

Daily Assessment format

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Name: Jyoti K Dhanu

UEN 4ALITE037

Course: PCB design using KiCad

Topic: Mounting holes, create a library
create a PCB footprint component

GitHub
Repository: jyoti-courses

forenoon session details

Report

Mounting holes:

Mounting holes are on every PCB design, but there is very little documentation about this subject matter. A google or wikipedia search on "mounting holes" renders us solutions to the PCB designer. Another issue that interferes with standardization is imperial unit ANSI hardware & ISO metric hardware. So we are going to have to explain both unit systems for clarity. But first let's start with the basic fundamentals that both unit systems have in common.

Create a library

The library name should be unique within the chosen library that it should also communicate what footprints to expect within it to your target audience. Don't include special chars inside your library name as it might create problems in some platforms.

Create a PCB footprint

Altium Designer hosts a huge array of ready-made PCB components both in servers as well as in several integrated & discrete libraries available through AltiumLive. However even with this rich set of resources, it is likely that at some point in your career you will need to create a custom PCB component. PCB component footprints are created in the PCB library editor using using same set of primitive objects

available in the pcb editor in addition to footprints
company logos, fabrication definitions, & other objects
required during board design can also be saved as pcb

Steps to create your component footprint
(creating your footprint in altium consists of 4 steps)
Step 1: create the pads

You will need the landing pattern for your part which
can be found towards the end of the component data
sheet. for this ex, let's use the popular `PEC3453646A006`
microcontroller. this component is packaged in a 44-lead
plastic thin quad flatpack. in altium designer, under file-
new->library->pcb library, this will add a new pcb footprint
library to your project.

Step 2: Define Component Height & area.

In this step, we need to define the height & area occupied
by the component we also need to define the component
type, to access this information, select your new compo-
nents footprint from the footprints list & click the edit button.
from here, you'll be able to enter these 8 pieces of information.
By default, the component type will be set to standard.

Step 3: Add silk screen information

for this step, we add the silk screen layer image & pin
masking. we will follow the suggestion from the data
sheet & indicate only where the corners should be to
make a corner, we create a 0.8mm line which you get
by selecting the line icon on the pcb lib placement toolbar
duplicate it & link them.

Step 4: save the footprint

The final step is to create your component is to name &
save it so you can add it to your component which also
includes the schematic symbol tip. you will want to
make the name unique & searchable so you can easily
locate it.

Date: 10/06/2020

Name: Tyoti S. Dinnu
Usn: 4ALITEC037

Course: MySQL

Topic: Hiding a sensitive data, PHP echo of quotes, formatting using sprintf, intro to user defined variables

Afternoon session details

Report

Hiding a sensitive data

When thinking about security within a MySQL installation, you should consider a wide range of possible procedures best practices & how they affect the security of your MySQL server & related applications. MySQL provides many tools/features/plugins in order to protect your data including some advanced features like transparent data encryption aka TDE, Audit, data masking & De-identification, firewall, password management password validation plugin etc...

PHP double quotes vs single quotes

Strings in PHP can be specified in four different ways - single quoted, double quoted, heredoc syntax & nowdoc syntax, the first two of them being by far the most frequently used.

It is important to know the difference b/w using single quotes & double quotes. In this post we will see the difference b/w them & which should be used them.

Single quoted strings are the easiest way to specify string this method is used when we want the string to be exactly as it is written.

PHP sprintf() function

Definition & usage

The sprintf() function writes a formatted string to a variable.

The arg1, arg2, ... parameters will be inserted at percent(%) signs in the main string. Here's an example: step by step: at the first % sign arg1 is inserted, at second % sign, arg2 is inserted, etc.

If there are more % signs than arguments, you must use placeholders. It is inserted after the % sign, & consists of the argument-number.

Related functions: printf(), sprintf(), vsprintf(), & vsnprintf().

Syntax

`sprintf(format, arg1, arg2, arg3, ...)`

Replace the percent(%) sign by a variable passed as an argument. Example: `number = 9;`

`str = "beijing";`

Introduction to user defined variables

MySQL supports user defined variables to have some data that can be used later part of your query, you can save a value to a variable using a SELECT statement & later you can access its value.

```
SET @server_type = 'MySQL';
```