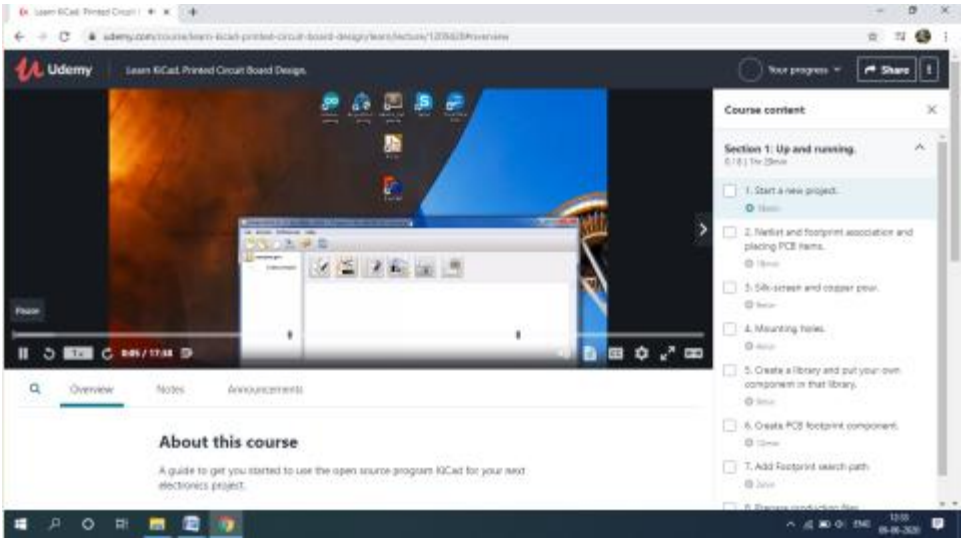
DAILY ASSESSMENT FORMAT

Date:	**09-06-2020**	**Name:**	**Sahana S R**
Course:	**PCB design using Kicad**	**USN:**	**4AL17EC083**
Topic:	**Start a new project, netlist& footprint association &placing,silk-screen & copper-pour**	**Semester & Section:**	**6th sem 'B' sec**
Github Repository:	**sahanasr-course**		

FORENOON SESSION DETAILS

Image of session



CREATING A NEW PROJECT:

It is time to get started with the first project. Start KiCad, then click on the File menu item and select New Project

1.Start Kicad and create a new project

It is a good practice to store project files inside a project directory. Create a new directory named nRF24-breakout

2.Create a new directory to hold the project files

Then, go inside this new directory and create the project file, call it nRF24-breakout. Click on the Save button to finish the process.

3.Your new project.

You may remember from the workflow that the first thing that we do when we create a new project in KiCad is to create the schematic with Eeschema. To start Eeschema, the Electronic Schematic Editor, we click on the first button from the left:

4.Start Eeschema

Once the Eeschema window appears, maximise it to gain as much screen real estate as possible. Components will be going into this canvas, which is the white area inside the red border, in the middle of the screen . Much of the work that you'll be doing will be done via shortcuts and through the mouse.

5.The blank canvas in Eeschema

You can zoom in and out using the scroll wheel of the mouse. This is a basic function that you will be using constantly. If you've got a mouse without a scroll wheel, I strongly suggest you get one with a scroll wheel. I use a Logitech Bluetooth mouse, and it is very convenient.Another very useful feature is panning. Panning allows you to move around the canvas by clicking it's left button while holding the command key on my keyboard (I am using a Macintosh keyboard with a Windows virtual machine, so the exact key combination may be different for you). Depending on the keyboard that you have, you may need to use a control or the shift key and that, again, it depends on whether you are on Windows, Mac or Linux.If you type Shift and the question mark then you'll get the hotkeys list which contains all the most important and commonly used shortcuts.

6.The hotkeys list.

For example, by pressing the A key and you can add a new component. By pressing the P key you can add a particular kind of component: a power component. You can use the V key to edit a component value so it can set for example a resistor to its particular value and so on.There are a lot of hotkeys. We will not going to be using all of these in this project, but you can speed up your work by a lot if you can memorise only 4-5 of them. If you forget a particular shortcut, remember to type Shift and the question mark to bring up the hotkeys list.If you look carefully at the canvas you will notice small dots spread out throughout. These dots mark the grid. The grid allows you to align the schematic components in tidy rows and columns. You'll be using the grid to make sure that everything aligns well.

7.useful buttons in the left tool bar

I'll be using millimeters in this book. You can change the cursor shape to cross hairs by clicking on the crosshairs button. I think that's a little bit distracting so I prefer to have that off and just have a small cross in the middle. The "Show hidden pins" button allows you to show hidden pins, usually found in integrated circuit components. We're not going to use this feature in this project but our next project will have integrated circuits with hidden pins, so we'll be using this to turn them on and off. The last button allows you to draw wires and busses in any direction.

FOOTPRINTS PLACEMENT:

Our project is now at the stage where the two footprints that compose our PCB are spread out in the Pcbnew canvas. In this chapter we will do the footprint placement so that we can start giving shape to the final PCB.I would like to place the connector on the right side of the breakout and the nRF24 component on the left side. To so this, position the cursor over the nRF24 footprint and hit the 'M' key. This will allow you to move this footprint. Move it so that it is on the left side of the straight connector.The nRF24 footprint is on the left side of the connector. Notice the rattiest lines. They indicate the pads that should be wired together.The thin white lines that connect the pads together are called "ratsnests" . They are routing guides. As we wire each pair of pads together, the corresponding ratsnest will disappear.One thing to consider when you are placing your components onto your PCB is space. How much space is your final PCB going to take up? Remember that PCB manufacturers, will charge you not based on have many holes and tracks your PCB has but based on its dimensions. Therefore, the smaller your PCB is, the cheaper it will be to make.

However, the smaller the PCB is, the harder can be to route it. With less space in between footprints, the routing of tracks will be more difficult. This is not a problem for the simple PCB of this example, however if you had more footprints, then placing them to close to each other would make routing and then soldering harder. You must think about this and find a dimension that works both from a cost point of view and from these other technical considerations like the soldering and the routing point of view.

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Silkscreen and copper pour:

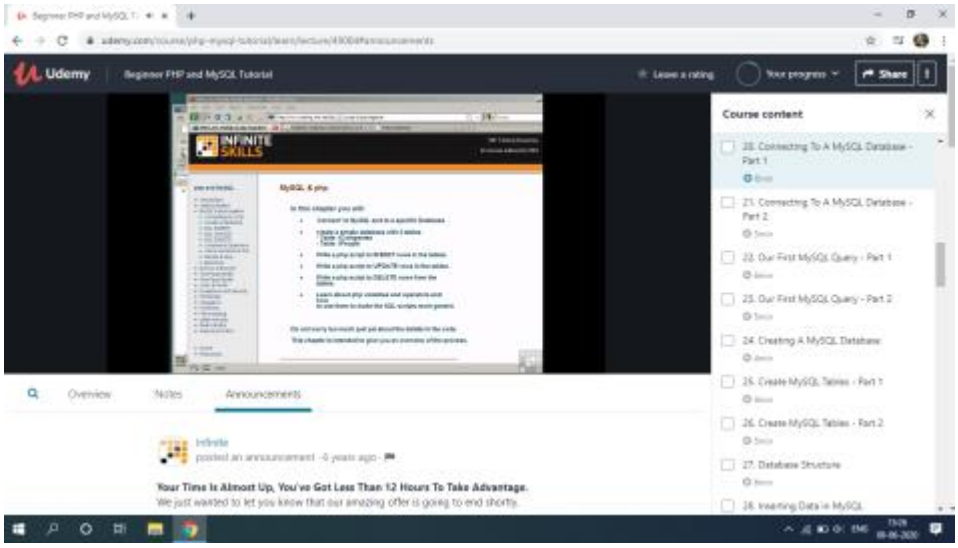
Unfortunately, when part outlines and text are drawn on the copper layer, they are electrically conductive. You can’t put traces or parts in the same places, as the copper text would interfere and change the circuit.In your layout program, you can place text and part outlines on the silkscreen layer instead of copper. For example, in Copper Connection simply choose the silkscreen layer before placing text, or select the existing text and switch the layer to silkscreen.Copper Connection includes a bulk selection feature for your convenience. If you have already made a board with text on a copper layer, you don’t have to move each text element one at a time. Instead, right click on any copper-layer text, choose “Select All Text on this Layer”, and then choose the new layer (top or bottom silkscreen).Now, when you order the boards from your favorite manufacturer, be sure to choose one of their manufacturing options that includes silkscreen. For prototype runs, silkscreen is usually restricted to the top side of the board, but some manufacturers offer both sides.

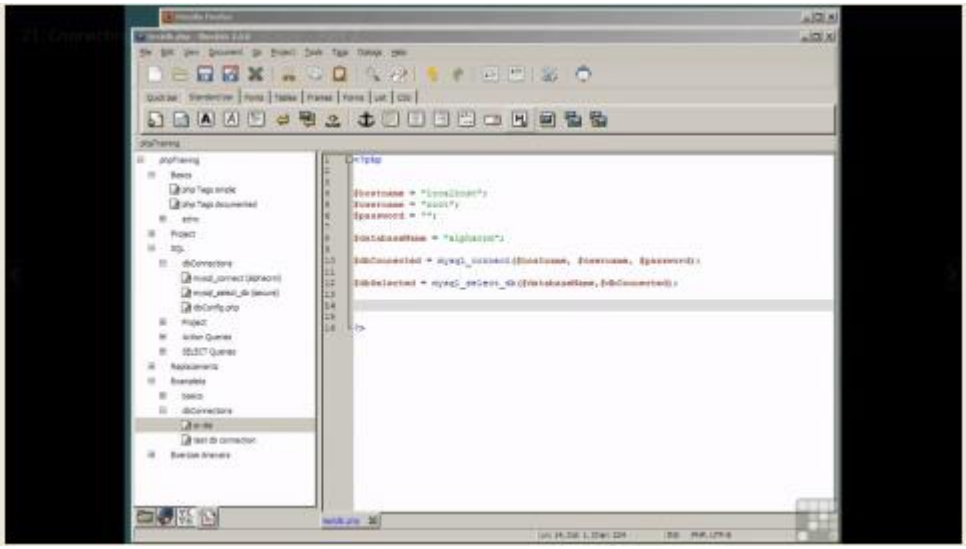
DAILY ASSESSMENT FORMAT

Date:	**9-06-2020**	**Name:**	**Sahana S R**
Course:	**MySql**	**USN:**	**4AL17EC083**
Topic:	**Connecting to a mysql and to a DB,creating mysql database,create mysql tables,inserting a data in mysql**	**Semester & Section:**	**6th sem 'B' sec**
Github Repository:	**sahanasr-course**		

AFTERNOON SESSION DETAILS

Image of session





Connecting to a mysql and to a DB:

$hostname= “localhost”;
$username= “root”;
$password= “”;
$databasename= “alphacrm”
$dbconnected=mysql_connect($hostname,$username,$password)
$dbselected=mysql_select_db($databasename,$dbconnected)

CREATE MYSQL DATABASES AND USERS

To create MySQL database and users, follow these steps:

1. At the command line, log in to MySQL as the root user
2. Type the MySQL root password, and then press Enter.
3. To create a database user, type the following command. Replace username with the user you want to create, and replace password with the user's password:
4. Type \q to exit the mysql program.
5. To log in to MySQL as the user you just created, type the following command.
   Replace username with the name of the user you created in step 3
6. Type the user's password, and then press Enter.
7. To create a database, type the following command. Replace dbname with the name of the database that you want to create:
8. To work with the new database, type the following command. Replace dbname with the name of the database you created in step 7
9. You can now work with the database. For example, the following commands demonstrate how to create a basic table named example, and how to insert some data into it

Create Tables using MySQL

There are two main ways of creating tables in MySQL databases:

- Executing a query that includes a CREATE TABLE statement
- Using the corresponding functionality of MySQL-related tools and IDEs

The first approach is helpful when you need to create tables specifically via a script. For example, you want to create a table at a very specific time, but you won't be able to do it manually due to being away at that moment. So, you can schedule the table creation process using the Windows Scheduler – this is where the table creation query will help.

The second method is great for creating tables on the spot. It can also be more convenient in many cases as it's very visual and intuitive. There are many tools that provide this functionality, and we will take a look at one of them – dbForge Studio for MySQL.

Database Structure

MySQL is a Relational Database Management System (RDBMS). Your MySQL server can manage many databases at the same time. In fact, many people might have different databases managed by a single MySQL server. Each database consists of a structure to hold the data and the data itself.

data in a database is stored in one or more tables. You must create the database and the tables before you can add any data to the database. First you create the empty database. Then you add empty tables to the database.Database tables are organized like other tables that you're used to — in rows and columns. Each row represents an entity in the database, such as a customer, a book, or a project. Each column contains an item of information about the entity, such as a customer name, a book name, or a project start date. The place where a particular row and column intersect, the individual cell of the table, is called a field.

Inserting a data in mysql

To insert data into a MySQL table, you would need to use the SQL **INSERT INTO** command. You can insert data into the MySQL table by using the mysql> prompt or by using any script like PHP.

Syntax

Here is a generic SQL syntax of INSERT INTO command to insert data into the MySQL table −

```
INSERT INTO table_name ( field1, field2,...fieldN )
   VALUES
   ( value1, value2,...valueN );
```

Updating mysql tables:

Update<tablename>SET
Field A= 'value A'
Field B= 'value B'
Field C= 'value C'
WHERE
Field<operator> 'value X1'
<operator>might be = or >or <etc
Eg.WHERE ID>6
Or name= "TMIT"