

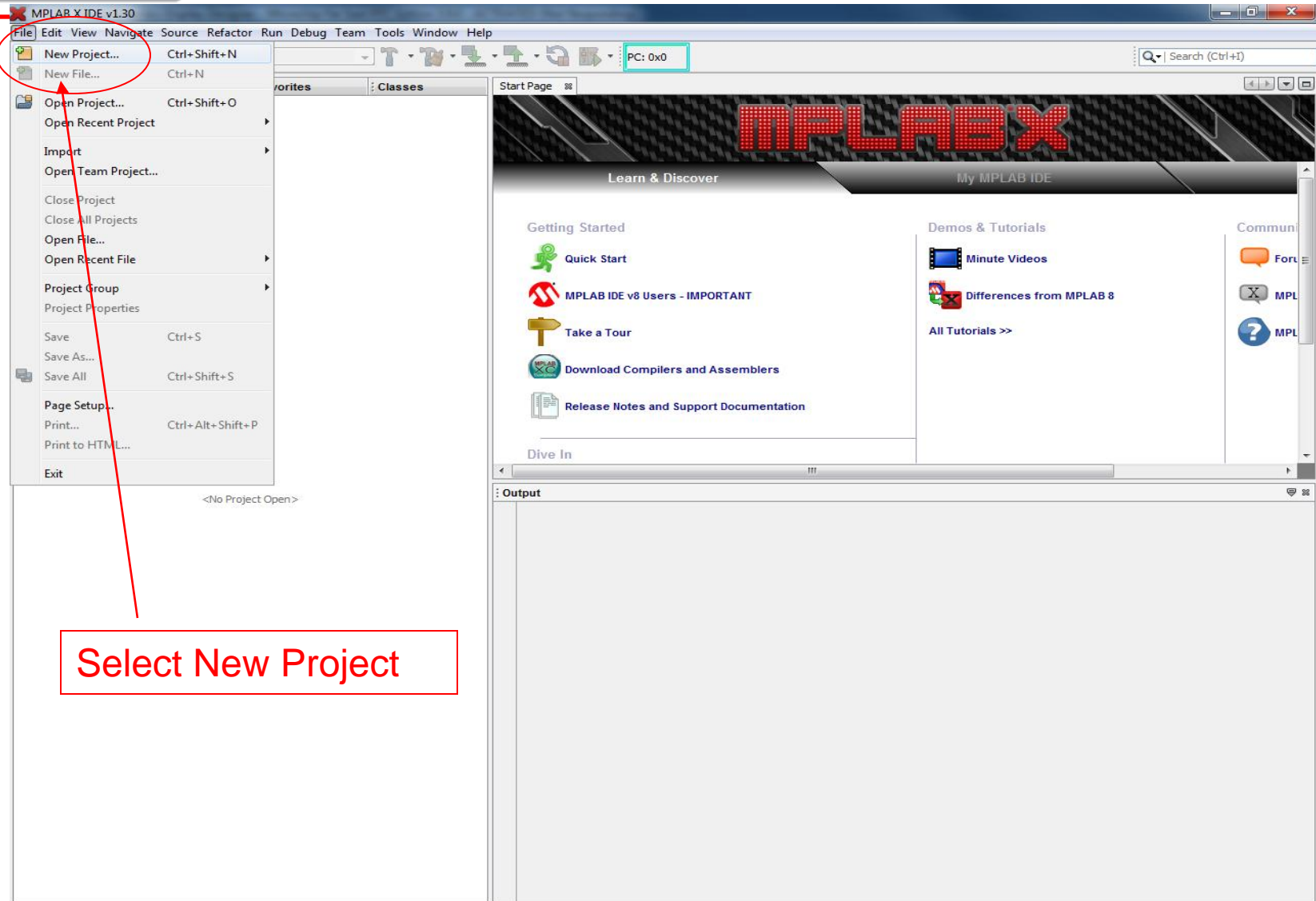


3 Steps to complete Graphic Design

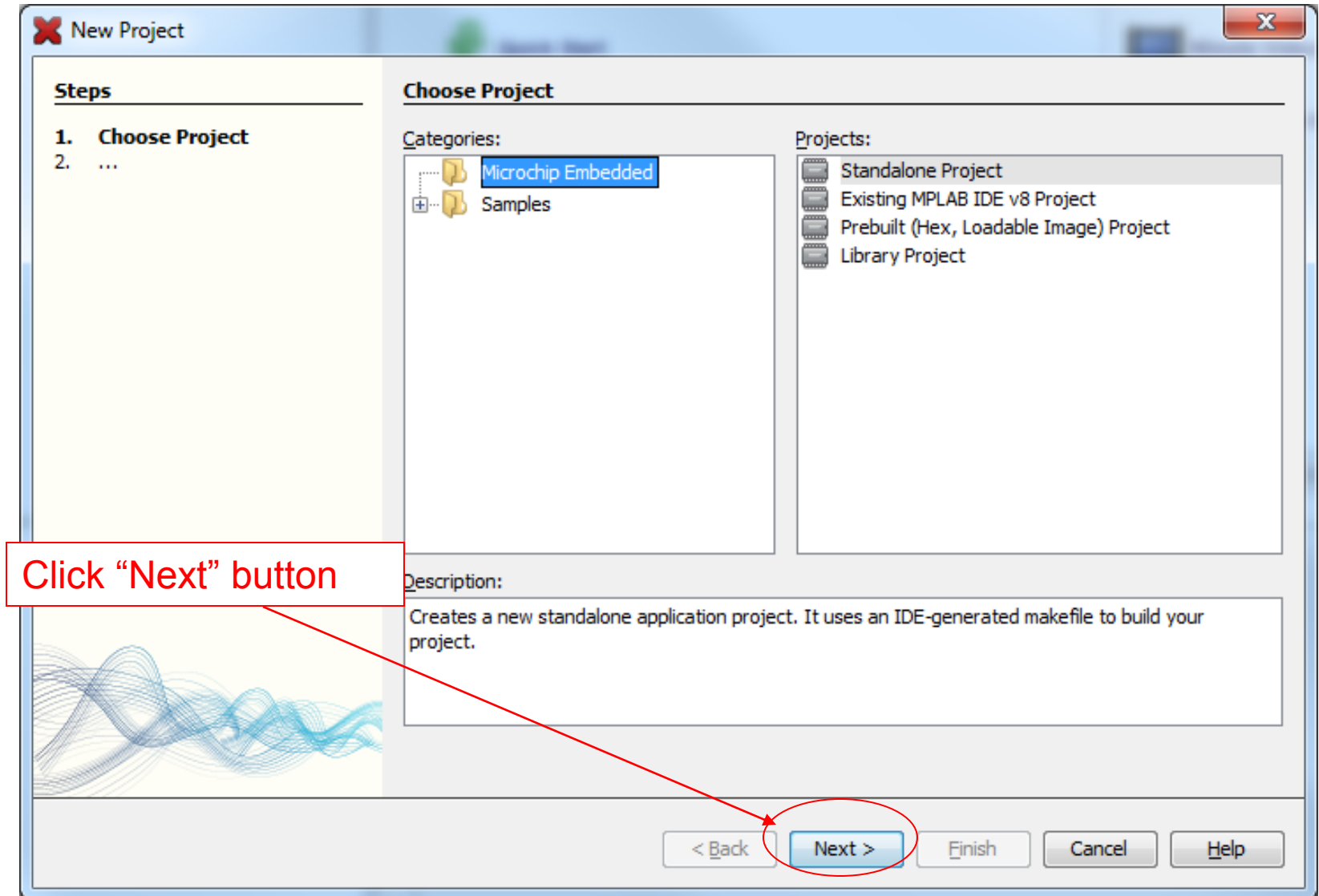
1. **MPLAB(X) template for new project
(Slide 2 – Slide 8)**
2. **VGDD code generation (Graphic Design)
(Slide 9 – Slide 28)**
3. **Code verification by MPLABX
(Slide 29 – Slide 33)**



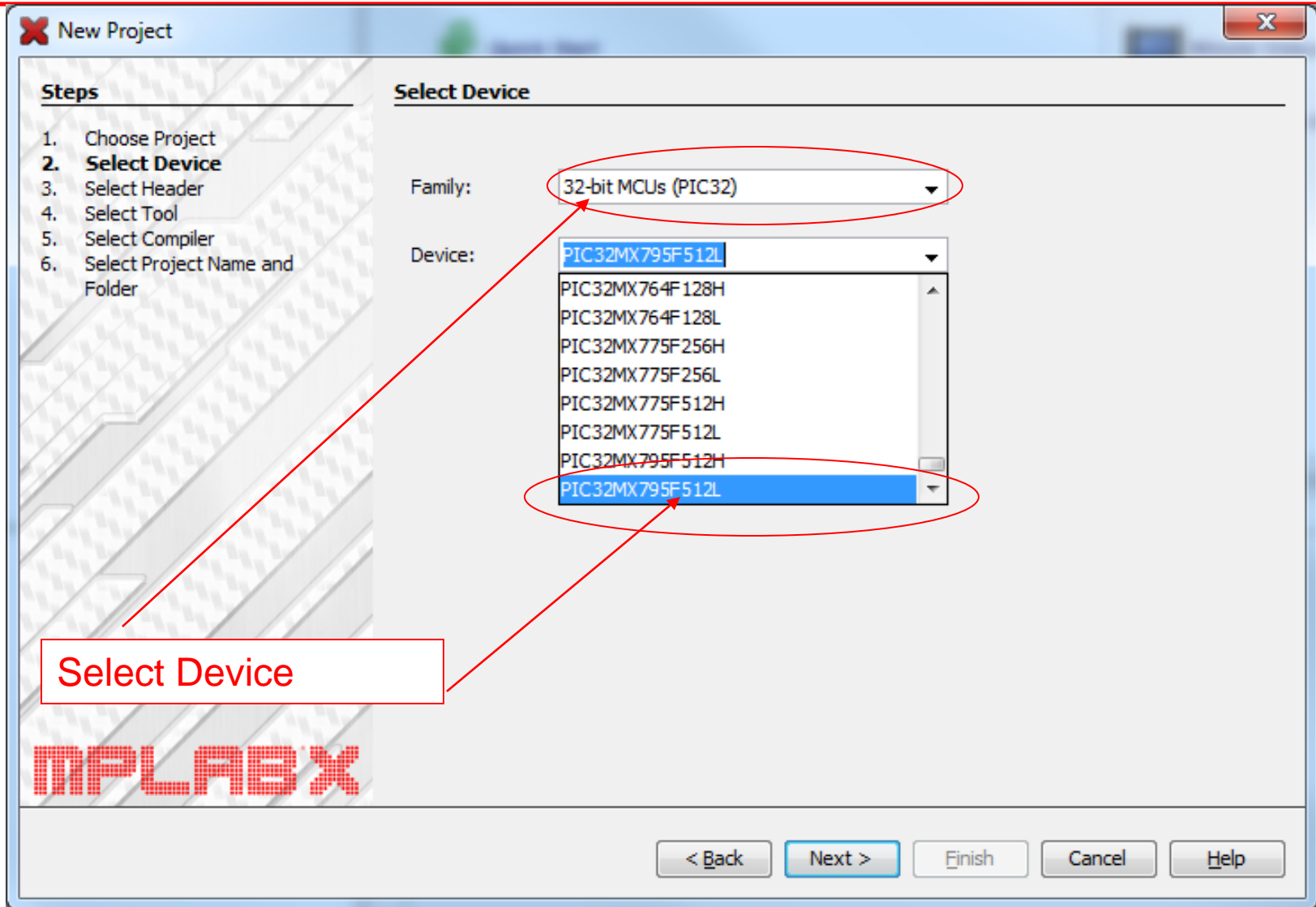
Step 1 – MPLAB(X) template for new project



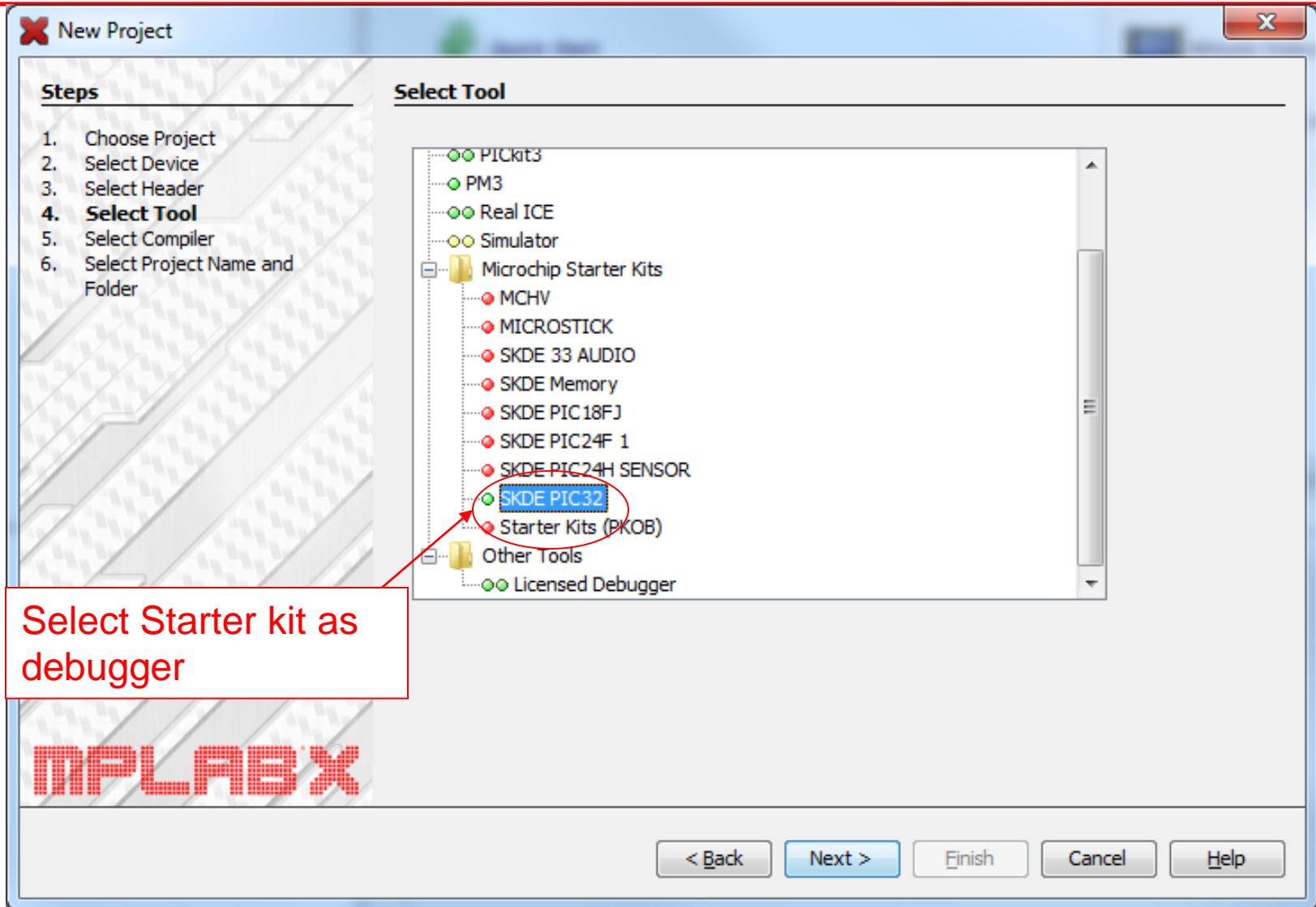
Step 1 – MPLAB(X) template for new project



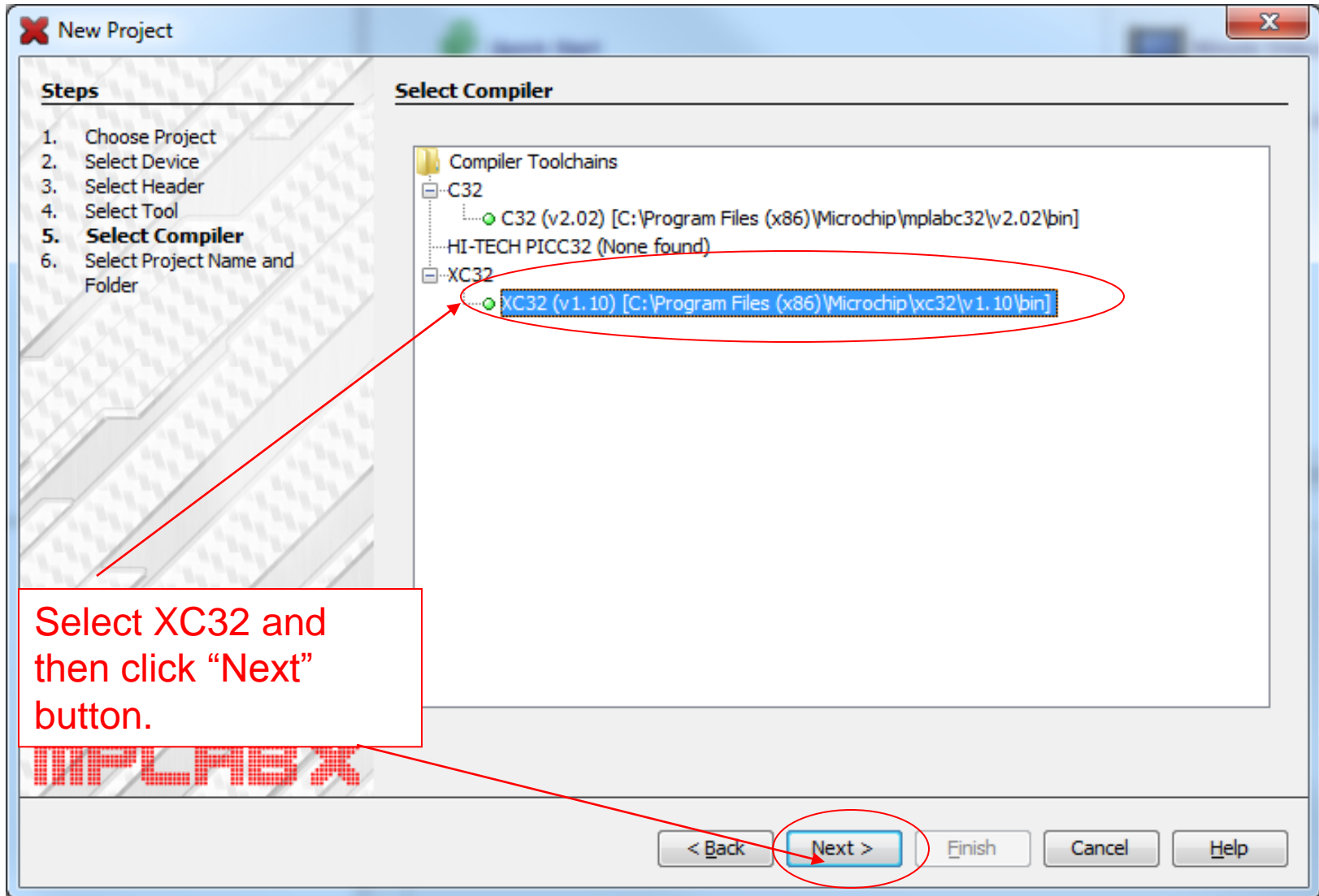
Step 1 – MPLAB(X) template for new project



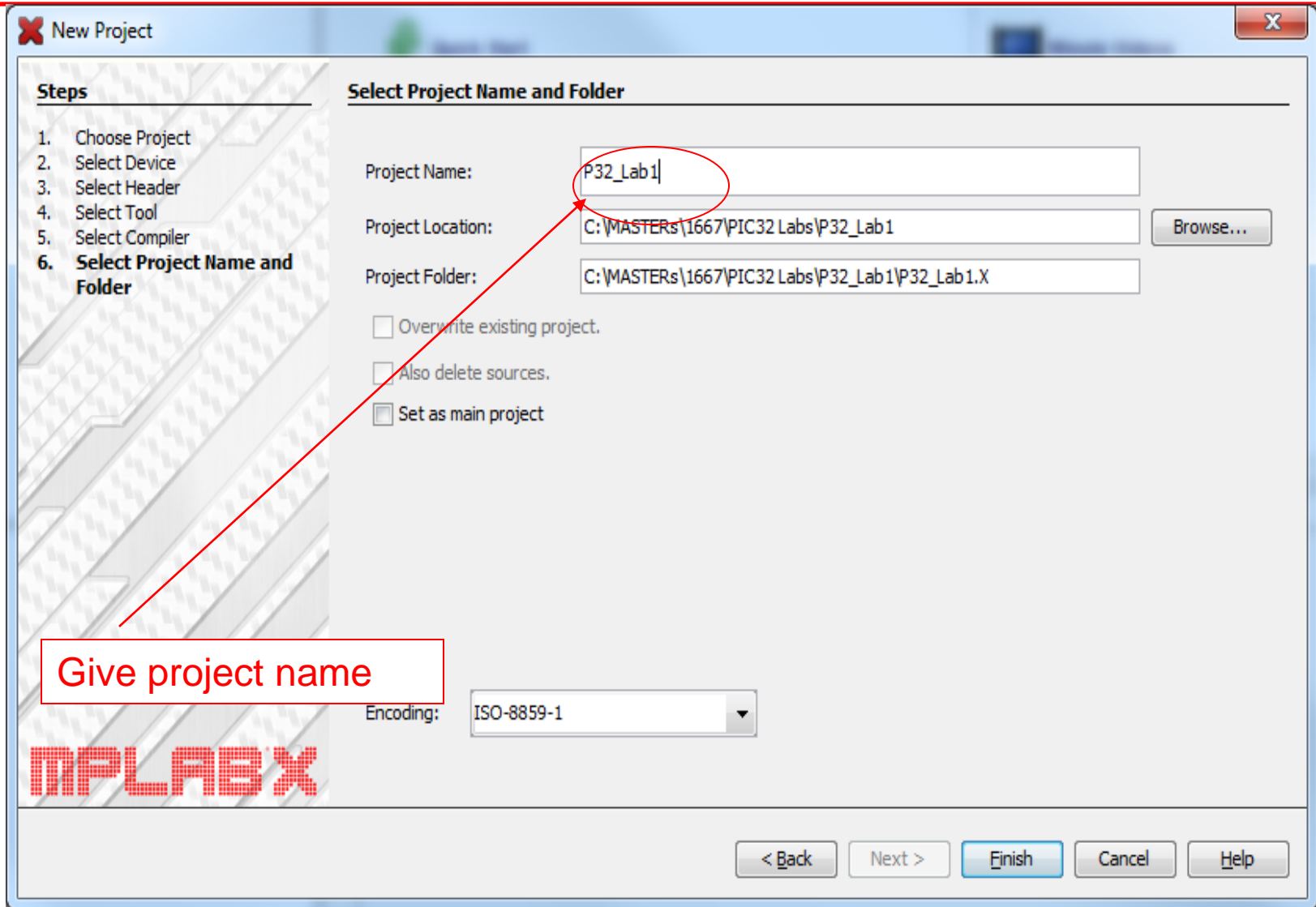
Step 1 – MPLAB(X) template for new project



Step 1 – MPLAB(X) template for new project



Step 1 – MPLAB(X) template for new project



The image shows the 'New Project' dialog box in MPLAB X. The 'Steps' list on the left has '6. Select Project Name and Folder' highlighted. The 'Project Name' field contains 'P32_Lab1', which is circled in red. A red arrow points from a text box labeled 'Give project name' to this field. The 'Project Location' is 'C:\MASTERS\1667\PIC32 Labs\P32_Lab1' and the 'Project Folder' is 'C:\MASTERS\1667\PIC32 Labs\P32_Lab1\P32_Lab1.X'. There are checkboxes for 'Overwrite existing project.', 'Also delete sources.', and 'Set as main project'. The 'Encoding' is set to 'ISO-8859-1'. At the bottom are buttons for '< Back', 'Next >', 'Finish', 'Cancel', and 'Help'.

New Project

Steps

1. Choose Project
2. Select Device
3. Select Header
4. Select Tool
5. Select Compiler
- 6. Select Project Name and Folder**

Select Project Name and Folder

Project Name: P32_Lab1

Project Location: C:\MASTERS\1667\PIC32 Labs\P32_Lab1 Browse...

Project Folder: C:\MASTERS\1667\PIC32 Labs\P32_Lab1\P32_Lab1.X

☐ Overwrite existing project.

☐ Also delete sources.

☒ Set as main project

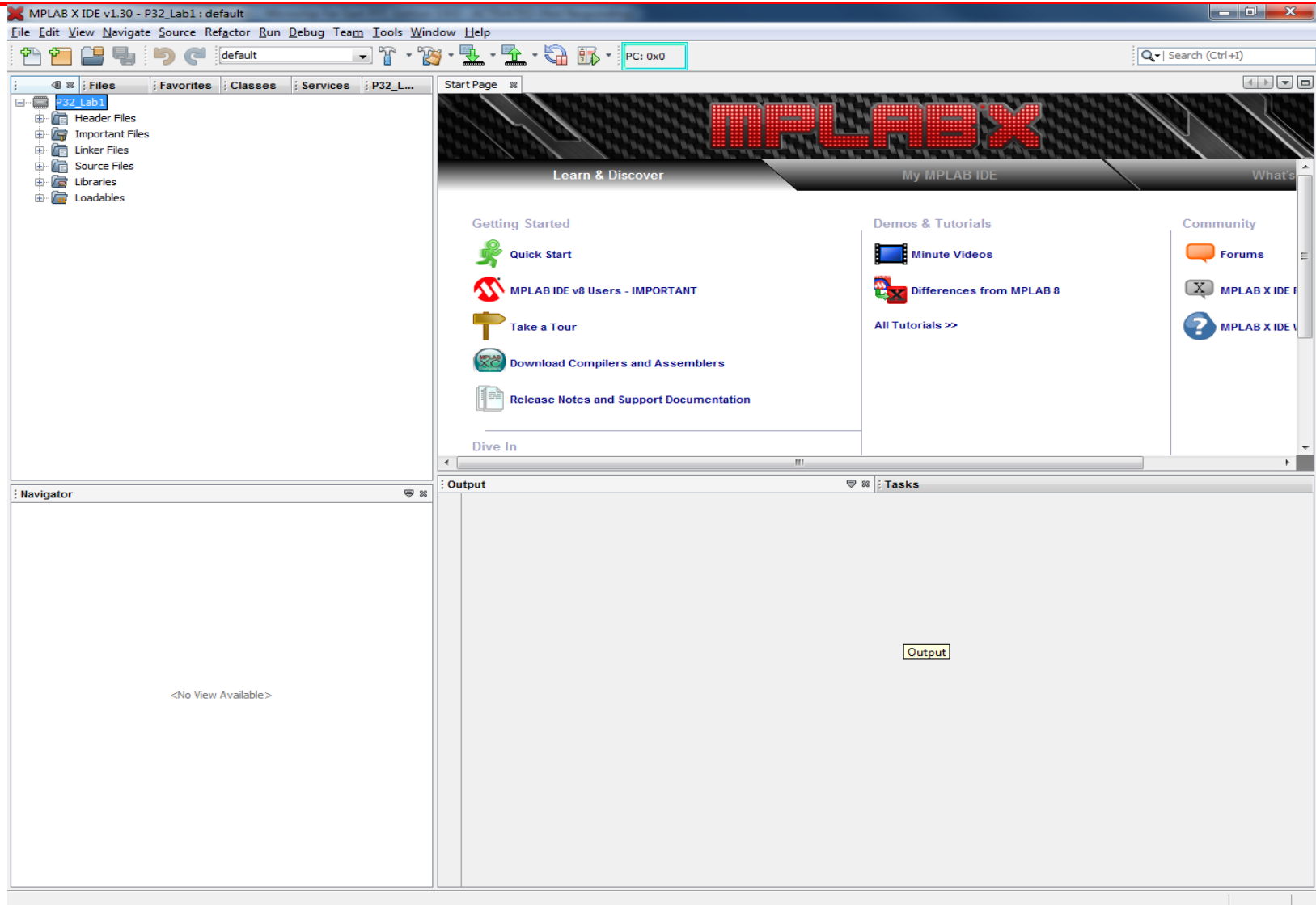
Encoding: ISO-8859-1

MPLAB X

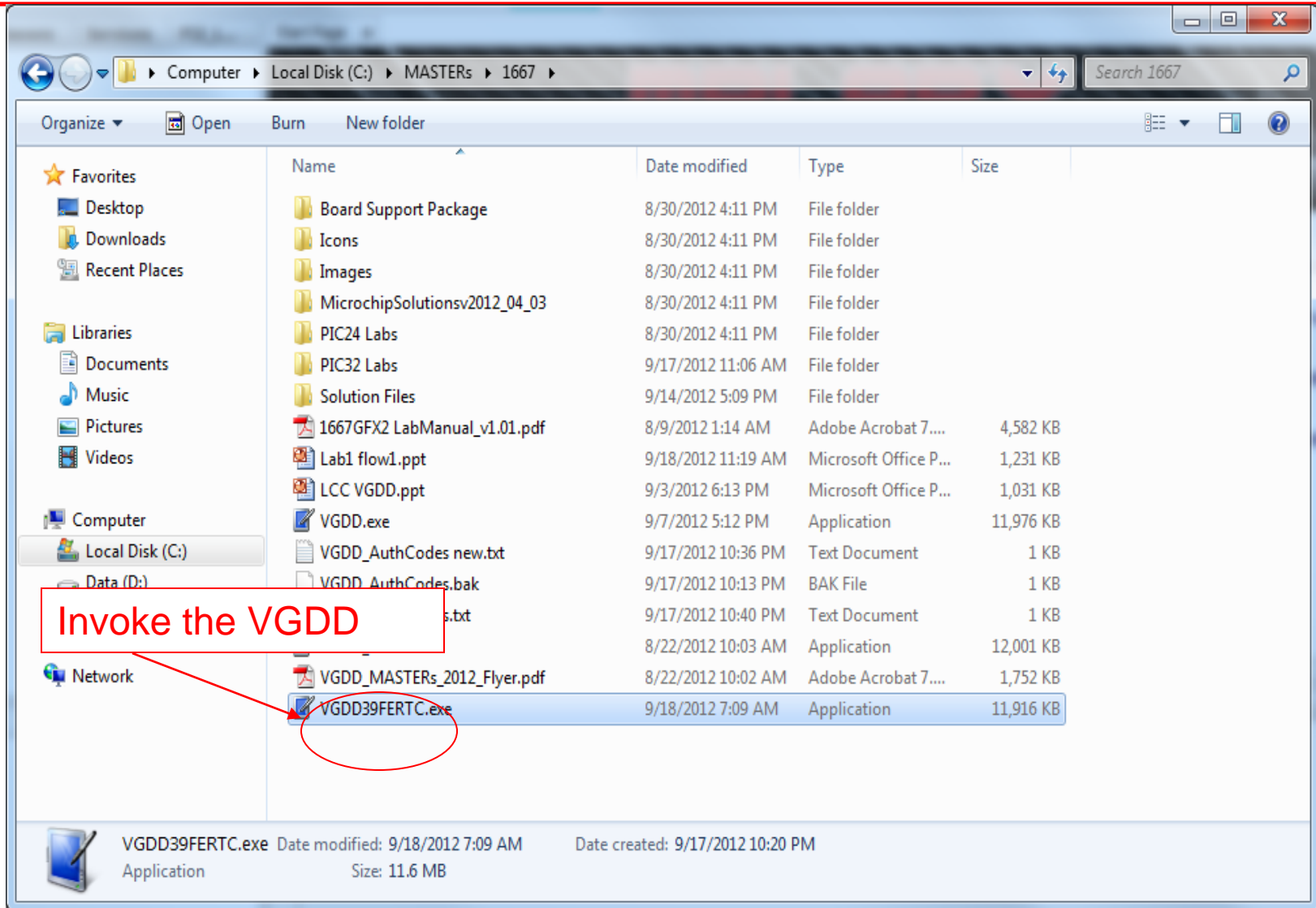
< Back Next > **Finish** Cancel Help



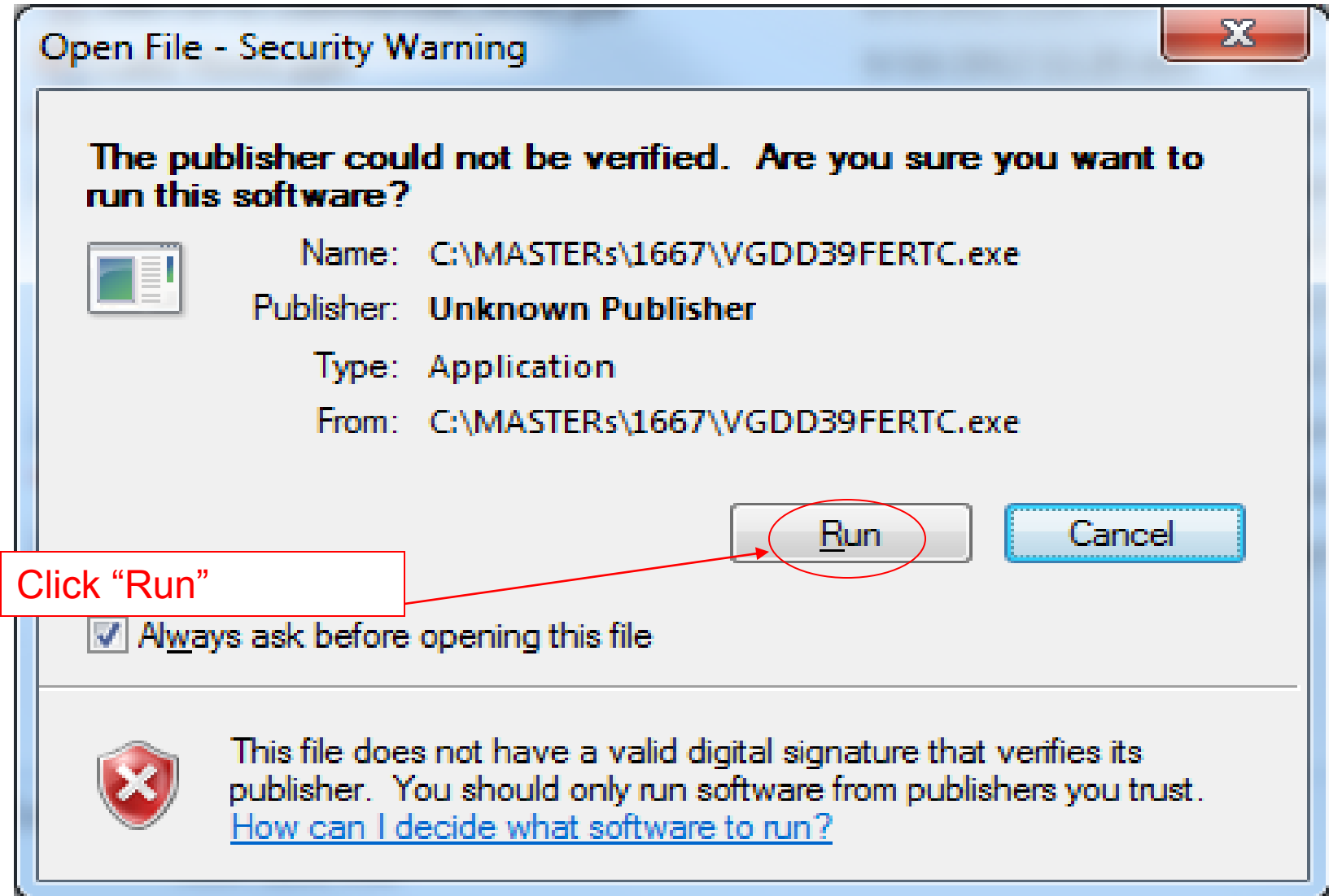
Step 1 – MPLAB(X) template for new project



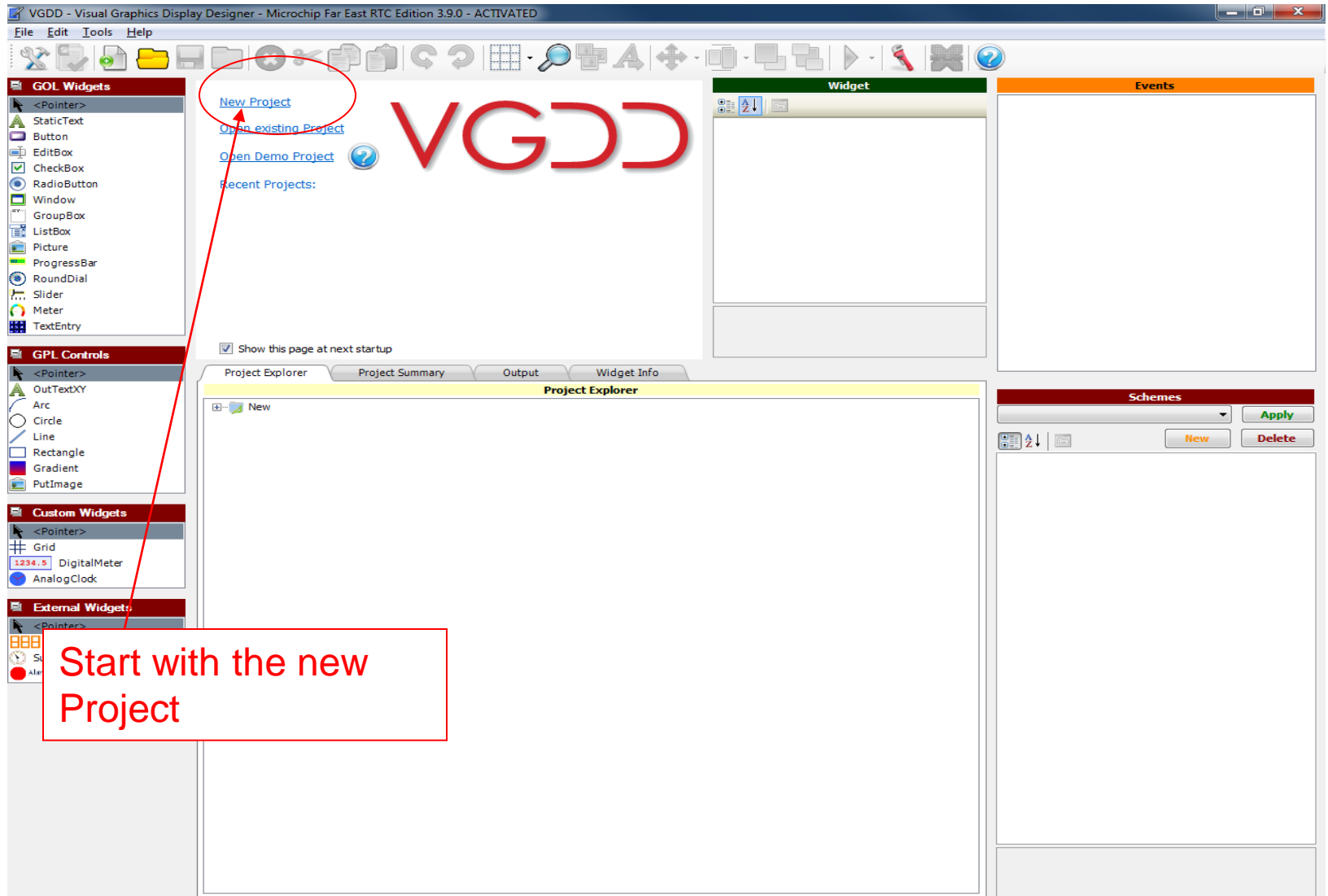
Step 2 – VGDD Code Generation



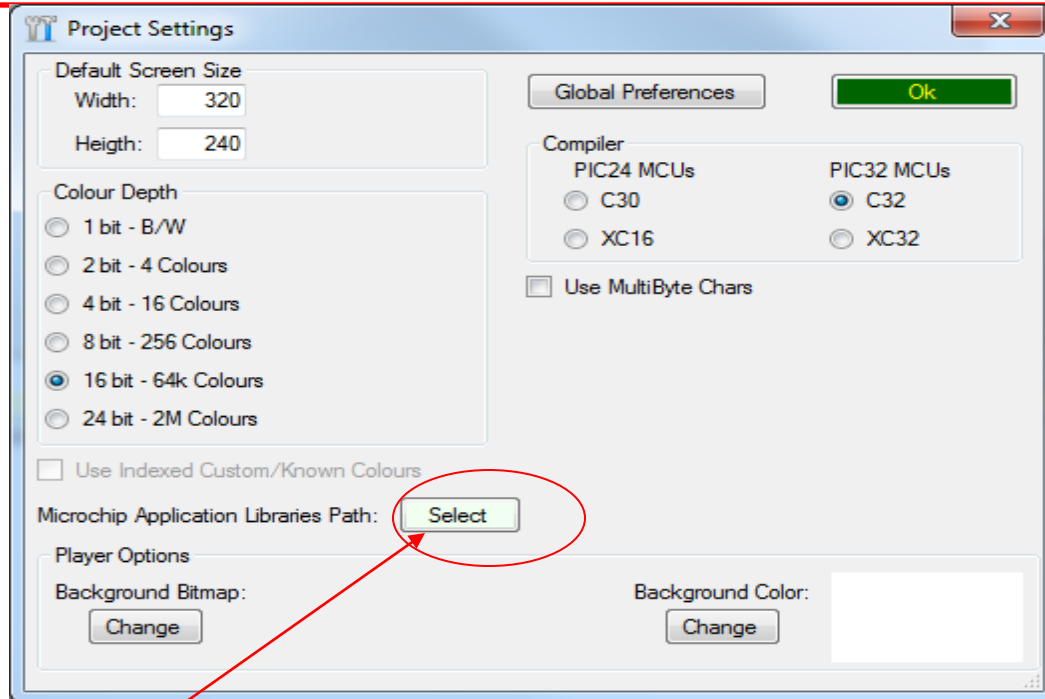
Step 2 – VGDD Code Generation



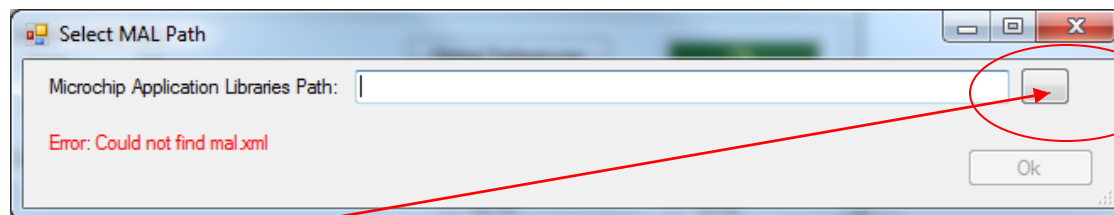
Step 2 – VGDD Code Generation



Step 2 – VGDD Code Generation



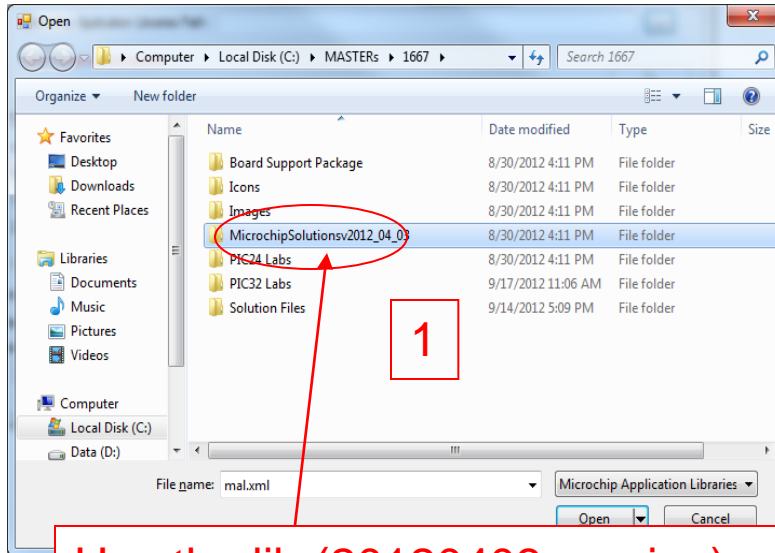
Click "Select" button to setup the Microchip Application lib path for new project



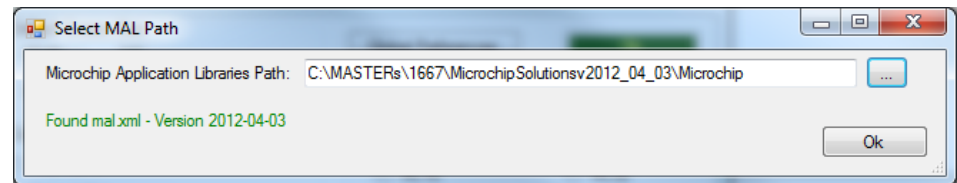
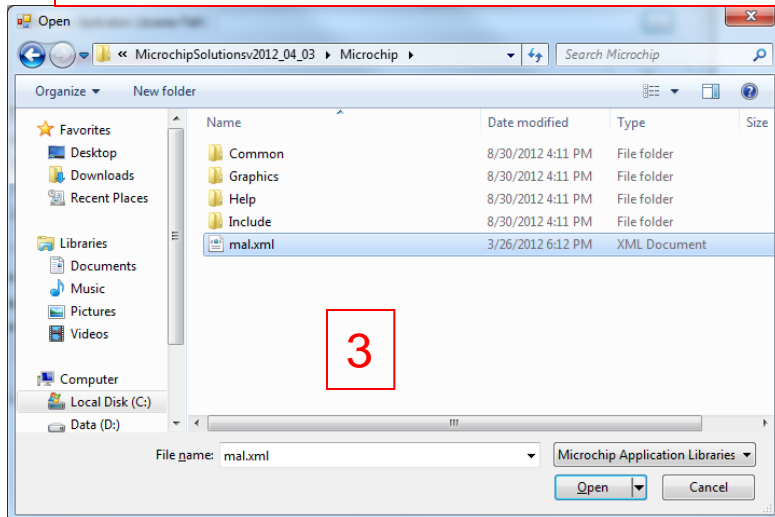
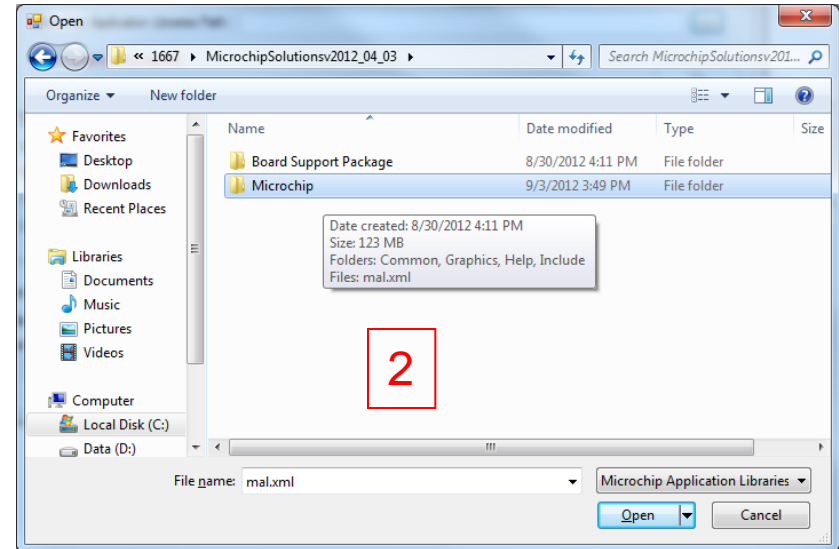
Explore the lib path



Step 2 – VGDD Code Generation



Use the lib (20120403 version)



Step 2 – VGDD Code Generation

VGDD - Visual Graphics Display Designer - Microchip Far East RTC Edition 3.9.0 - ACTIVATED

File Edit Tools Help

GOL Widgets

- <Pointer>
- StaticText
- Button
- EditBox
- CheckBox
- RadioButton
- Window
- GroupBox
- ListBox
- Picture
- ProgressBar
- RoundDial
- Slider
- Meter
- TextEntry

GPL Controls

- <Pointer>
- OutTextXY
- Arc
- Circle
- Line
- Rectangle
- Gradient
- PutImage

Custom Widgets

- <Pointer>
- Grid
- 1234.5 DigitalMeter
- AnalogClock

External Widgets

- <Pointer>
- Disp7Seg
- SuperGauge
- Alarm Indicator

Screen1

Widget

(FileName)	Screen1
(Name)	Screen1
BackColor	White
GoFree	True
Group	
Height	240
IsMasterScreen	False
Locked	True
MasterScreens	(Collection)
Overlay	False
ShowMasterScreens	False
TransparentColour	

(Name)
Indicates the name used in code to identify the object.

Events

New
Screen1

Schemes

New Apply

New Delete

GradientScheme

GradientEndColor	DarkGray
GradientLength	50
GradientStartColor	LightGray
GradientType	GRAD_NONE

Scheme

(Name)	New
Color0	169, 219, 239
Color1	38, 199, 242
ColorDisabled	182, 210, 251
Commonbkcolor	212, 237, 247
Embossdkcolor	43, 85, 135
Embossltcolor	212, 228, 247
Font	MicrosoftSansSerifRegular11
Textcolor0	7, 30, 72
Textcolor1	255, 255, 255
TextcolorDisabled	245, 245, 220

(Name)
None for this Scheme

Project Explorer

Project Explorer Project Summary Output Widget Info

New
Screens
Screen1
Fonts
MicrosoftSansSerifRegular11
Bitmaps

Select PutImage

Step 2 – VGDD Code Generation

VGDD - Visual Graphics Display Designer - Microchip Far East RTC Edition 3.9.0 - ACTIVATED

File Edit Tools Help

GOL Widgets

- <Pointer>
- StaticText
- Button
- EditBox
- CheckBox
- RadioButton
- Window
- GroupBox
- ListBox
- Picture
- ProgressBar
- RoundDial
- Slider
- Meter
- TextEntry

GPL Controls

- <Pointer>
- OutTextXY
- Arc
- Circle
- Line
- Rectangle
- Gradient
- PutImage

Custom Widgets

- <Pointer>
- Grid
- 1234.5 DigitalMeter
- AnalogClock

External Widgets

- <Pointer>
- Disp7Seg
- SuperGauge
- Alarm Indicator

Screen1*

X:110 Y:136

Widget

(Name)	PutImage1
(SizeOnScreen)	75x23
(WidgetType)	PutImage
Bitmap	
Bottom	23
Left	0
Locked	False
Right	75
Scale	1
Top	0
Zorder	0

Events

New

- Screen1
 - PutImage1

Project Explorer

- New
 - Screens
 - Screen1
 - Fonts
 - MicrosoftSansSerifRegular 11
 - Bitmaps

Schemes

New Apply

New Delete

GradientScheme

GradientEndColor	DarkGray
GradientLength	50
GradientStartColor	LightGray
GradientType	GRAD_NONE

Scheme

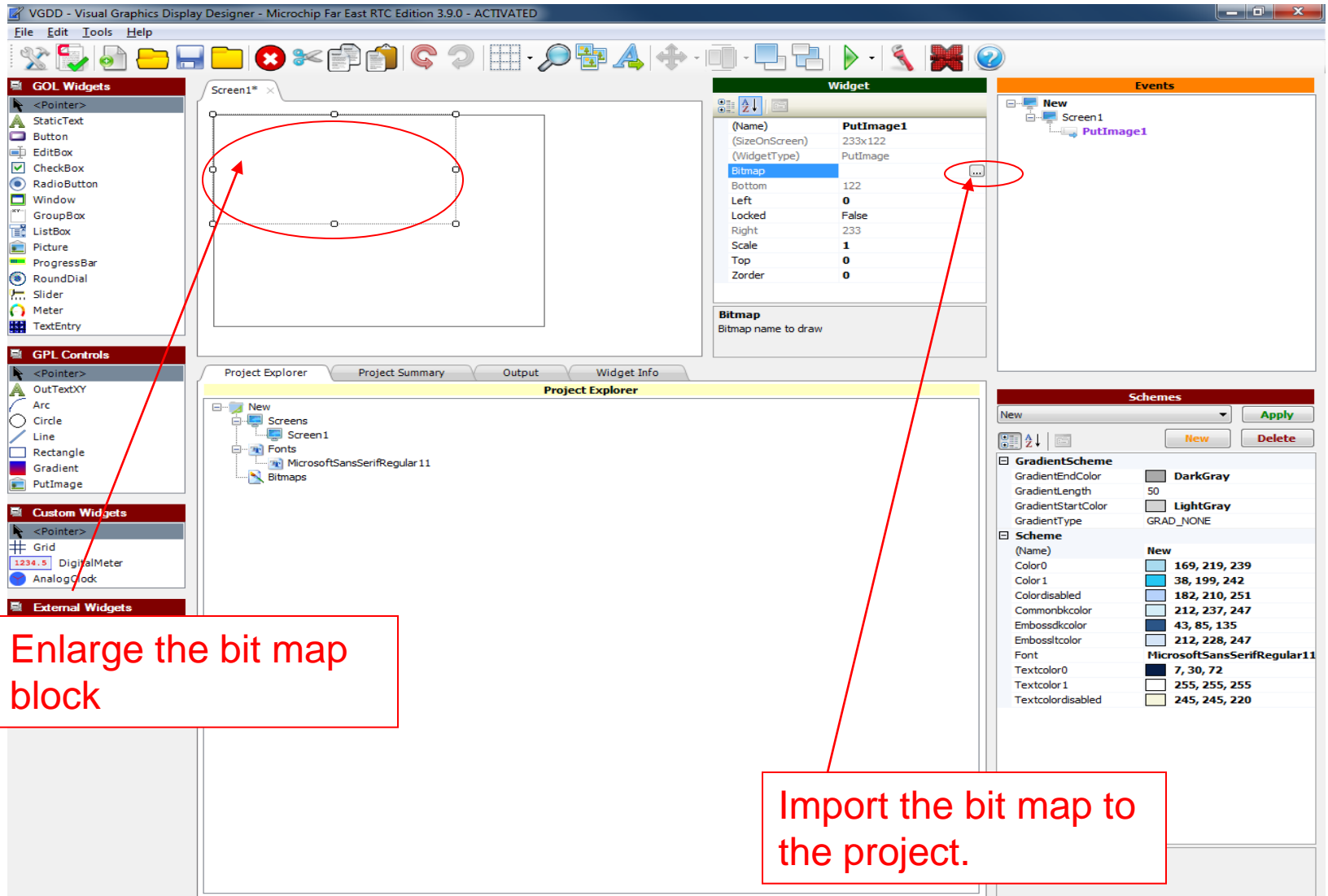
(Name)	New
Color0	169, 219, 239
Color1	38, 199, 242
Colordisabled	182, 210, 251
Commonbkcolor	212, 237, 247
Embossdkcolor	43, 85, 135
Embossltcolor	212, 228, 247
Font	MicrosoftSansSerifRegular11
Textcolor0	7, 30, 72
Textcolor1	255, 255, 255
Textcolordisabled	245, 245, 220

(Name)

Nome for this Scheme

The image block will be shown at there.

Step 2 – VGDD Code Generation



Enlarge the bit map block

Import the bit map to the project.

VGDD - Visual Graphics Display Designer - Microchip Far East RTC Edition 3.9.0 - ACTIVATED

File Edit Tools Help

GOL Widgets

- <Pointer>
- StaticText
- Button
- EditBox
- CheckBox
- RadioButton
- Window
- GroupBox
- ListBox
- Picture
- ProgressBar
- RoundDial
- Slider
- Meter
- TextEntry

GPL Controls

- <Pointer>
- OutTextXY
- Arc
- Circle
- Line
- Rectangle
- Gradient
- PutImage

Custom Widgets

- <Pointer>
- Grid
- 1234.5 DigitalMeter
- AnalogClock

External Widgets

Widget

(Name)	PutImage1
(SizeOnScreen)	233x122
(WidgetType)	PutImage
Bitmap	...
Bottom	122
Left	0
Locked	False
Right	233
Scale	1
Top	0
Zorder	0

Bitmap

Bitmap name to draw

Events

New

Screen1

PutImage1

Project Explorer

Project Summary Output Widget Info

New

Screens

Screen1

Fonts

MicrosoftSansSerifRegular11

Bitmaps

Schemes

New

Apply

New

Delete

GradientScheme

GradientEndColor

DarkGray

GradientLength

50

GradientStartColor

LightGray

GradientType

GRAD_NONE

Scheme

(Name)

New

Color0

169, 219, 239

Color1

38, 199, 242

ColorDisabled

182, 210, 251

Commonbkcolor

212, 237, 247

Embossdkcolor

43, 85, 135

Embossltcolor

212, 228, 247

Font

MicrosoftSansSerifRegular11

Textcolor0

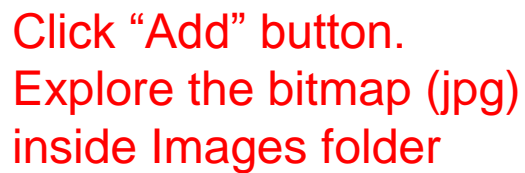
7, 30, 72

Textcolor1

255, 255, 255

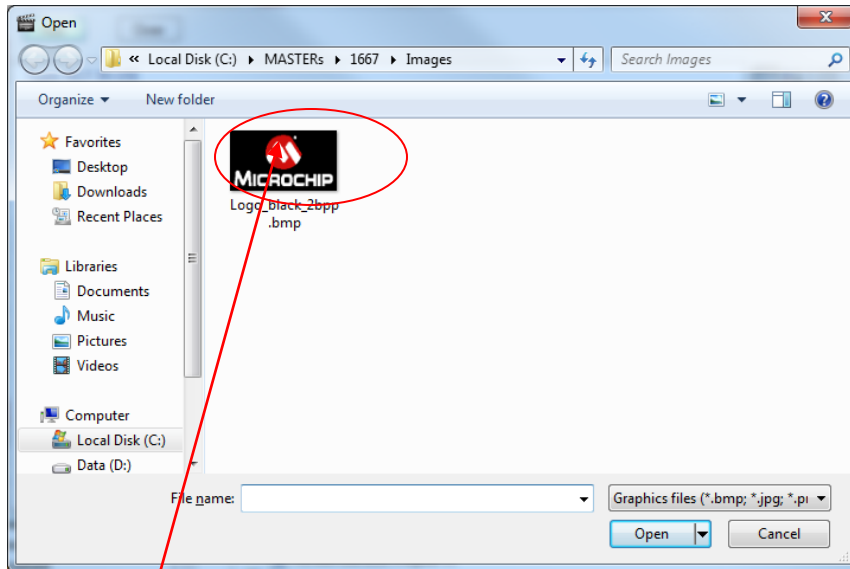
TextcolorDisabled

245, 245, 220

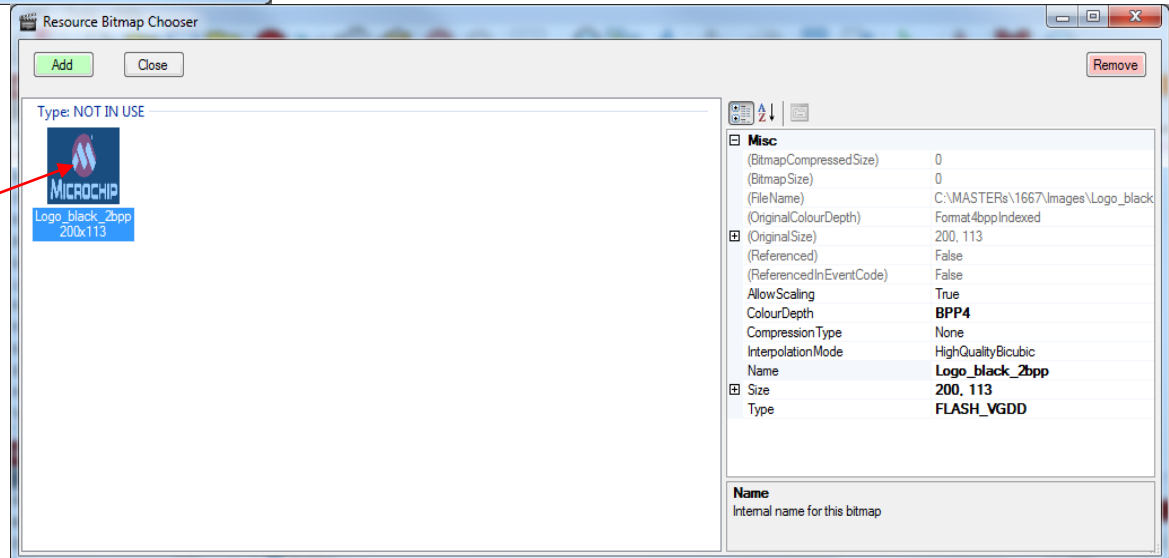




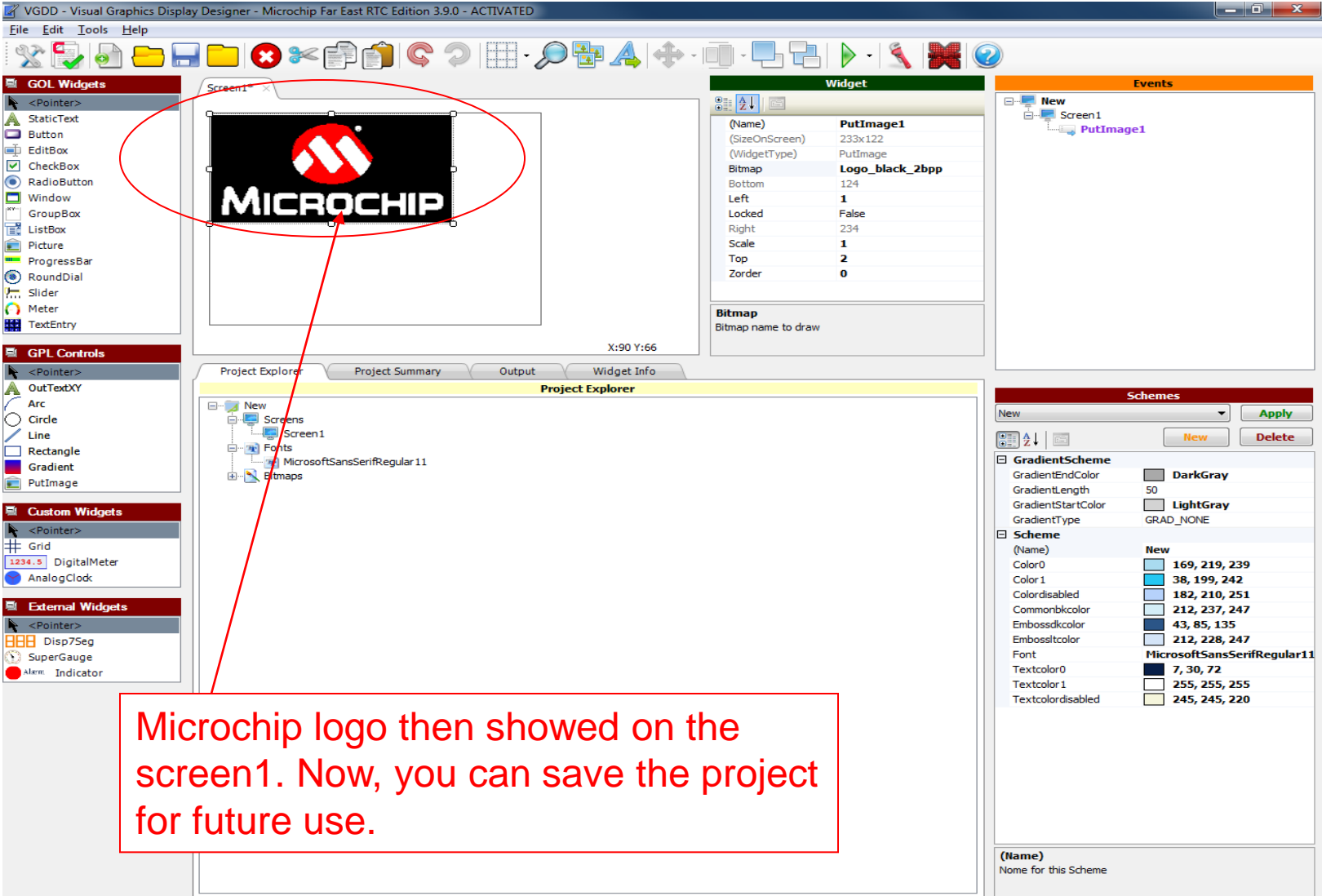
Step 2 – VGDD Code Generation



Select the Microchip logo. Then, double click the logo icon



Step 2 – VGDD Code Generation



VGDD - Visual Graphics Display Designer - Microchip Far East RTC Edition 3.9.0 - ACTIVATED

File Edit Tools Help

GOL Widgets

- <Pointer>
- StaticText
- Button
- EditBox
- CheckBox
- RadioButton
- Window
- GroupBox
- ListBox
- Picture
- ProgressBar
- RoundDial
- Slider
- Meter
- TextEntry

GPL Controls

- <Pointer>
- OutTextXY
- Arc
- Circle
- Line
- Rectangle
- Gradient
- PutImage

Custom Widgets

- <Pointer>
- Grid
- DigitalMeter
- AnalogClock

External Widgets

- <Pointer>
- Disp7Seg
- SuperGauge
- Alarm Indicator

Widget

(Name)	PutImage1
(SizeOnScreen)	233x122
(WidgetType)	PutImage
Bitmap	Logo_black_2bpp
Bottom	124
Left	1
Locked	False
Right	234
Scale	1
Top	2
Zorder	0

Events

New

Screen1

PutImage1

Schemes

New

Apply

New

Delete

GradientScheme

GradientEndColor	DarkGray
GradientLength	50
GradientStartColor	LightGray
GradientType	GRAD_NONE

Scheme

(Name)	New
Color0	169, 219, 239
Color1	38, 199, 242
ColorDisabled	182, 210, 251
Commonbkcolor	212, 237, 247
Embossdkcolor	43, 85, 135
Embossltcolor	212, 228, 247
Font	MicrosoftSansSerifRegular11
Textcolor0	7, 30, 72
Textcolor1	255, 255, 255
TextcolorDisabled	245, 245, 220

Project Explorer

New

Screens

Screen1

Fonts

MicrosoftSansSerifRegular11

Bitmaps

X:90 Y:66

Project Summary

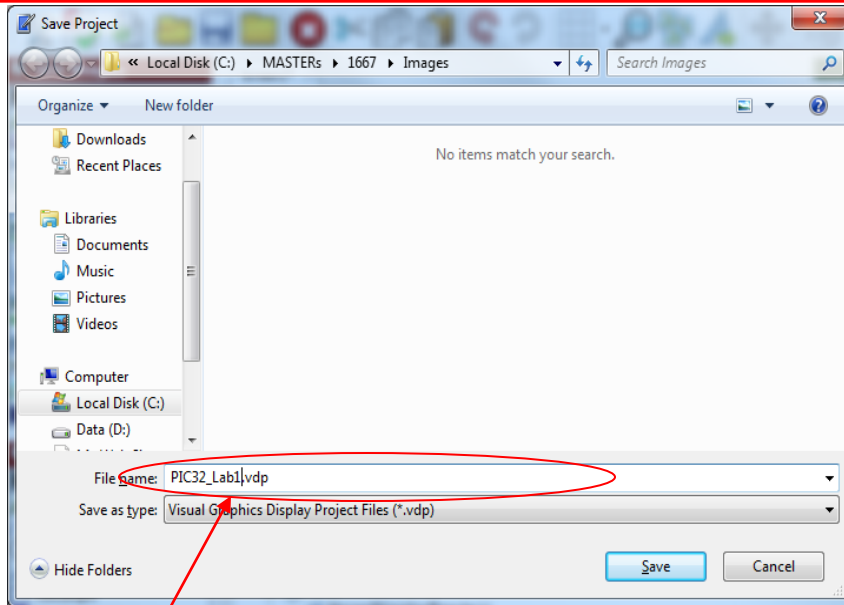
Output

Widget Info

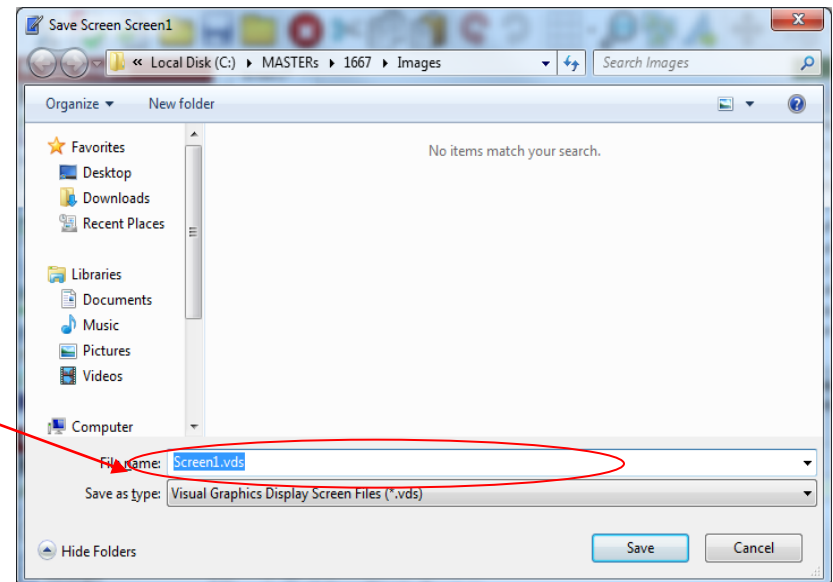
Microchip logo then showed on the screen1. Now, you can save the project for future use.



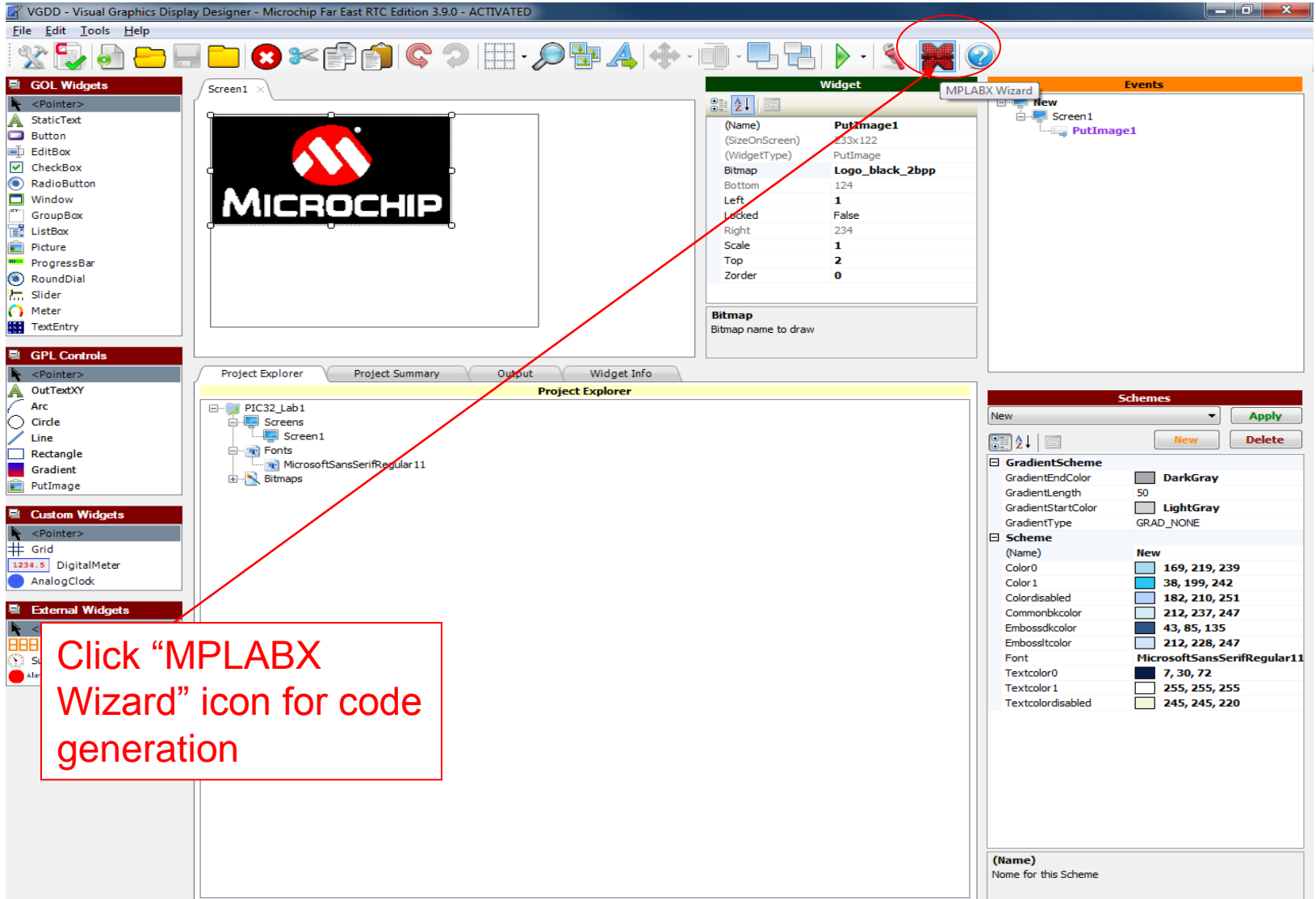
Step 2 – VGDD Code Generation



Save the Project



Step 2 – VGDD Code Generation



Click "MPLABX Wizard" icon for code generation

Widget Panel:

(Name)	PutImage1
(SizeOnScreen)	253x122
(WidgetType)	PutImage
Bitmap	Logo_black_2bpp
Bottom	124
Left	1
Locked	False
Right	234
Scale	1
Top	2
Zorder	0

Bitmap
Bitmap name to draw

Project Explorer:

- PIC32_Lab1
 - Screens
 - Screen1
 - Fonts
 - MicrosoftSansSerifRegular11
 - Bitmaps

Schemes Panel:

GradientScheme

GradientEndColor	DarkGray
GradientLength	50
GradientStartColor	LightGray
GradientType	GRAD_NONE

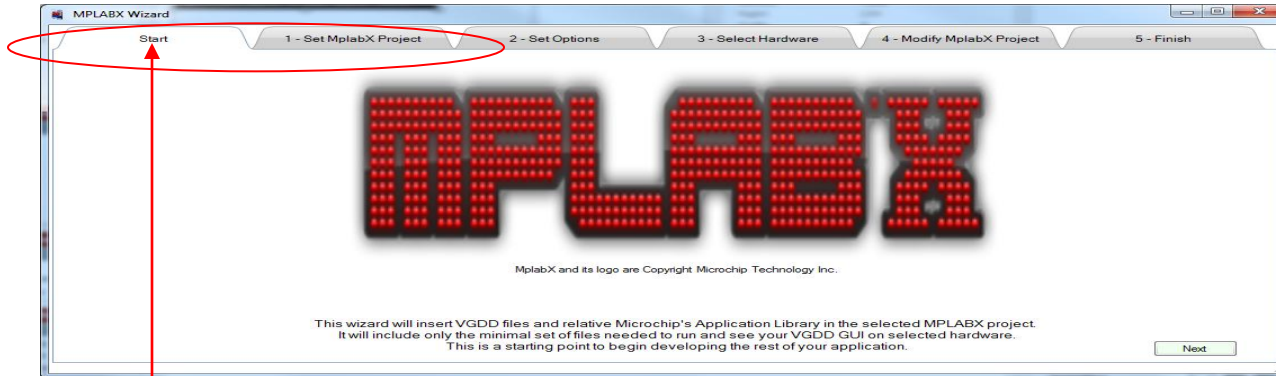
Scheme

(Name)	New
Color0	169, 219, 239
Color1	38, 199, 242
ColorDisabled	182, 210, 251
Commonbkcolor	212, 237, 247
Embossdkcolor	43, 85, 135
Embossltcolor	212, 228, 247
Font	MicrosoftSansSerifRegular11
Textcolor0	7, 30, 72
Textcolor1	255, 255, 255
TextcolorDisabled	245, 245, 220

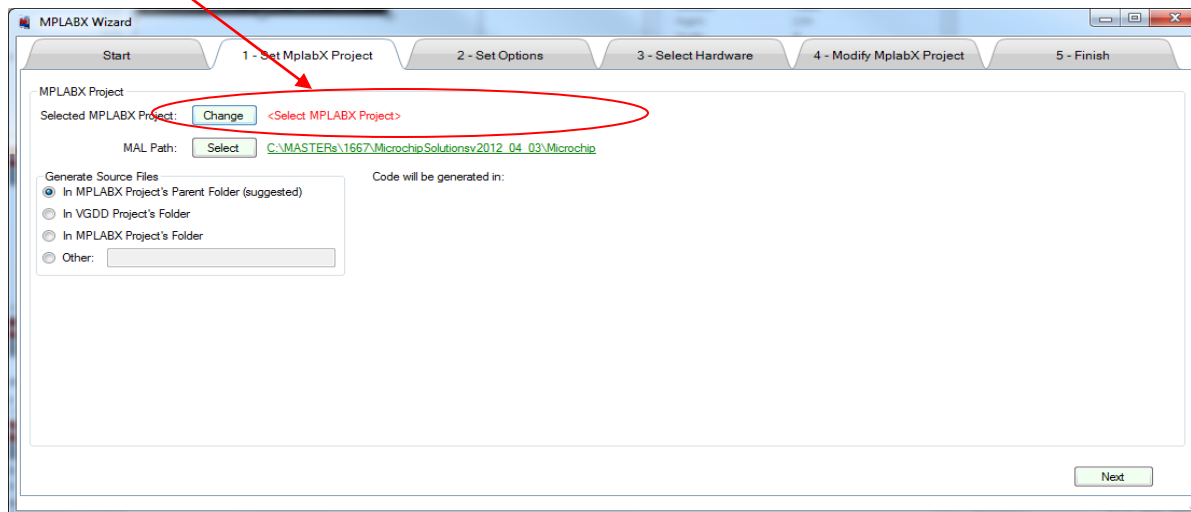
(Name)
None for this Scheme



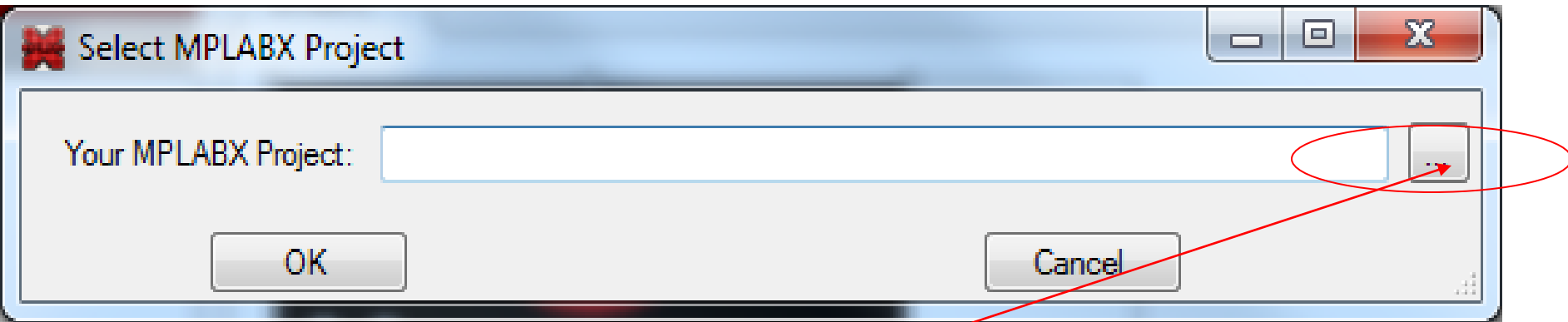
Step 2 – VGDD Code Generation



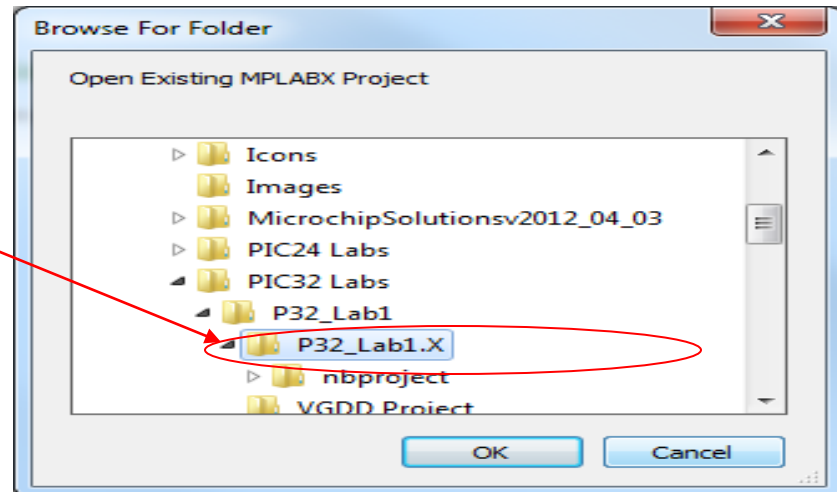
Start to setup the code at the project folder you want



Step 2 – VGDD Code Generation



Explore MPLABX project (P32_Lab1.X), which was already made in Step 1.





Step 2 – VGDD Code Generation

The screenshot shows the MPLABX Wizard window at Step 1: Set MplabX Project. The window has a tabbed interface with tabs for Start, 1 - Set MplabX Project, 2 - Set Options, 3 - Select Hardware, 4 - Modify MplabX Project, and 5 - Finish. The '1 - Set MplabX Project' tab is active. It contains the following fields and options:

- MPLABX Project:** Selected MPLABX Project: [Change](#) C:\MASTERs\1667\PIC32 Labs\VP32_Lab1\VP32_Lab1.X
- MAL Path:** [Select](#) C:\MASTERs\1667\MicrochipSolutionsv2012_04_03\Microchip
- Generate Source Files:**
 - ☒ In MPLABX Project's Parent Folder (suggested)
 - ☐ In VGDD Project's Folder
 - ☐ In MPLABX Project's Folder
 - ☐ Other:
- Code will be generated in:** [C:\MASTERs\1667\PIC32 Labs\VP32_Lab1\](#)

A 'Next' button is located at the bottom right of the window.

The screenshot shows the MPLABX Wizard window at Step 2: Set Options. The window has a tabbed interface with tabs for Start, 1 - Set MplabX Project, 2 - Set Options, 3 - Select Hardware, 4 - Modify MplabX Project, and 5 - Finish. The '2 - Set Options' tab is active. It contains the following options:

- Generate Skeleton files:**
 - ☒ VGDDmain.c & VGDDmain.h
 - ☒ GraphicsConfig.h
 - ☒ HardwareProfile.h
- Modify Skeleton files:**
 - ☒ VGDDmain.c & VGDDmain.h
 - ☒ GraphicsConfig.h
 - ☒ HardwareProfile.h
- Available Options:**
 - ☐ Include PutImageFromSD support
 - ☐ Include Flash Memory Programmer support
 - ☐ Use 16 bit Parallel Port
 - ☐ Use 8 bit Parallel Port

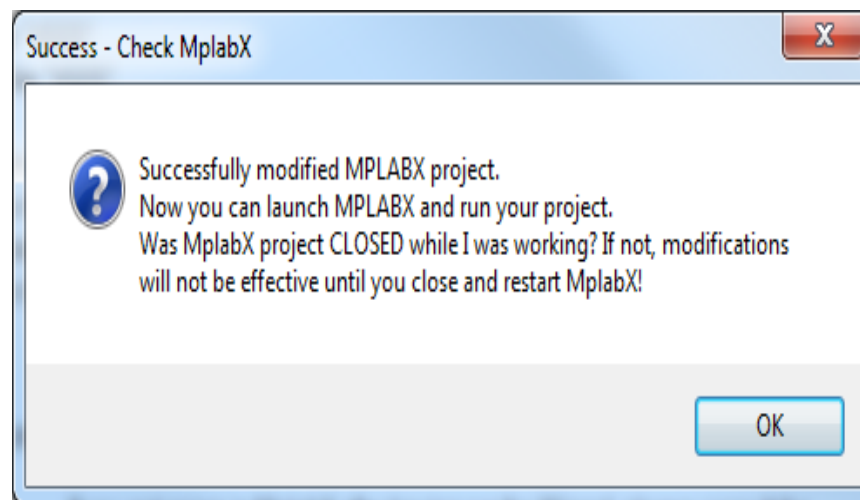
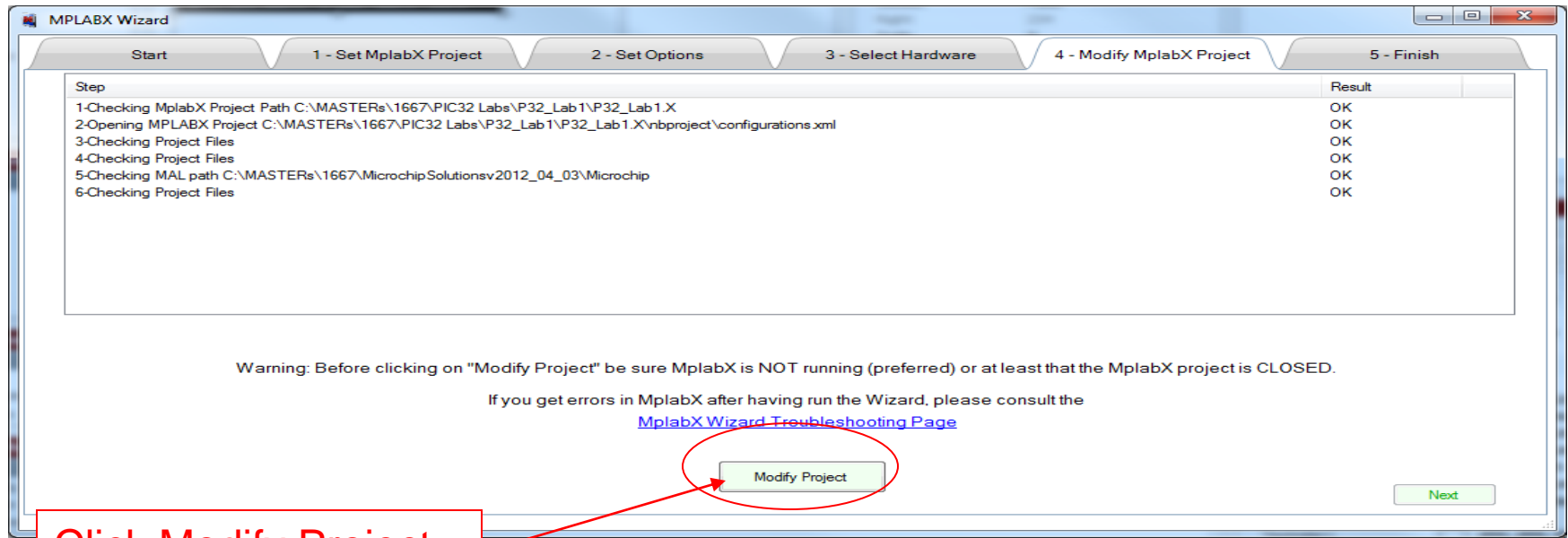
A 'Next' button is located at the bottom right of the window.

Step 2 – VGDD Code Generation



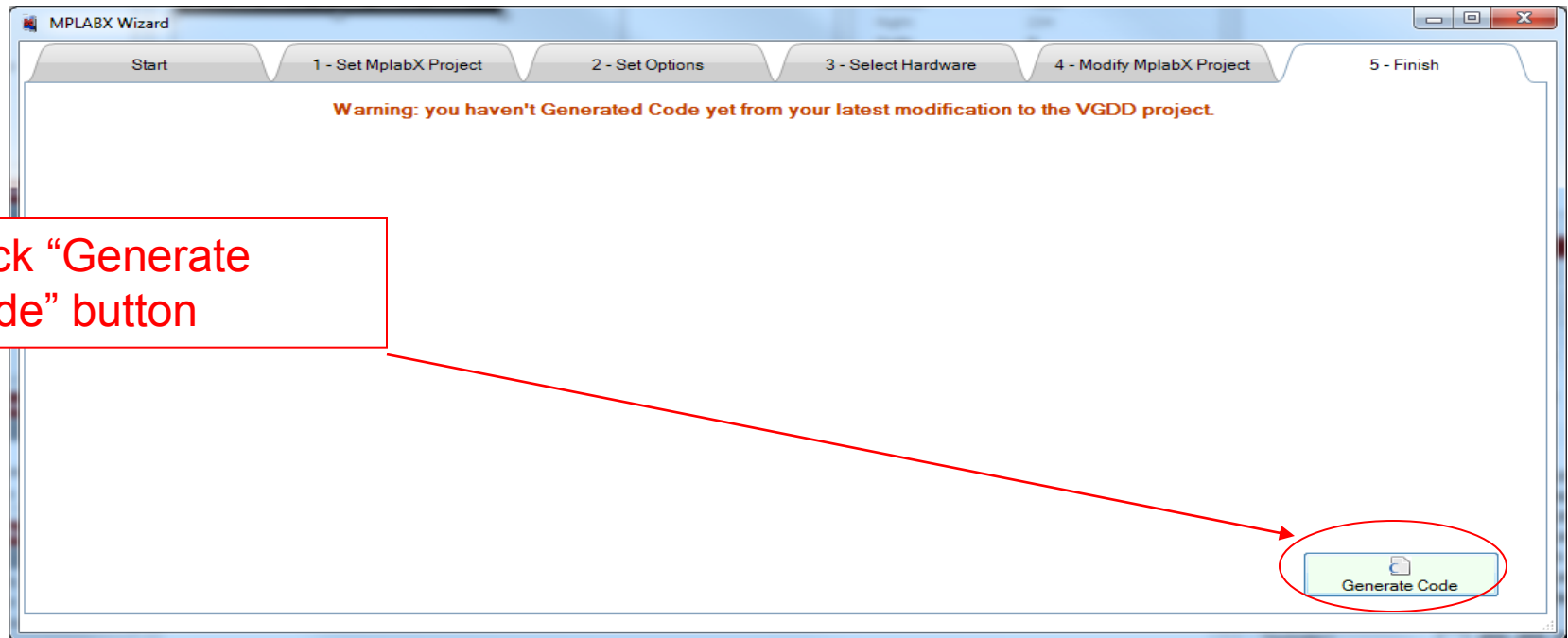


Step 2 – VGDD Code Generation



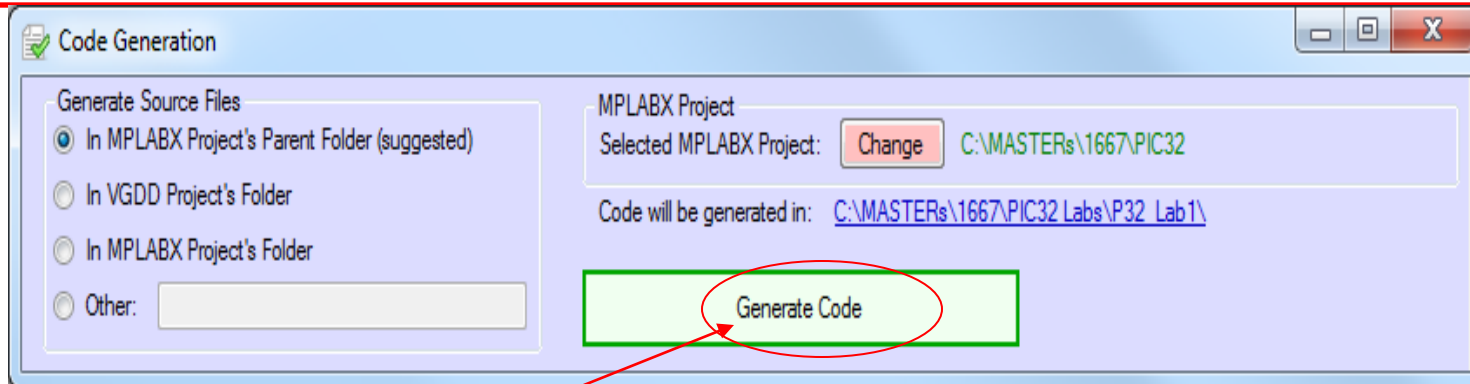


Step 2 – VGDD Code Generation

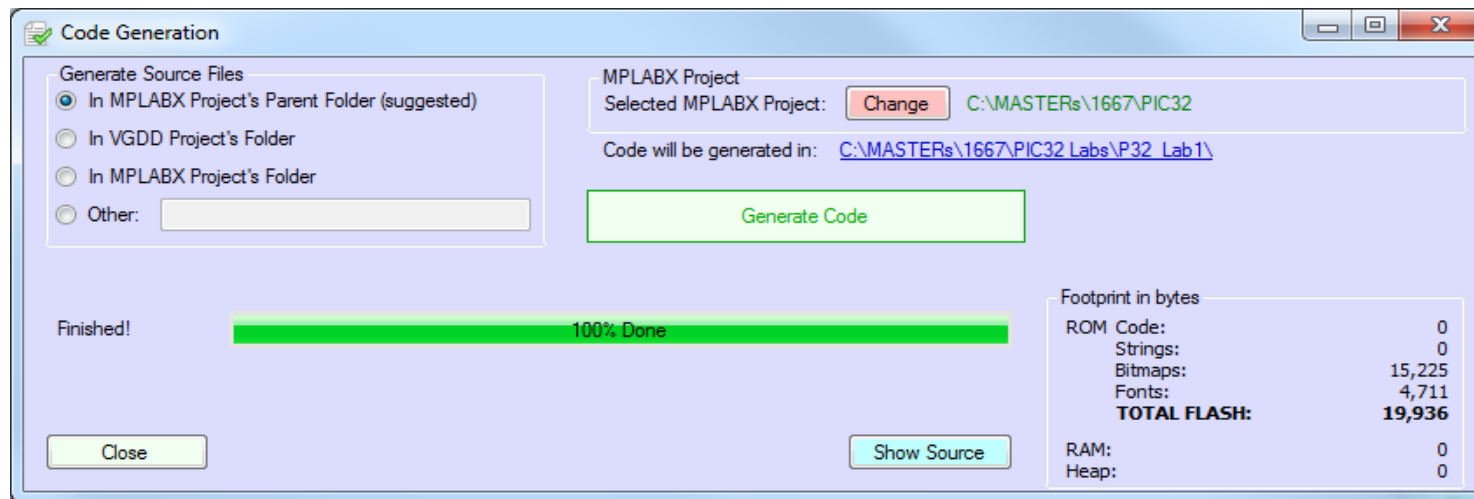


Click "Generate Code" button

Step 2 – VGDD Code Generation



Click "Generate Code" button



Now, you can connect the dev tools hardware to PC as next page and go back to MPLABX PIC32 Lab1 project.

Step 3 – Code verification by MPLABX



Step 3 – Code verification by MPLABX







Step 3 – Code verification by MPLABX





The End