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e1: Video - Linux Setup

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Hi and welcome to the next topic of this module. In this topic, we will setup software for Linux based operating system such as Ubuntu and Linux Mint.

Now if you are using Mac or Windows Operating system then please skip this topic and directly go to the next topic.

**MM**

So in this topic, we will install Java.

**MMM**

Now to setup Java in your system, you need to download **MMM** JDK.

Well, JDK stands for Java Development Kit. And this JDK contains JRE, which stands for Java Runtime Environment.

Basically, we need just JRE to run Eclipse IDE in our system. But for the sake of simplicity, I will download the entire JDK which will give us JRE. Fine?

And to install JDK in our system, we will run a few commands in the terminal window.

So let’s get started.

**DEMO**

From your taskbar, search for the terminal.

The installation process requires an active internet connection. So make sure you have an active internet connection.

**SHOW SCREENSHOT**

Now just below the video, you will find a few commands to run. Just copy the first command….

**DEMO**

And paste it in your terminal. This command will add the PPA repository and from this repository we will get and install java. Once you do it, hit enter.

It will ask for the password, associated with your username in your system. Type your password and hit enter.

It will ask you to press enter to continue. Just do it.

Then let’s clear the screen by running the **clear** command. Type clear and hit enter. Well, while running commands I usually like to have clean terminal window.

**SHOW SCREENSHOT**

Now again, just below the video, you will find the second command… just copy it.

And paste it here. This command will update the required repositories in your system. Hit enter.

Once it is done, clear the screen **SHOW SCREENSHOT** and copy the third command. Now depending on the time you are watching this video, this command could be different in your case. So whatever command you can see in your case just below the video, just copy it.

**DEMO**

And paste it in your terminal. Hit enter.

It will ask you to press Y to continue, just do it.

Then using the right arrow key on your keyboard, select this OK and press enter.

Then again using your keyboard, select this YES. It is just agreeing to the license agreement, that’s all.

Once you select it, press enter again.

Once it is done, clear the screen.

**SCREENSHOT**

Now let’s copy this last command. Again in your case it could be different, so dont worry about it. Just copy it

**DEMO**

And paste it here. Press enter.

Well, this command will just make sure the java version that we just installed is set as the default version in our system.

It says the default version set in the system is installed is already the latest one.

To verify the java version yourself, just type **java -version** and hit enter.

This is the version installed in my case. In your case it might be different, so please dont worry about that.

So yes that’s all for this video.

SLIDE UP NEXT

Up next we will install the required compiler in our system.

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e2: Video - Compiler Installation

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In this video, **MM** we will install the required compiler for Linux.

**MMM**

Now as mentioned earlier, we are going to use GCC compiler.

And

**MMM**

We will install GCC compiler via Build Essential tools. Well, this contains a set of tools that are commonly used in the Linux operating system. So if we install it, we will automatically get GCC compiler.

So let’s get started.

**DEMO**

We are going to install build-essential tools by running commands on the terminal. So just open your terminal and make sure you have an active internet connection.

**SCREENSHOT**

And just below the video, you will find a few commands.

Just copy the first command, to update the system repository list.

**DEMO**

And paste it in your terminal. Hit enter.

It will again ask you for the password, enter the password, and hit enter.

**SCREENSHOT**

Next, copy the next command.

**DEMO**

And run it in your terminal.

Okay, so we are done.

To verify, if GCC is installed or not.

Type gcc --version

So in my case, this is the version, and in your case, it could be different.

Perfect.

So yes that’s all for this video.

**UP NEXT**

In the next video, we will download the Eclipse IDE.

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e3: Video - Eclipse IDE Download

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Hi in this video, **MM** we will download the Eclipse IDE.

**DEMO**

Just go your browser and enter this URL. Well, you will get this URL just below the video. Just copy it, paste it here and open it.

You will land on this page.

Here you will find the download option for LINUX operating system. Click on it.

And click on download.

Select your download location and download it.

Just wait for the download to complete.

Once your download is complete, move to the next video

UP NEXT

Where we will complete the eclipse installation process.

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e4: Video - Eclipse IDE Installation

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Let us now proceed and **MM** complete the Eclipse IDE installation process.

**DEMO**

This is the file which I downloaded in the last video.

Let’s write click and select EXTRACT HERE. You will get this folder, just open it.

Here you will find this eclipse-inst file. This is basically the eclipse installer.

Let’s right-click and run it. Now again, during the installation process, you must have an active internet connection.

When you get this window, select **Eclipse IDE for C/C++ Developers**.

Well, this will be the installation location of eclipse. Make sure you note down this location, we will need it later.

And by default, it will detect the path to installed Java in your system.

Click on INSTALL.

Accept the license.

here as well, click on accept.

It will then show you this window. Just select these two certificates and click on accept selected.

Okay, so in the end, if you get this launcher prompt then it means eclipse has been successfully installed in your system.

Congratulations.

UP NEXT

In the next video, we will create our first C project using Eclipse IDE. See you there.

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e5: Video - Creating First C Project

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**Workspace name: c-training**

**Project name: learn-programming**

**Source file: learn-programming.c**

In this video, we will create our first project in C. Let’s get started.

**DEMO**

So far we have completed the installation process. Now, if you have by mistake closed this prompt then you can just launch your Eclipse IDE again.

So I will go to File Explorer, go to home, there I have eclipse.

Now you need to navigate to the folder where your eclipse has been installed. Remember in the last video I told you to note down the path to the eclipse installation folder.

Within this folder you will find another folder, there you will find this eclipse executable file. Just double click to launch it.

Now for simplicity, you can pin this file in your **TASKBAR**, so that next time you don’t have to navigate to your installed eclipse folder.

When you launch it, it will show you the path to the default workspace. Now workspace is a folder where we put our C and C++ projects. This is the default workspace. Let’s setup out own workspace.

For that go to browse, in my desktop, I will create a new folder named **c-training**.

Now throughout the training, whenever we will give names to files and folder we will use all words in the small case and join them using a hyphen. Well, this will ensure consistent naming convention for all the files and folders throughout the training. Fine.

Just create the folder and make sure it is selected. And click on OK.

Once done, launch the workspace.

For the first time, it might take some time to launch eclipse.

Welcome screen:

* This is the welcome screen. I will just close it.
* So this is how our eclipse IDE looks like.

Let’s not waste time and let’s create our first project in C.

LEFT PANEL UNDER PROJECT WINDOW

Well, on the left you will find a few options to create a new project.

If you move your cursor at the top. You will find the menu bar.

If you go to file → new, you will find the same options for creating a new project. Among these, there is an option to create a new C/C++ project. Creating a C project using this option is bit tricky. Since this is a beginner Training I will use this simple option “Create a new project” Let’s click it.

**You will get this wizard in front of you.**

Now, Expand this C/C++

There you will find this C project. Select it. Click on next.

**NEXT WIZARD**

Now here, you need to enter the name of your project.

**TVT** Name it learn-programming

Since our objective is to learn the fundamentals of C programming, so let’s name it somewhere close to our objective such as learn-programming

So this will be our project name.

Then here you will find **executable**, just expand it and you will get two option, the first is Empty project. If you create a C project using this option, then your project won’t contain any default source code.

And if you select HELLO WORLD ANSI C PROJECT, then it will by default create a C program file for you having some code. So let’s go for this option. And then on the right you will find two compilers.

Make sure you select Linux GCC compiler which we installed just now.

Then click on FINISH.

This will create your new project and it will automatically open a file in front of you which contain some code. Well, right now don’t worry about them. I will discuss them shortly.

But right now I want you to remove these code written in this file completely. And just below the video, you will find a link. I want you to open that link. There you will find some code. Just copy those code and paste it in this file.

Like this.

Now throughout this training, wherever required I will ask you to go to the link present below the video and get the required code which will be needed to get started with a particular topic.

This will make your learning experience better. So instead of typing the same kind of code, again and again, you can just focus on learning a new concept in each video. Fine?

Now, please don’t worry about the code written in front of you. We will discuss about writing programs throughout the training. So before that, it is very important for us to know about the tools and functionalities of our IDE.

So in the next video, we will explore basic functionalities of Eclipse IDE.

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e6: Video - Exploring Eclipse IDE

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It is very important for a programmer to know about the basic functionalities of the IDE which he is using. **MM** So in this video, we will explore how to use Eclipse IDE and do the basic setups.

**DEMO Eclipse**

**LINUX:** Now first thing first, right now by default my eclipse has Light theme. In your case, the eclipse might have a dark theme. So let us first set the theme of our IDE that suits our eyes.

Go to **Window > Preferences**, Expand **GENERAL** and click on **Appearance**. Now make sure you do not expand this **Appearance**. Just click it and on the right, you will find a dropdown to select the theme. You can select a theme of your choice. My preference is this **Light theme based on Mac Operating system**. So I will select it and then click on **Apply**. And it will ask you to restart eclipse to apply theme change in your entire IDE. Click **Ok**. and then **apply and close**.

So I will now go to FILE > and click Restart. It might ask you to save the unsaved changes. Click Save.

Once your Eclipse restarts it again show you the welcome screen. If you don’t want to see this screen each time you start eclipse, then you can simply uncheck this option. Fine? And then close it. Great!

Now this entire eclipse window in front of you is known as **Workbench**.

In this workbench, we have a lot of tools that will help us to write programs. I will walk you through the most important ones.

In this workbench, on to the left, you will find this **Project Explorer View**. That contains our project. Now in case if you are unable to see this **Project Explorer** here, then go to **WINDOW > SHOW VIEW > Select PROJECT EXPLORER**. You will get it here. Fine?

Now if you expand your project, it contains a **src** folder. Well, **src** stands for **SOURCE**. And this source folder contains our program file whose name is the same as that of the project name. If you double click this file, it will open the file in the editor area of the workbench. I.e. in the centre. And this file contains some code.

Now, this file present under the source folder is known as SOURCE FILE. and this file contains some code --- which is known as SOURCE CODE. This is something you need to remember.

CALLOUT

This is a source file, and this is source code. Now, the file that contains a C program always has an extension of .c. So this source file, if you notice has a file extension of .c. Fine? Again you need to remember this.

Well, right now the size of the font is very small. So I will increase the font size of my editor.

I will again to WINDOW > PREFERENCES. Under General, expand APPEARANCE. There you will find COLORS AND FONTS. Just select it and then at the top you will find BASIC. Just expand it. Here you will find TEXT FONT. Select it and click on edit.

**MAKE IT 16 or as per your convenience.**

You can also change the font family or typeface as per your wish. But I will keep it the default.

Then click on APPLY.

Now, along with this, I want you to do one more thing. Under DEBUG you will find, CONSOLE FONT. Now when we changed the TEXT FONT, then the console font was automatically changed to 16. If in your case it is not changed, then you can edit it from here.

Now what is CONSOLE FONT, I will let you know shortly. Once you make changes, click on APPLY. And then APPLY and CLOSE.

Great. So now our code quite visible.

Now what about the console font which I also changed just now. Well, just below the editor, you will find a few default tabs opened for you. These are basically Problems View, Tasks View, Console View and Properties View. You might have other tabs as well, but let’s focus on these four for now.

In case you can’t see these 4 tabs here, then go to **WINDOW > SHOW VIEW** and here one by one select the Views which you cannot see opened here at the bottom. Fine?

**TTT OPEN CONSOLE TAB**

Now as we proceed with this training, you will gradually understand the significance of these Views. But since we have increased the font size of CONSOLE text, then let me brief you little about this.

Well, we will run our C program and try to print something in the output then, you will get all the output in this CONSOLE tab. So the text here in this View should be visible right? So that is why I increased the console text size. Fine?

Now to the right of our workbench, you will find this outline View and a few other tabs. Well, we don’t need them for now, so I will just minimize these tabs for now. At any point of time if we need them, then I can just restore this by RESTORE icon. Fine? But for now, let’s minimise it.

Great!

Now one last thing, at the top of the workbench, we have workbench Toolbar. Well, this toolbar contains a lot of buttons, that will help us to RUN our program, DEBUG our program, save the changes made to our file and so on and so forth.

As we proceed with this training we will gradually explore how to use them. So for now, let’s not worry about them.

So yes that’s pretty much it for this video.

**UP NEXT**

Up next, we will learn to write and explore our first project in C. See you there.