

About the document

This documentation is intended to explain a developer how to build an windows installer for a Wb based application which is developed using Java, MySQL and Tomcat.

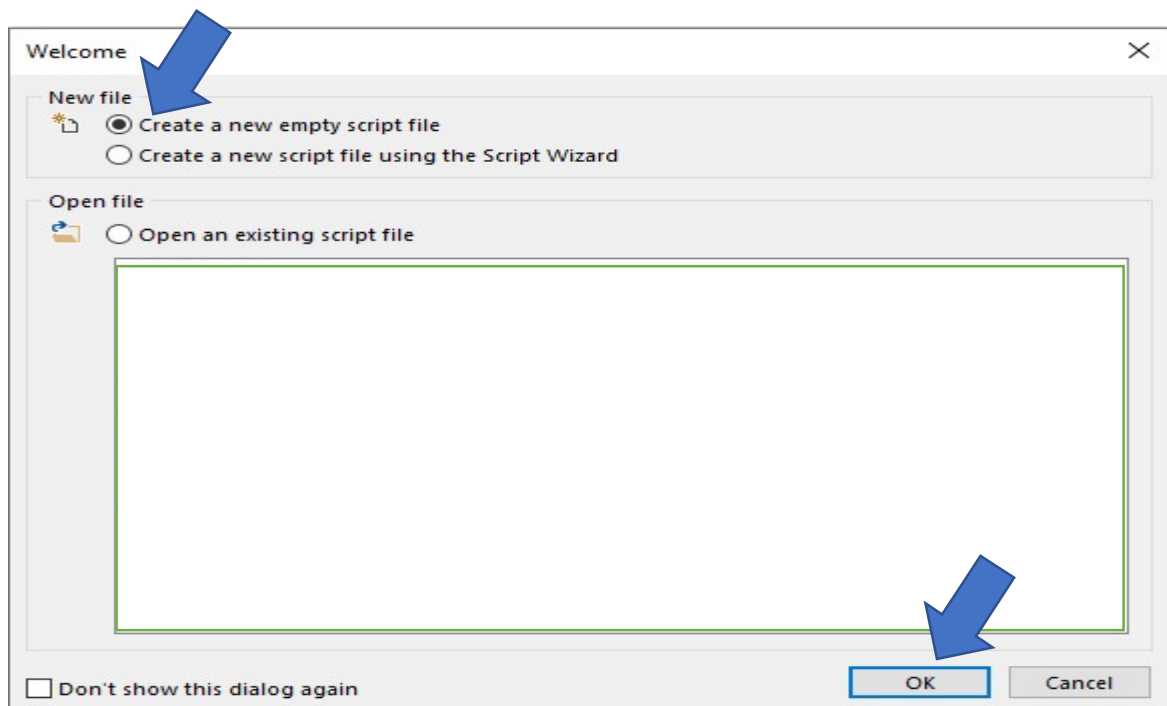
Prerequisites

Before proceeding with this installer build up procedure, you should have below mentioned files and steps covered.

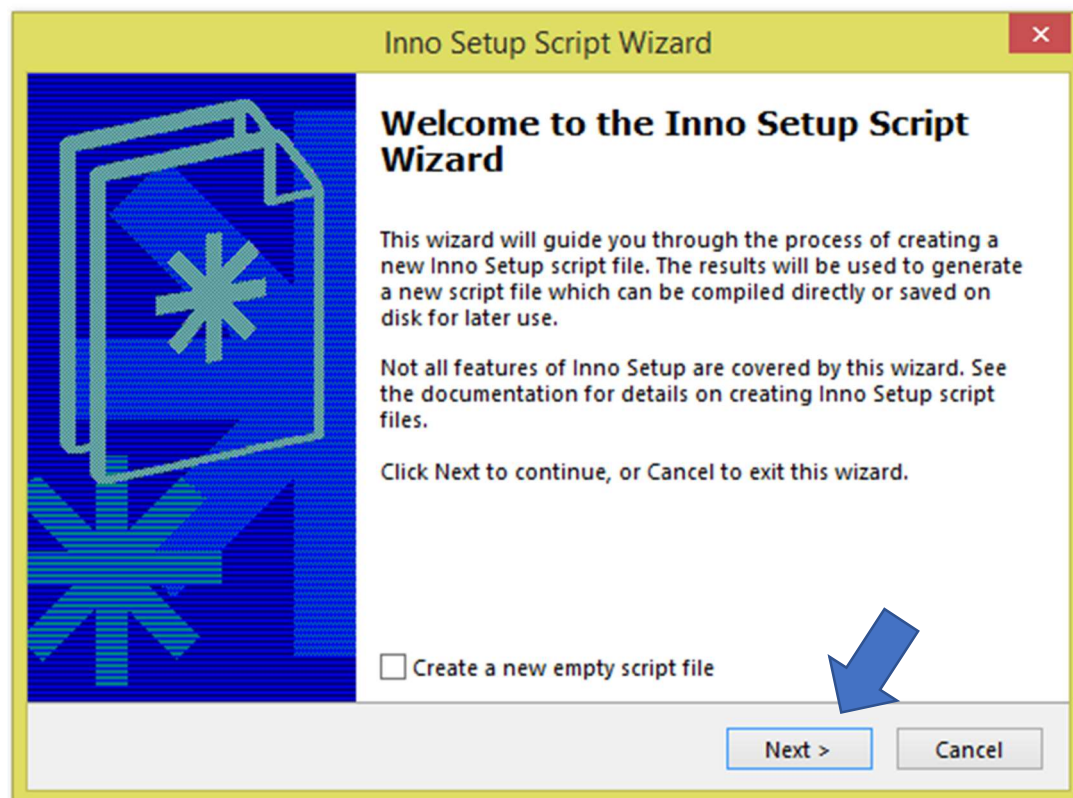
1. A .war file of a web application for which you will be building a web installer.
2. An extracted Tomcat File which can be downloaded from the tomcat website that's <https://tomcat.apache.org/download-70.cgi>
3. JRE of the specific version using which the web application is developed.
4. MySQL of specific version which is being used in the web application.
5. Put all of these into one folder.
6. Download Innosetup compiler from <https://jrsoftware.org/isdl.php> and install the same.
7. Once the it is installed, we are ready to go.

Create a Basic script(.iss) file

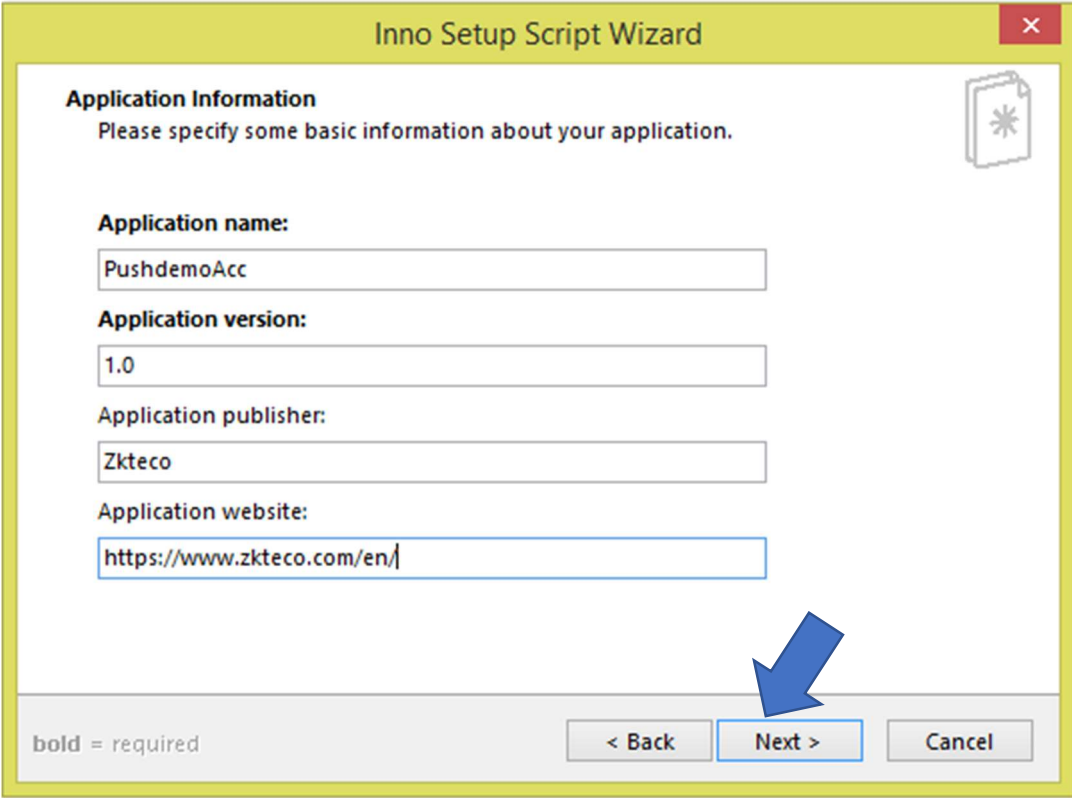
1. Once the Innosetup is installed open the software.
2. This will open a screen like the image given below. Choose on the Create a new script file using setup wizard and click next.



3. Click Next

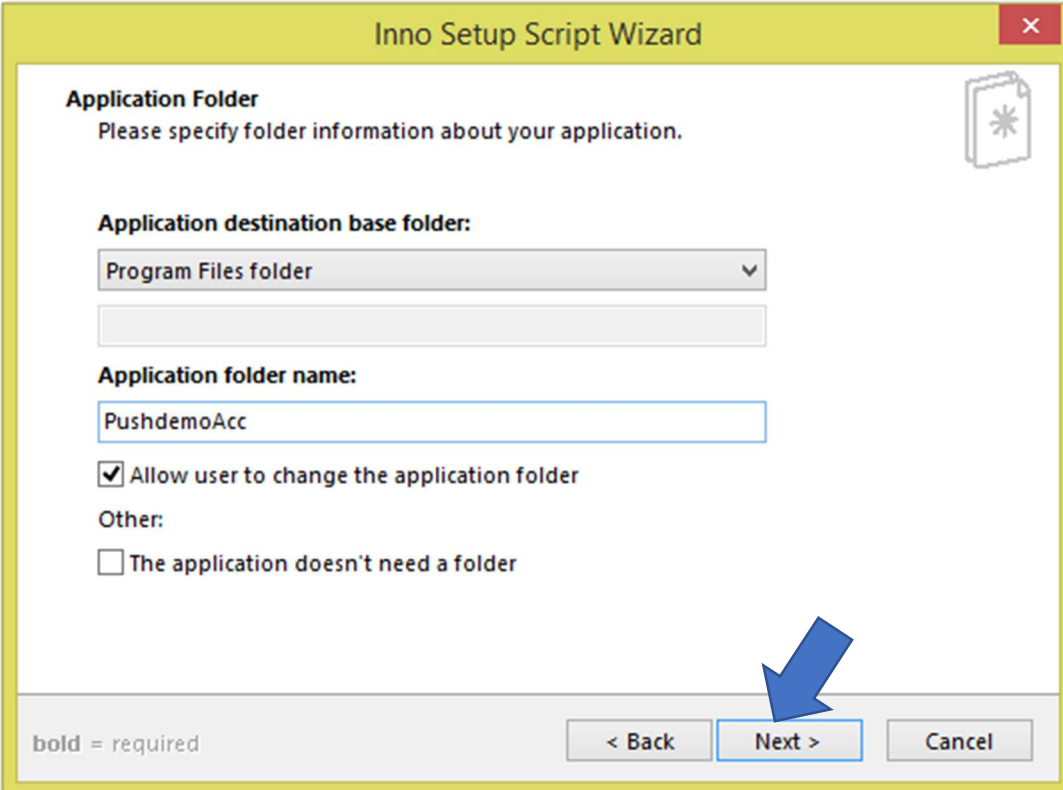


4. Provide the application name, version, Publisher and website of company and Click Next.



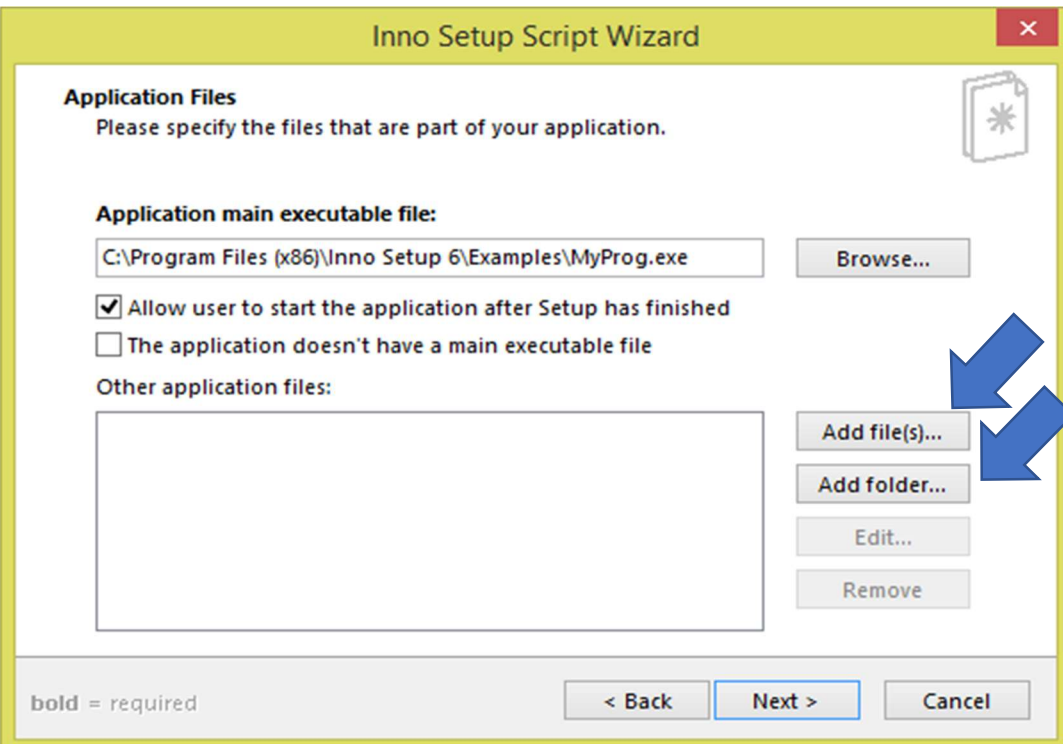
The image shows the 'Inno Setup Script Wizard' window, specifically the 'Application Information' screen. The title bar is yellow with a red close button. The main area has a white background. The text at the top says: 'Application Information', 'Please specify some basic information about your application.' Below this, there are four text input fields: 'Application name:' with the value 'PushdemoAcc', 'Application version:' with the value '1.0', 'Application publisher:' with the value 'Zkteco', and 'Application website:' with the value 'https://www.zkteco.com/en/'. At the bottom, there is a legend that says 'bold = required'. To the right of the legend is a blue arrow pointing to the 'Next >' button. The 'Next >' button is highlighted with a blue border, and the '< Back' and 'Cancel' buttons are to its left and right, respectively.

5. Choose the base folder and folder name when the application will be installed where it will install. Let allow user to change the application folder checked. Click Next.



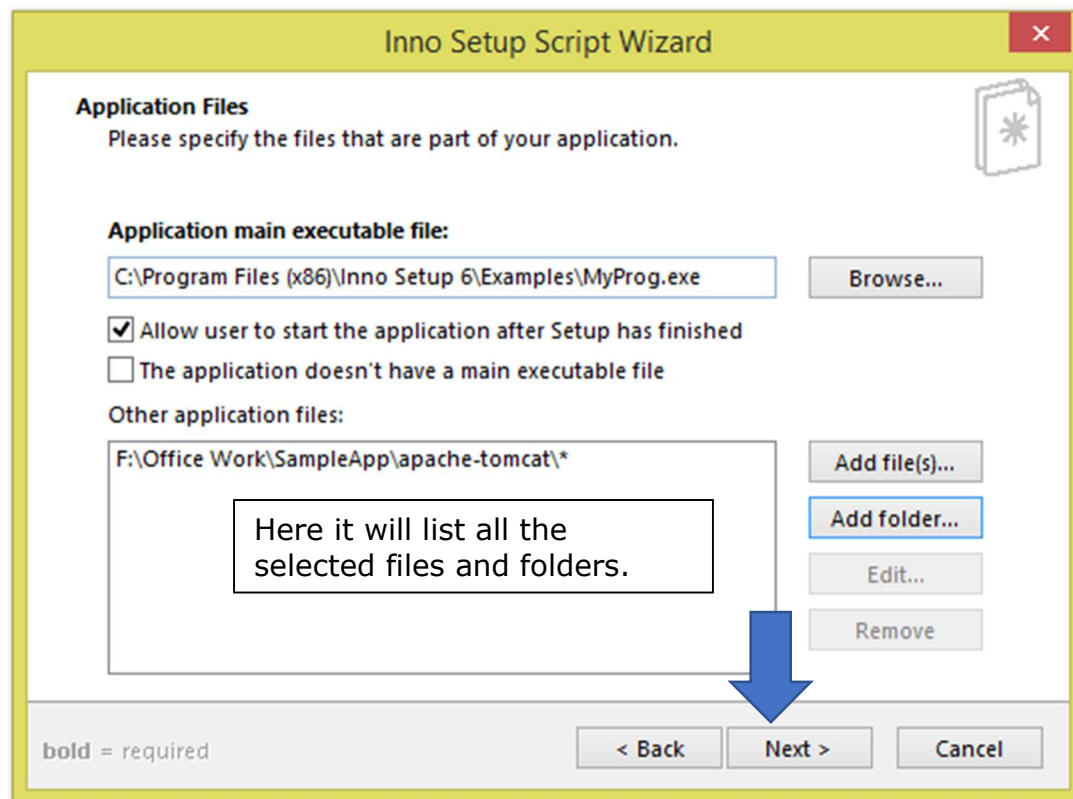
The screenshot shows the 'Inno Setup Script Wizard' window at the 'Application Folder' step. The title bar is yellow with a red close button. The main area is white with a yellow border. The text 'Application Folder' is bold, followed by 'Please specify folder information about your application.' Below this, there is a section for 'Application destination base folder:' with a dropdown menu showing 'Program Files folder' and an empty text box. Another section for 'Application folder name:' has a text box containing 'PushdemoAcc'. There are two checkboxes: 'Allow user to change the application folder' (checked) and 'The application doesn't need a folder' (unchecked). At the bottom, there is a legend 'bold = required' and three buttons: '< Back', 'Next >' (highlighted with a blue arrow), and 'Cancel'.

6. Let the Default be there and click on the add files to add the dependency files for the software. In this case JRE, MYSQL, Tomcat Folder.

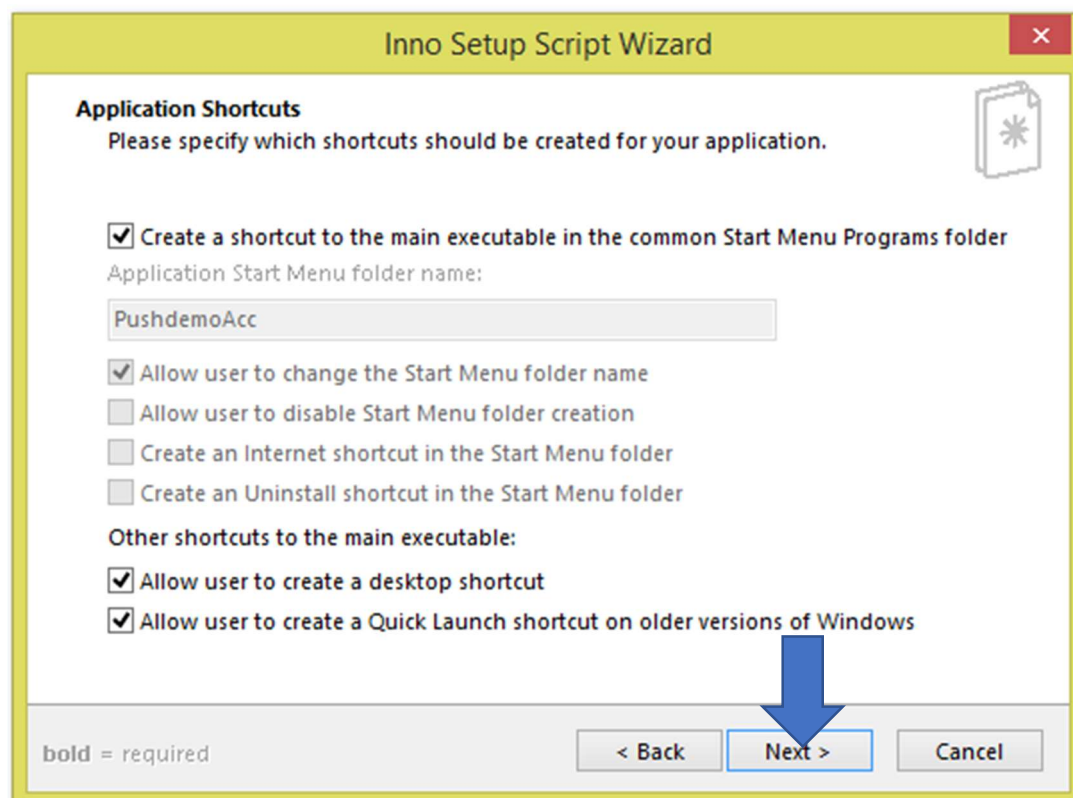


The screenshot shows the 'Inno Setup Script Wizard' window at the 'Application Files' step. The title bar is yellow with a red close button. The main area is white with a yellow border. The text 'Application Files' is bold, followed by 'Please specify the files that are part of your application.' Below this, there is a section for 'Application main executable file:' with a text box containing 'C:\Program Files (x86)\Inno Setup 6\Examples\MyProg.exe' and a 'Browse...' button. There are two checkboxes: 'Allow user to start the application after Setup has finished' (checked) and 'The application doesn't have a main executable file' (unchecked). Below this is a section for 'Other application files:' with a large empty text box. To the right of this text box are four buttons: 'Add file(s)...', 'Add folder...' (highlighted with a blue arrow), 'Edit...', and 'Remove'. At the bottom, there is a legend 'bold = required' and three buttons: '< Back', 'Next >' (highlighted with a blue arrow), and 'Cancel'.

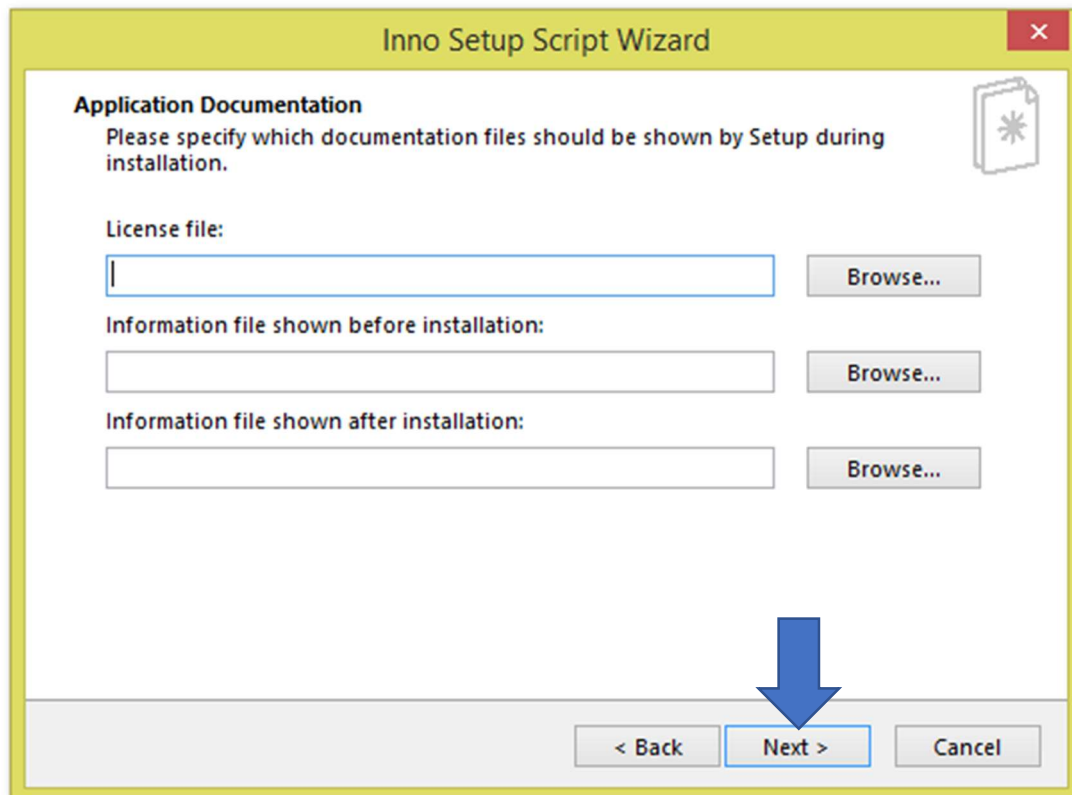
7. After choosing all the dependent files and folder Click Next.



8. Select the required check boxes and click Next.

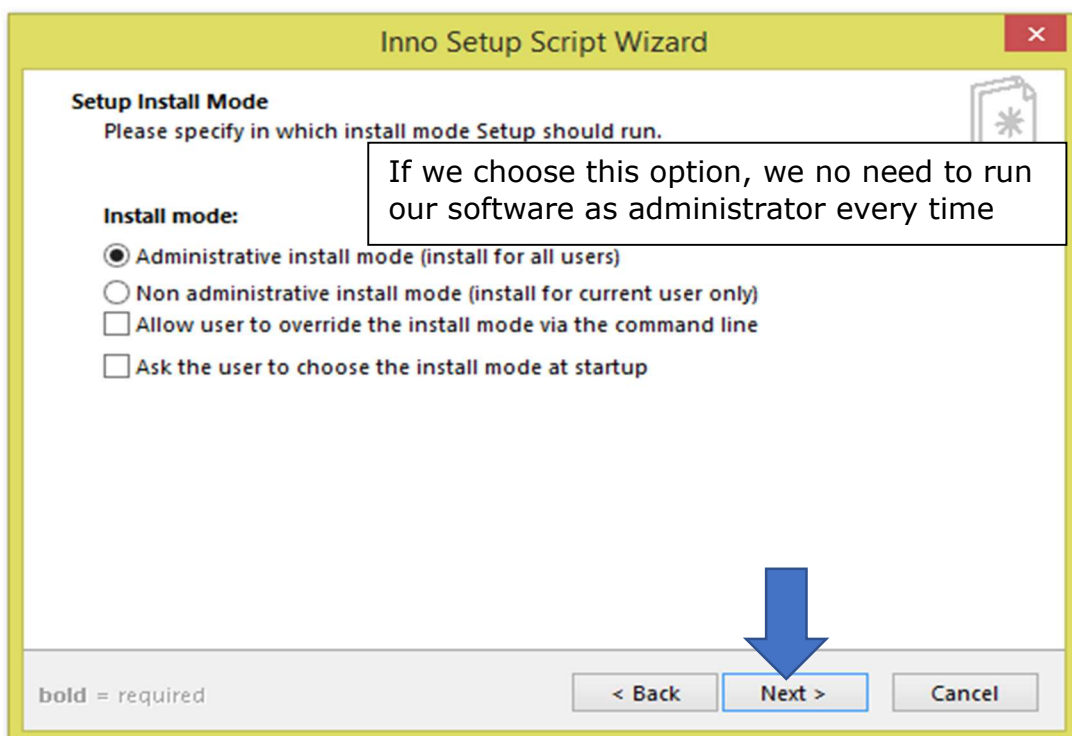


9. Choose the license file if any required and fill the boxes if any required and click Next.



The screenshot shows the 'Inno Setup Script Wizard' window, specifically the 'Application Documentation' page. The title bar is yellow with the text 'Inno Setup Script Wizard' and a red close button. The main area has a yellow header with the title 'Application Documentation' and a subtitle 'Please specify which documentation files should be shown by Setup during installation.' Below this, there are three sections, each with a text input field and a 'Browse...' button: 'License file:', 'Information file shown before installation:', and 'Information file shown after installation:'. At the bottom, there are three buttons: '< Back', 'Next >', and 'Cancel'. A large blue arrow points down to the 'Next >' button.

10. Choose Administrative install mode as we need admin permission to install and click Next.



The screenshot shows the 'Inno Setup Script Wizard' window, specifically the 'Setup Install Mode' page. The title bar is yellow with the text 'Inno Setup Script Wizard' and a red close button. The main area has a yellow header with the title 'Setup Install Mode' and a subtitle 'Please specify in which install mode Setup should run.' Below this, there are four options under the heading 'Install mode:':

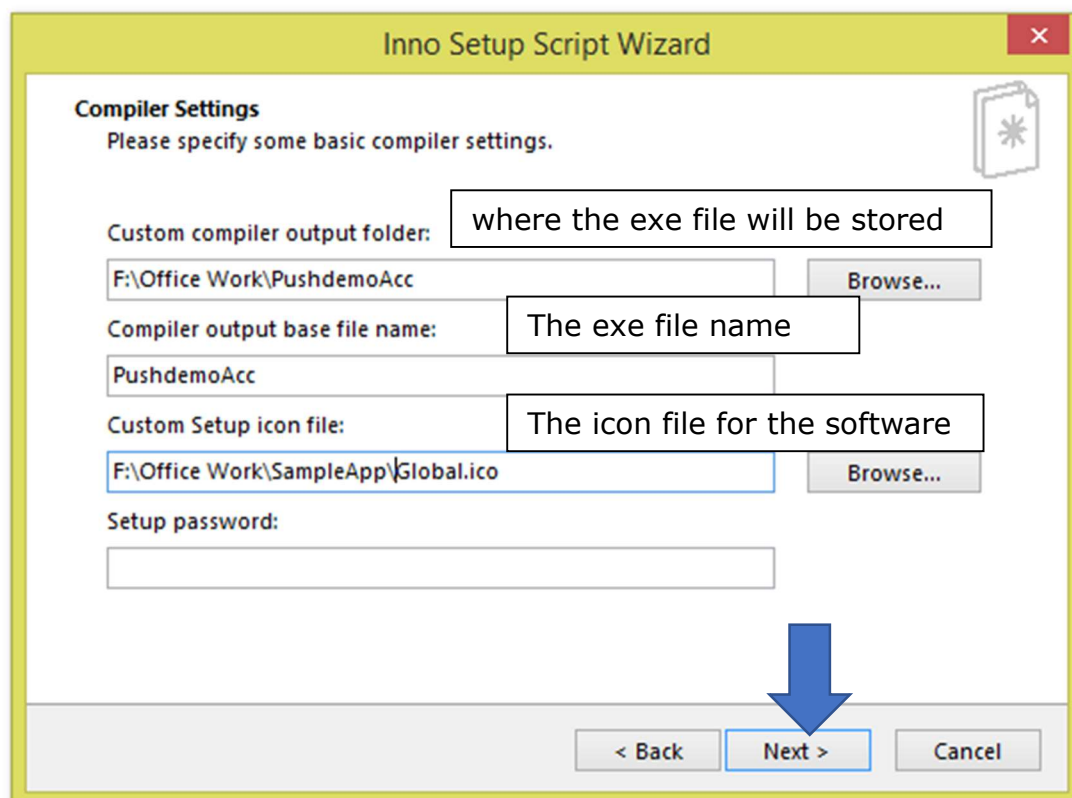
- ☒ Administrative install mode (install for all users)
- ☐ Non administrative install mode (install for current user only)
- ☐ Allow user to override the install mode via the command line
- ☐ Ask the user to choose the install mode at startup

At the bottom, there are three buttons: '< Back', 'Next >', and 'Cancel'. A large blue arrow points down to the 'Next >' button. A text box with a black border is overlaid on the right side of the page, containing the text: 'If we choose this option, we no need to run our software as administrator every time'.

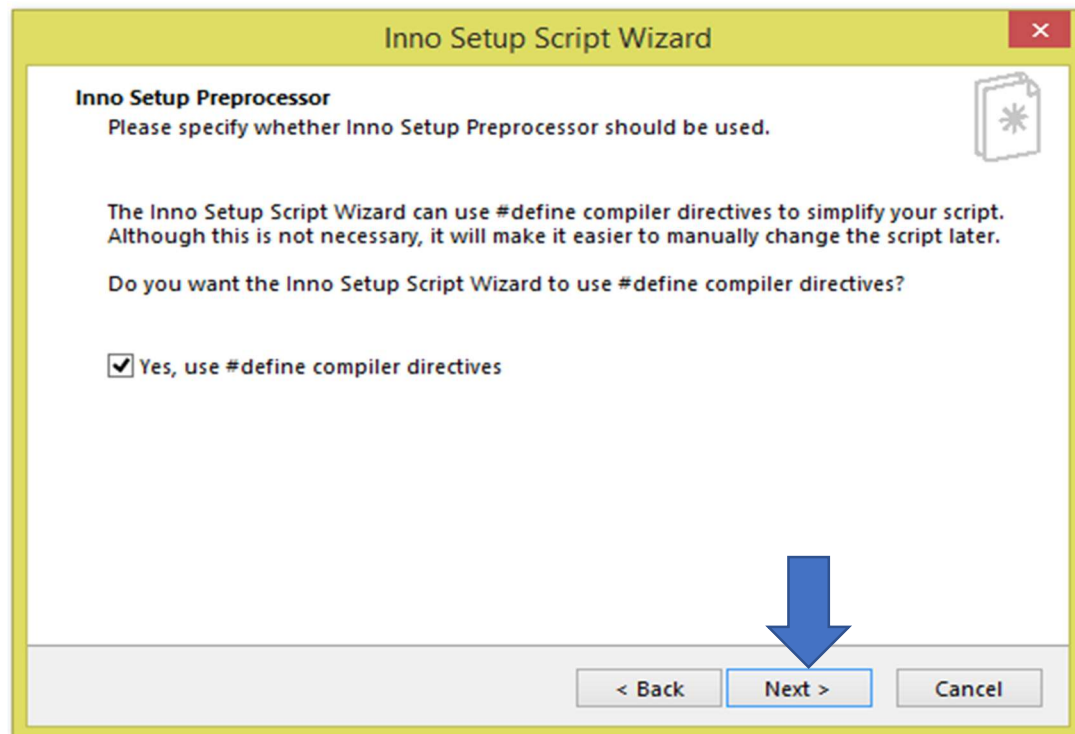
11. Choose language as English and click Next.



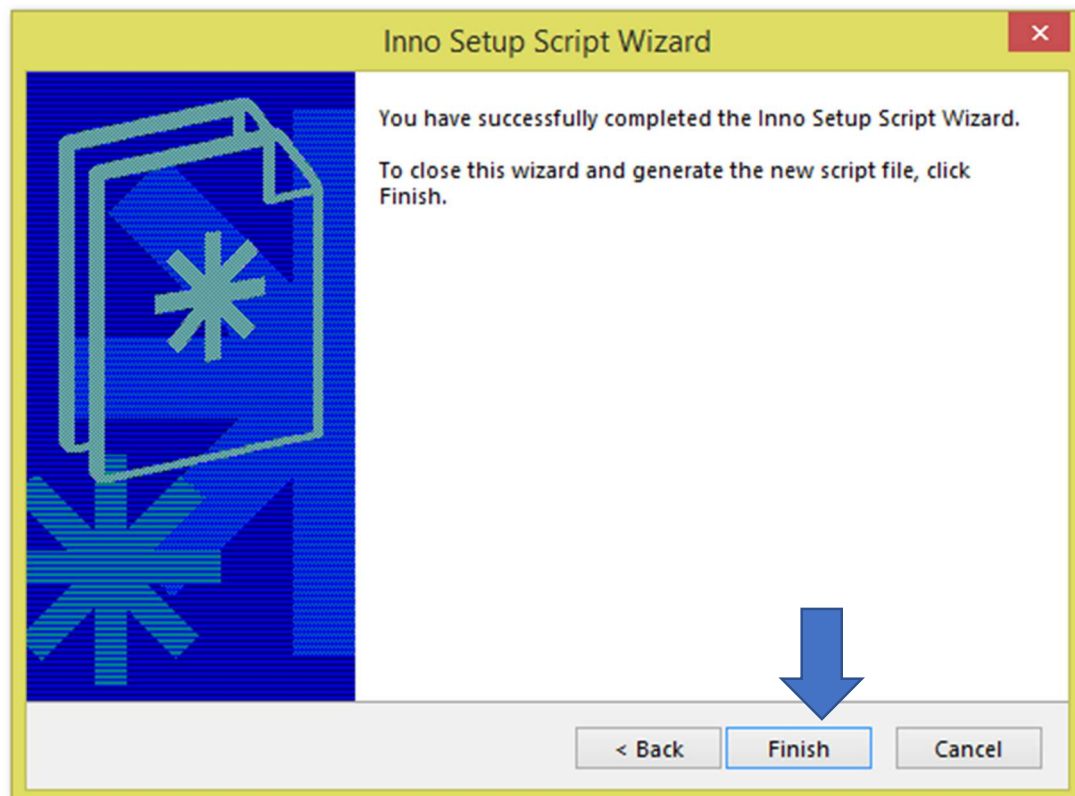
12. Choose the specifics mentioned and click Next.



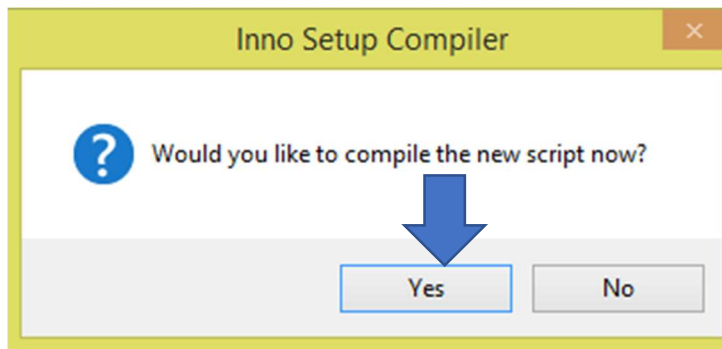
13. Choose Yes and click on Next.



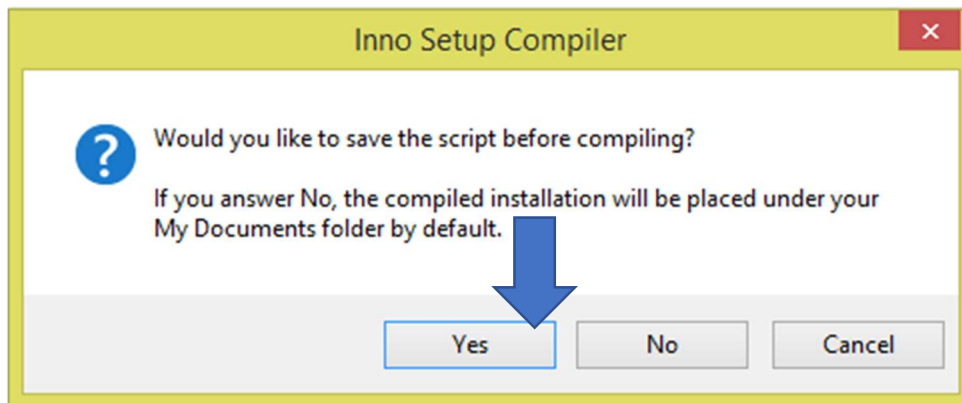
14. Click Finish. This will create a script file.



15. As soon as you click Finish it will show the below screen with a basic script file. Click on Yes



16. Click Yes and save the .iss file into the same folder where all the prerequisite files are there.



17. Now the base file is ready to be edited. We can now modify it according to our requirement. Below some of the code snippet is given. For a good understanding of the code first go through the documentation which is given in <https://jrsoftware.org/ishelp/>.

Edit the script according to the requirement

1. The image below shows the [Setup] section which explains about the basic details of the application which is going to be created. The **ArchitecturesInstallIn64BitMode=x64** is given if the software is installed in 32bit system also the files will defaultly be stored in Programfiles.

```
[Setup]
; NOTE: The value of AppId uniquely identifies this application. Do not use the same AppId value in installers for other applications.
; (To generate a new GUID, click Tools | Generate GUID inside the IDE.)
AppId={0F80AC4D-AD23-4208-8E90-9E759EC55AB9}
AppName={#MyAppName}
AppVersion={#MyAppVersion}
AppVerName={#MyAppName} {#MyAppVersion}
AppPublisher={#MyAppPublisher}
AppPublisherURL={#MyAppURL}
AppSupportURL={#MyAppURL}
AppUpdatesURL={#MyAppURL}
DefaultDirName={autopf}\{#MyAppName}
DisableProgramGroupPage=yes
; Uncomment the following line to run in non administrative install mode (install for current user only.)
;PrivilegesRequired=lowest
OutputBaseFilename=mysetup
Compression=lzma
SolidCompression=yes
WizardStyle=modern
|
ChangesEnvironment=yes
ArchitecturesInstallIn64BitMode=x64
PrivilegesRequired=admin
```


- The [Files] section will copy the specified files to the installation directory in the host system. Like in this software we have dependency on Java, Tomcat and MySQL, so we are copying it to host pc. But after installation which files we don't required anymore we should delete it.

```
[Files]
Source: "jre-8u241-windows-x64.exe"; DestDir: "{app}"; DestName:
"JREInstaller.exe"; Flags: deleteafterinstall; AfterInstall:RunJavaInstaller();
Source: "mysql-installer-community-5.7.29.0.msi"; DestDir: "{app}"; Flags:
deleteafterinstall;
Source: "apache-tomcat-7.0.100\*..*"; DestDir: "{app}\tomcat"; Flags: ignoreversion
recursesubdirs createallsubdirs
Source: "apache-tomcat-7.0.100\bin\startup.bat"; DestDir: "{app}"; DestName:
"start.bat";
Source: "apache-tomcat-7.0.100\bin\shutdown.bat"; DestDir: "{app}"; DestName:
"stop.bat";
Source: "pushdemo.sql"; DestDir: "{app}";
```

- The [Registry] section is to specify some files in to host pc registry or to change environment variables or add it. In this section the JAVA_HOME and CATALINA_HOME is set.

```
27 [Registry]
28 ; set JAVA_HOME
29 Root: HKCU; Subkey: "Environment"; ValueType:string; ValueName:"JRE_HOME";
ValueData:"{pf}\Java\jre1.8.0_241"; Flags: preservestringtype; Check: setJrePath();
30 ; set CATALINA_HOME
31 Root: HKCU; Subkey: "Environment"; ValueType:string; ValueName:"CATALINA_HOME";
ValueData:"{app}\tomcat"; Flags: preservestringtype
^^
```

- The [Run] section is used to run the files which we have copied in the file section to the host pc. In this if some command line arguments are required also can be passed. There is a lot of parameters passed here which can be referred from the <https://jrsoftware.org/ishelp/> [Inno Setup Documentation].

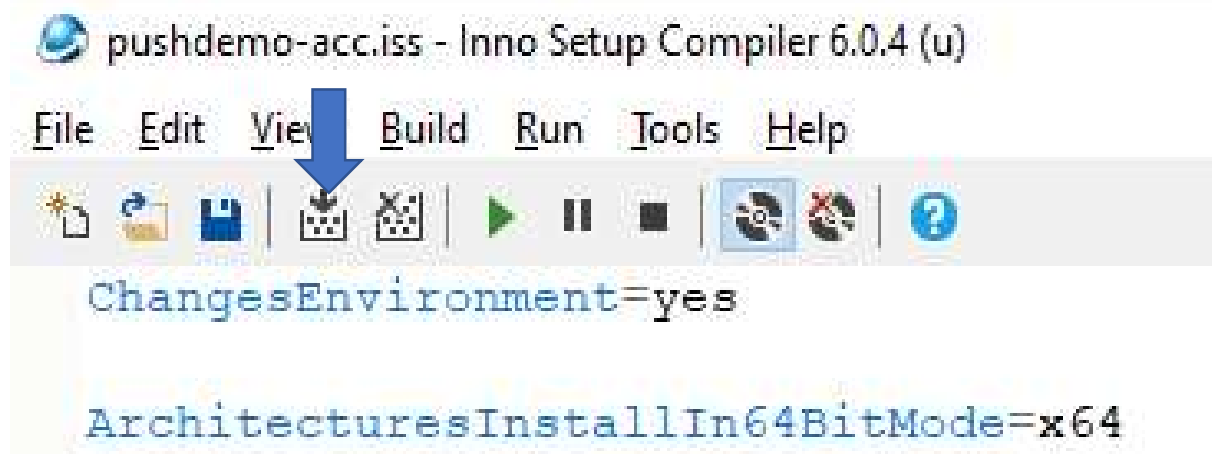
```
--
34 [Run]
35 Filename: "{app}\JREInstaller.exe"; Parameters: "/s"; Flags: nowait runhidden
runascurrentuser;
36 Filename: msiexec.exe;
Parameters:"/i"{app}\mysql-installer-community-5.7.29.0.msi" /qn "; StatusMsg:
Unpacking Mysql 7 installation;
37 Filename: "{commonpf32}\MySQL\MySQL Installer for
Windows\MySQLInstallerConsole.exe"; Parameters: " community install -silent
server;5.7.29;x64*:type=config;openfirewall=true;generallog=true;binlog=true;serverid
=3306;enable_tcpip=true;port=3306;rootpasswd=root;installdir="{app}\MySQL\MySQL
Server 5.7";datadir="{app}\MySQL\data";StatusMsg: Installing MySQL Server;
Check: IsWin64; Flags: nowait runhidden;
38 Filename: "{commonpf64}\MySQL\MySQL Installer for
Windows\MySQLInstallerConsole.exe"; Parameters: " community install -silent
server;5.7.29;x64*:type=config;openfirewall=true;generallog=true;binlog=true;serverid
=3306;enable_tcpip=true;port=3306;rootpasswd=root;installdir="{app}\MySQL\MySQL
Server 5.7";datadir="{app}\MySQL\data";StatusMsg: Installing MySQL Server;
Check: NOT IsWin64; Flags: nowait runhidden;
39 Filename: "{reg:HKLM\SOFTWARE\MySQL AB\MySQL Server 5.6,Location}\bin\mysql.exe";
Parameters: " --user=root --password=root pushdemo -h localhost -e " source
{code:GetScriptData} """; StatusMsg: Loading Database Tables; Flags:
waituntilterminated;
40 Filename: "{app}\tomcat\bin\service.bat"; Parameters: "install"; Flags:runhidden
41 Filename: "{app}\tomcat\bin\startup.bat"; Description: Strating Tomact; Flags:
nowait runhidden postinstall skipifsilent;
42
```

5. The [Code] section shows that if any utility code has to be written it can be written here i.e. In this case the code is written to decide which version of java is installed in the host system or its installed or not.

```
43 [Code]
44 var
45     javaVer: String;
46     LicenseFilePath: TInputFileWizardPage;
47     DataDirPage: TInputDirWizardPage;
48     SampleDataPage: TInputOptionWizardPage;
49     DataDirVal: String;

50
51 procedure DecodeVersion(verstr: String; var verint: array of Integer);
52 var
53     i,p: Integer; s: string;
54 begin
55     { initialize array }
56     verint := [0,0,0,0];
57     i := 0;
58     while ((Length(verstr) > 0) and (i < 4)) do
59     begin
60         p := pos('.', verstr);
61         if p > 0 then
62         begin
63             if p = 1 then s:= '0' else s:= Copy (verstr, 1, p - 1);
64             verint[i] := StrToInt(s);
65             i := i + 1;
66             verstr := Copy (verstr, p+1, Length(verstr));
67         end
68         else
69         begin
```

6. After the code written save the file into the folder where all the files like java, mysql.msi and tomcat is present.
7. Once saved click on the Compile icon which will generate the desired .exe file into the specified folder in the [Setup] section.



Run the executable in any windows.

Once the executable file is generated, we are ready to install the file in any windows system.