printing) Log Distribution. No technical support.
2	Internet Download	Available to all. Registration capability. Online updates & registration. Copy protection with JAVA Scripting. Must have an Internet Domain. Databases online build into software. Custom E-Mail build into software. Technical support	Minimum (size). ZIP format & ZIP instructions
3	Memory Stick (hand to hand)	Auto-install capability Large files (limited to memory stick)	No Control . No copyright control.

## 27.4 AUTO-INSTALL (CD/DVD/MEMORY STICK medium)

Whenever you use a CD/DVD distribution method, you must add an AUTO install function. **This will auto install your program when the user insert the CD/DVD** (including memory stick) and even have an ICON of your software on MY COMPUTER (representation). To create an auto-install script, you will require NOTEPAD and an icon of your software. The file to be saved is called **AUTORUN.INF**

Open NOTEPAD and enter the following (when done, save as AUTORUN.INF on your application's path):

SNO	CODING	EXPLANATION
1	[autorun] ICON=gx\safe.ico open=install.exe	Explain program **directive**. Identify CD/DVD **icon (gx is the directory)** The **EXE** file to run to start your program or start the installation EXE. If you wanted to just run the program without installation, simply indicate for instance OPEN=ATHMAN.EXE

When saving ensure the following (otherwise it will be saved as a TEXT file):
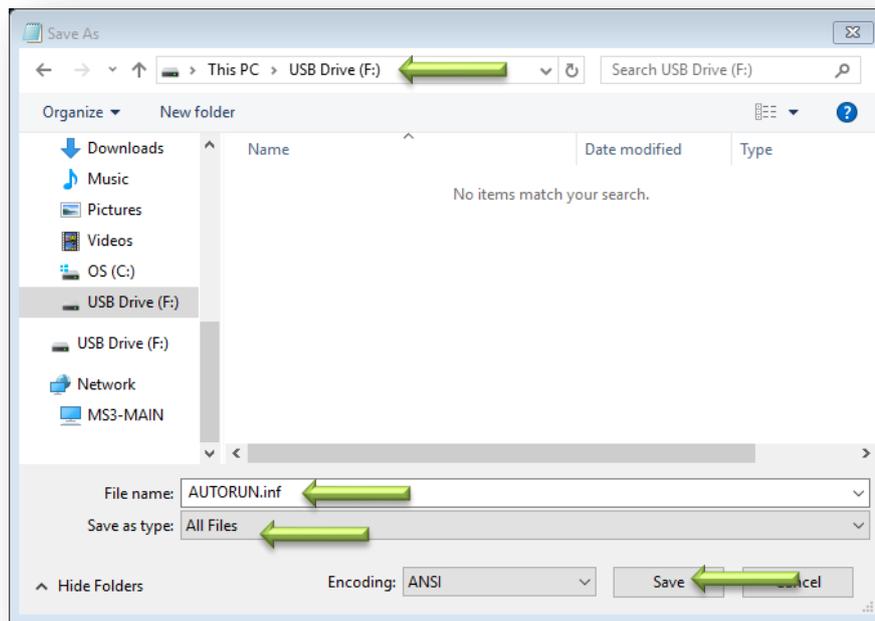

When will notice that I am using an USB drive and not a CD/DVD. This is because it will have the same effect and purpose as on a CD/DVD, only difference is that you may test it and fix should it not work – a CD/DVD must be replaced if your coding had errors.

Now ensure to copy the ICON as indicated in the AUTORUN.INF (remember directory) onto the drive.

No ensure to copy the ICON as indicated in the AUTORUN.INF (remember directory) onto the drive.
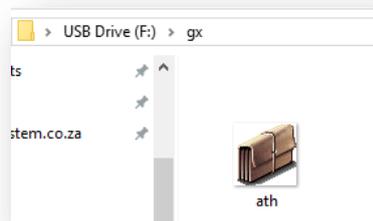
No ensure to copy the ICON as indicated in the AUTORUN.INF (remember directory) onto the drive. You must now copy your application files and folders to the medium. Ensure the path of the EXE called by the AUTORUN.INF is correct.

27.5.1 INSTALLATION APPLICATION

The installation application is the program that will install the entire program onto the computer (unless the application runs from the medium). This application will always be called INSTALL.EXE or SETUP.EXE. For interest sake; if a computer is blocked with administrator rights, simply alter the INSTALL.EXE to INSTELL.EXE and SETUP.EXE as SETOP.EXE and it will bypass the administrator's block.

An INSTALL or SETUP application should be able to do the following tasks:

- Create the working directories on the destination computer.
- Determine if already installed (if so clear and re-install; see updates for conditions).
- Copy the files required to be run on the computer.
- Create a desktop folder/icon with shortcut of program.
- Add to the Window's Application Bar.
- Request database location (if applicable).

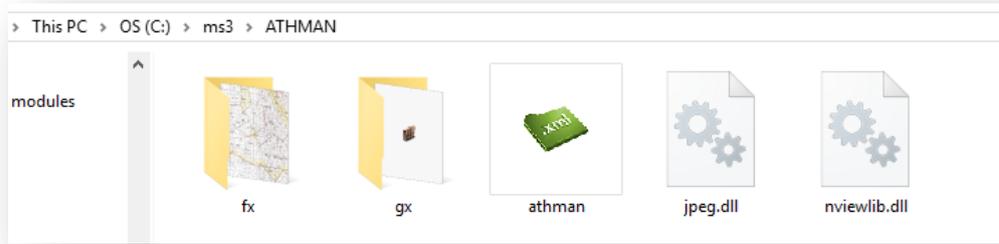Copy all the files and folders of your program to the USB drive to be tested for installation. Let us now create this installation file (called INSTALL.EXE) for a program called MS3XML.exe – when you test the program, test it from the USB drive.

SNO	CODING	EXPLANATION

1	$TYPECHECK ON
	$INCLUDE <RapidQ2.inc>
	$include <qshfileoperation.inc>
	$INCLUDE "XP_Manifest.inc"
	$XP_MANIFEST
	$include <qini.inc>
	dim qinf as qini
	dim dir as string
	dim shfile as qshfileoperation
	dim kykhier as string:kykhier=curdir$
	CREATE Form AS QFORM
	    Caption = "INSTALL ATHMAN":color=16744576
	    Width = 400:Height = 200:Center
	    create but1 as qbutton
	        left=150:top=50:caption="INSTALL"
	    end create
	END CREATE
	SetWindowLong(Form.Handle, -8, 0)
	SetWindowLong(Application.Handle, -8, Form.Handle)
	if direxists("c:\ms3")=0 then mkdir "c:\ms3"
	if direxists("c:\ms3\~common")=0 then mkdir "c:\ms3\~common"
	if direxists("c:\ms3\ATHMAN")=1 then
	    showmessage "Already installed ..."
	end if
	if direxists("c:\ms3\ATHMAN")=0 then mkdir "c:\ms3\ATHMAN"
	function DeskTopDir(dir as string) as string
	    dim dirsys as qregistry
	    dir="desktop"
	    dirsys.rootkey = &H80000001
		Include all the additional elements required (system tools).
		
		Used to determine drives.
		
		Used to copy files.
		Used to determine medium drive (from where installation will take place).
		
		Create essential folders on computer (directories)
		Check if already installed.
		
		Determine desktop location.

SNO	CODING	EXPLANATION
| | ```
    dirsys.openkey("software\microsoft\windows\currentversion\explorer\shell
folders",0)
    result=dirsys.readstring(dir)+"\"
end function
form.caption=DeskTopDir(dir)+"ms3xms"
if direxists(DeskTopDir(dir)+"ms3xms") = 0 then
    mkdir DeskTopDir(dir)+"ms3xms"
end if
xpbutton(but1.handle)
Form.ShowModal
``` | If desktop folder MS3XMS does not exist, then create. |
| 2 | ```
$TYPECHECK ON
$INCLUDE <RapidQ2.inc>
$include <qshfileoperation.inc>
$INCLUDE "XP_Manifest.inc"
$XP_MANIFEST
$include <qini.inc>
dim qinf as qini
dim dir as string
dim shfile as qshfileoperation
dim kykhier as string:kykhier=curdir$
declare sub installnow
CREATE Form AS QFORM
    Caption = "INSTALL ATHMAN":color=16744576
    Width = 400:Height = 200:Center
    create but1 as qbutton
        left=150:top=50:caption="INSTALL":onclick=installnow
    end create
END CREATE
SetWindowLong(Form.Handle, -8, 0)
SetWindowLong(Application.Handle, -8, Form.Handle)
if direxists("c:\ms3")=0 then mkdir "c:\ms3"
if direxists("c:\ms3\~common")=0 then mkdir "c:\ms3\~common"
if direxists("c:\ms3\ATHMAN")=1 then
    showmessage "Already installed ..."
end if
if direxists("c:\ms3\ATHMAN")=0 then mkdir "c:\ms3\ATHMAN"
function DeskTopDir(dir as string) as string
    dim dirsys as qregistry
    dir="desktop"
    dirsys.rootkey = &H80000001
    dirsys.openkey("software\microsoft\windows\currentversion\explorer\shell
folders",0)
    result=dirsys.readstring(dir)+"\"
end function
if direxists(DeskTopDir(dir)+"ms3xms") = 0 then
    mkdir DeskTopDir(dir)+"ms3xms"
end if
xpbutton(but1.handle)
Form.ShowModal

sub installnow
if fileexists("c:\ms3\ATHMAN\athman.exe")=0 then
    shfile.copyex (kykhier+"\athman.exe","c:\ms3\ATHMAN\athman.exe",1,1)
end if
if fileexists("c:\ms3\ATHMAN\jpeg.dll")=0 then
    shfile.copyex (kykhier+"\jpeg.dll","c:\ms3\ATHMAN\jpeg.dll",1,1)
end if
if fileexists("c:\ms3\ATHMAN\nviewlib.dll")=0 then
    shfile.copyex (kykhier+"\nviewlib.dll","c:\ms3\ATHMAN\nviewlib.dll",1,1)
end if
if direxists("c:\ms3\ATHMAN\fx")=0 then
    shfile.copyex (kykhier+"\fx","c:\ms3\ATHMAN\fx",1,1)
end if
if direxists("c:\ms3\ATHMAN\gx")=0 then
    shfile.copyex (kykhier+"\gx","c:\ms3\ATHMAN\gx",1,1)
end if
end sub
``` | Now we will copy all the files and directories to the computer from the medium – the folders may be copied as one, however individual files on the medium:\ flat is to be copied one at a time. Remember will not copy the AUTORUN.INF file, the rest will all be copied.<br><br><br>Click button to start installation.<br><br><br><br><br><br><br><br><br><br><br><br><br><br>Check and copy ATHMAN<br><br><br>Check and copy JPEG.DLL<br><br><br><br>COPY entire folder FX.<br><br><br>Copy entire folder GX. |
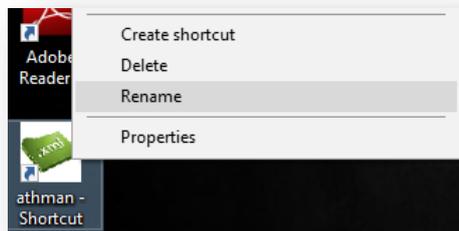
Now you must create a SHORTCUT link that we need to place on the desktop (or desktop folder). To do this right mouse click on the ATHMAN.EXE (within the Explorer program).
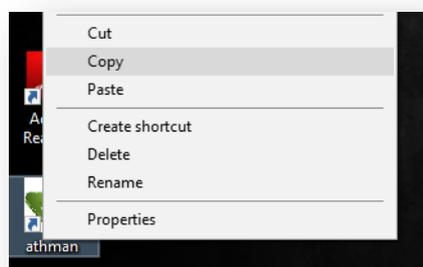
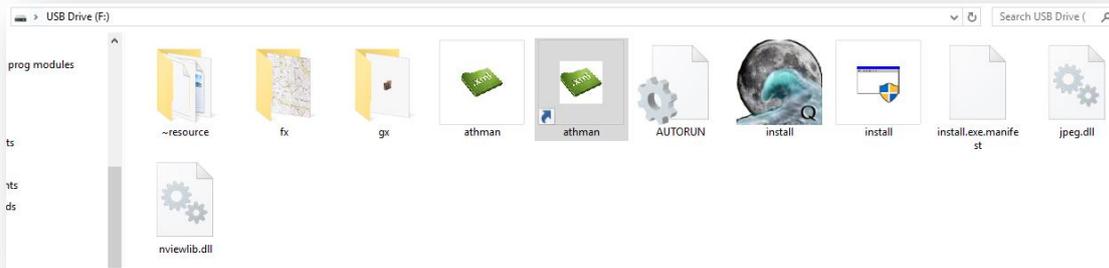Select SEND TO and DESKTOP (create shortcut). Now you must DELETE the C:\MS3\ATHMAN folder.

Rename the shortcut link (on the desktop) to what you want it to be.

(ATHMAN SHORTCUT as ATHMAN). Now you must copy this link icon and paste it into the USB's path where ATHMAN is located.
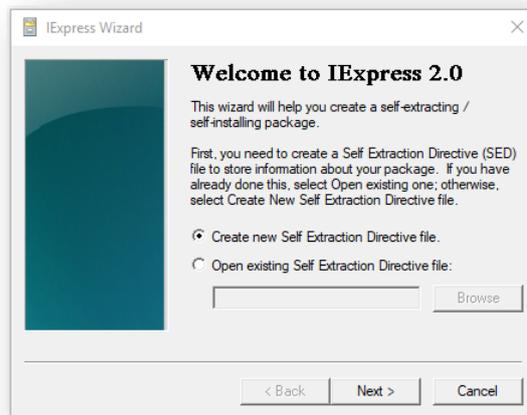
Delete the Desktop Icon Short Cut link. We will now code to copy the short-cut link from the USB medium to the desktop. Remember you had to delete the C:\MS3\ATHMAN folder to re-test the entire installation.

SNO	CODING	EXPLANATION
| 1 | ```
$TYPECHECK ON
$INCLUDE <RapidQ2.inc>
$include <qshfileoperation.inc>
$INCLUDE "XP_Manifest.inc"
$XP_MANIFEST
$include <qini.inc>
dim qinf as qini
dim dir as string
dim shfile as qshfileoperation
dim kykhier as string:kykhier=curdir$
dim newname as string
declare sub installnow
CREATE Form AS QFORM
   Caption = "INSTALL ATHMAN":color=16744576
   Width = 400:Height = 200:Center
   create but1 as qbutton
      left=150:top=50:caption="INSTALL"
      onclick=installnow
   end create
END CREATE
SetWindowLong(Form.Handle, -8, 0)
SetWindowLong(Application.Handle, -8, Form.Handle)
if direxists("c:\ms3")=0 then mkdir "c:\ms3"
if direxists("c:\ms3\~common")=0 then mkdir "c:\ms3\~common"
if direxists("c:\ms3\ATHMAN")=1 then
   showmessage "Already installed ..."
end if
if direxists("c:\ms3\ATHMAN")=0 then mkdir "c:\ms3\ATHMAN"
function DeskTopDir(dir as string) as string
   dim dirsys as qregistry
   dir="desktop"
   dirsys.rootkey = &H80000001
   dirsys.openkey("software\microsoft\windows\currentversion\explorer\shell
folders",0)
   result=dirsys.readstring(dir)+"\"
end function
if direxists(DeskTopDir(dir)+"ms3xms") = 0 then
   mkdir DeskTopDir(dir)+"ms3xms"
end if
newname=DeskTopDir(dir)+"ms3xms\athman.lnk"
if fileexists(DeskTopDir(dir)+"ms3xms\athman.lnk")=0 then
   shfile.copyex (kykhier+"\athman.lnk",newname,1,1)
end if
xpbutton(but1.handle)
Form.ShowModal

sub installnow
``` | Used to assign LINK name as path and filename.<br><br><br><br>Assign path and filename. If short-cut link is not within desktop folder, copy accordingly. |

SNO	CODING	EXPLANATION

	if fileexists["c:\ms3\ATHMAN\athman.exe"]=0 then
	   shfile.copyex [kykhier+"\athman.exe","c:\ms3\ATHMAN\athman.exe",1,1]
	end if
	if fileexists["c:\ms3\ATHMAN\jpeg.dll"]=0 then
	   shfile.copyex [kykhier+"\jpeg.dll","c:\ms3\ATHMAN\jpeg.dll",1,1]
	end if
	if fileexists["c:\ms3\ATHMAN\nviewlib.dll"]=0 then
	   shfile.copyex [kykhier+"\nviewlib.dll","c:\ms3\ATHMAN\nviewlib.dll",1,1]
	end if
	if direxists["c:\ms3\ATHMAN\fx"]=0 then
	   shfile.copyex [kykhier+"\fx","c:\ms3\ATHMAN\fx",1,1]
	end if
	if direxists["c:\ms3\ATHMAN\gx"]=0 then
	   shfile.copyex [kykhier+"\gx","c:\ms3\ATHMAN\gx",1,1]
	end if
	end sub	

27.5.2   IEXPRESS.EXE

When using Windows 10 and later, you press the WINDOWS button and R. Type in IEXPRESS.EXE and press ENTER. This will open the SELF-EXTRACTING INSTALLATION software wizard that will step-by-step create a self-extracting installation file to be used for downloads from your WebSite.

27.6   UPDATE APPLICATION

Updates are required when you alter or update your program. If you wish to have an update application, you need to start your program not with the main program, but a startup program that confirms the version and if the version number is less, then update from a location such as a FTP address. Your startup program must read a text file (VERSION.TXT) data file and confirm the version number there. You will require a FTP address to upload the new version (EXE) and VERSION.TXT file.

Code the startup program to read the FTP version.txt and if the current computer version is less than the FTP version then delete the computer's main program EXE and download the new version from the FTP EXE. Run the main as a secondary program whilst exiting the startup program.

27.7 HELP FILE

There is a HLP file format for all help files related to Windows Programs, however due to compatibility issues with the different Windows version, it is basically discontinued. I advise you therefore to type a help file on your program using MS Word ® and save it as a PDF® file. To call the help file use the associated QRUN element.

```
sub displayhelp
runme.filerun("c:\ms3\ms3xml\ms3xmlhelp.pdf/",1)
end sub
```