

# Open Education Research(OER): Question Repository in Moodle for evaluating students' SQL knowledge

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This work is done by Renetha J.B and team of Lourdes Matha College of Science and Technology Trivandrum, as part of Two-Week AICTE approved FDP Under the aegis of Pandit Madan Mohan Malaviya National Mission for Teachers and Teaching on “Pedagogy for Online and Blended Teaching-Learning Process”

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*Topic Name* : SQL

*Detailed topic name:* **SQL knowledge- Question repository**

*Domain* : **Computer Science**



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## SECTION 1: Open Education Resource: Question Repository in Moodle for evaluating students' SQL knowledge

### About the OER

This open education resource(OER) is a question repository with online quiz activities (multiple choice questions(MCQ) as well as subjective types questions) using moodle for assessing and evaluating student's knowledge of SQL. Grading system is also provided. These are useful for student performance evaluation that can be done periodically. This OER is useful for teachers as well as students for using online assessment technology for student evaluation and grading.

This OER can be accessed from following URL:

<https://renethajb.gnomio.com/login/index.php>

Username: fdp201user

Password:User@123

**Target Audience:** Undergraduate students pursuing B,Tech( IT and CS streams), B.Sc CS students

OER developed using gnomio.

**Tags:** SQL, DDL, DML, table, Query, MOODLE, Quiz, Assessment Technology, Undergraduate Students, Online assessment, create, alter, drop, select, insert, delete, schema

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### Learning Objectives:

After using this OER, teachers will be able to:

- Assess student's knowledge in basic commands in SQL (**Understand level**)
- Assess the ability to identify suitable commands that can be applied in each situation(**Analyze level**)

- Assess students implementation skill based on the requirement using appropriate commands.(**Apply level**)
- Check and grade the student's performance
- Use online assessment technology for creating assessments
- Familiarize themselves with MOODLE

### Helpful Documentation for Tool Use

[1] For design and development of Course quiz and subjective question repository in MOODLE, use [www.gnomio.com](http://www.gnomio.com)

[2] Help documents available in [https://docs.moodle.org/31/en/Main\\_page](https://docs.moodle.org/31/en/Main_page)

## SECTION 2: Design Decisions

### Nature of Decisions taken

For creating this OER we have used three design decisions:

1. Content Decisions
2. Pedagogic Decisions
3. Technology Decisions

### Content Decisions:

The following were the content decisions made:

- a. Earmarking specific segment for in-class activity to be covered – Decided on SQL command knowledge-MCQ and subjective questions on various topics covering SQL.
- b. Decided to improve the analysis level of students

### Pedagogic Decisions:

The following pedagogic decisions were made:

- Decided to create quiz on various sections in SQL.
- Decided to perform subjective evaluation also.
- For that questions need to be prepared. Mark distribution and time constraints need to be fixed.

For the In-class strategy MCQ and subjective type questions on various topics covering concepts and commands in SQL can be used for the online assessment. Students can also perform self assessment of their knowledge in SQL. These questions could be asked among various cognitive levels –mostly from recall level to apply level.

### Technology Decisions:

During creation of OER , the major technology decisions were taken:

- a. Tool to be used for creating Quizzes – MOODLE(using website [www.gnomio.com](http://www.gnomio.com))
- b. Publishing of the quiz for student’s evaluation and assessment using MOODLE Platform..
- c. Decided to add test user login

## SECTION 3: OER Description

### Active OER:

The developed OER can be accessed using login credentials shown below .

URL : <https://renethajb.gnomio.com/login/index.php>

Username: **fdp201user**

Password: **User@123**

### Adding a new course

To add a new course to Moodle, you need to have either Administrator, Course Creator or Manager rights. You login to moodle with your login credentials.

To add a course:

Step 1: Click **Turn editing on** on right side settings.

Step 2: From the **Site administration** link(on the left), click Courses>Manage courses and categories

Step3:Click New course in the category page on the right

Step4:Click on the category where you want your course to be. For more information see Course categories. Click the "New course" link

Step 5: Enter the course settings, and then choose either to "Save and return" to go back to your course, or "Save and display" to go to the next screen.

A course named **SQL knowledge- Question repository** is created in this OER activity.

### Quiz Settings and student enrolment :

The following screencast is prepared using screencast-o-matic for demonstrating how to create quiz in a moodle and how to manage course and enrol users.

For watching *how to set a QUIZ like this please click the below screencast video created using Screencast-o-Matic*. Please click the link below:-

<https://www.youtube.com/watch?v=3olP8JilTUc&t=379s>

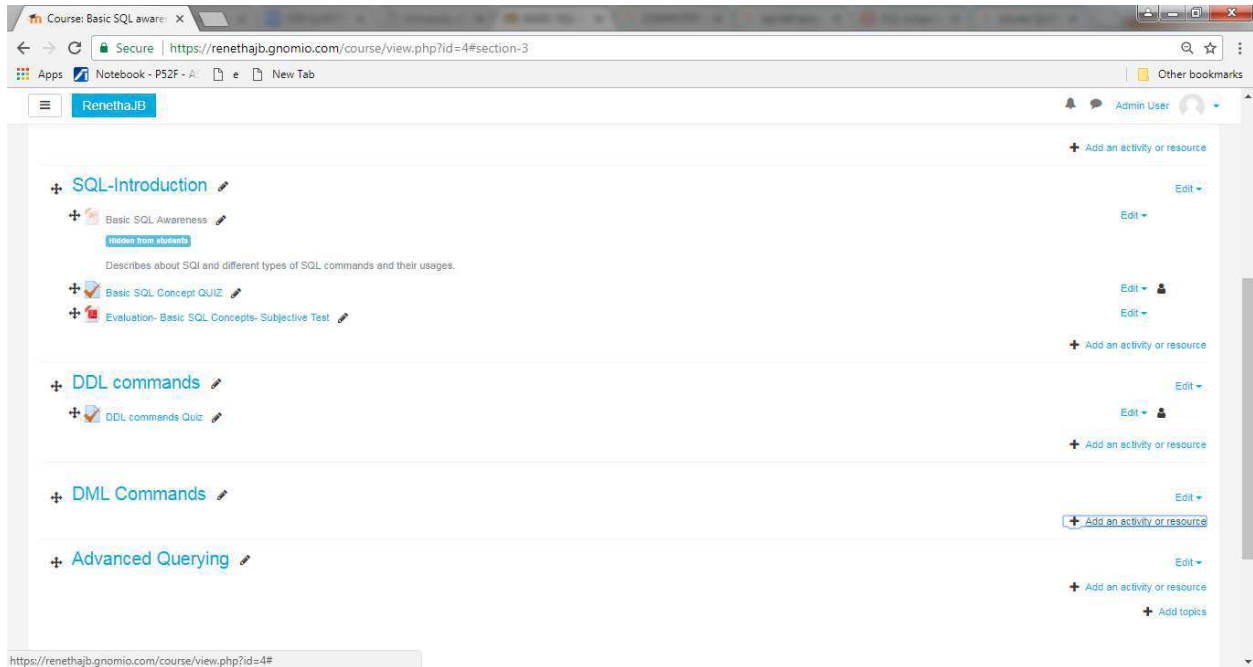
In Gnomio, you can click Add activity/resources below your course and then click quiz Multiple choice and proceed as given in above video.

## Subjective question Settings:

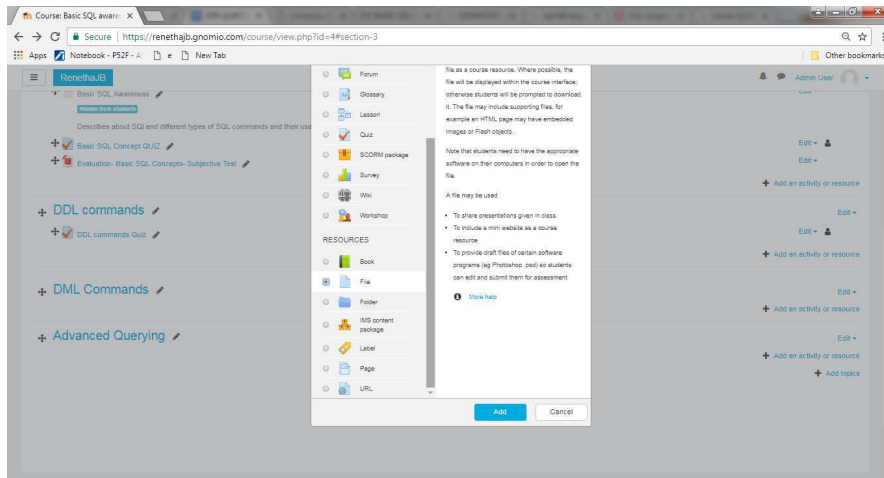
Prepare subjective question paper in Word document and convert it into pdf format.

Here screenshot is shown for adding subjective question under topic DML commands.

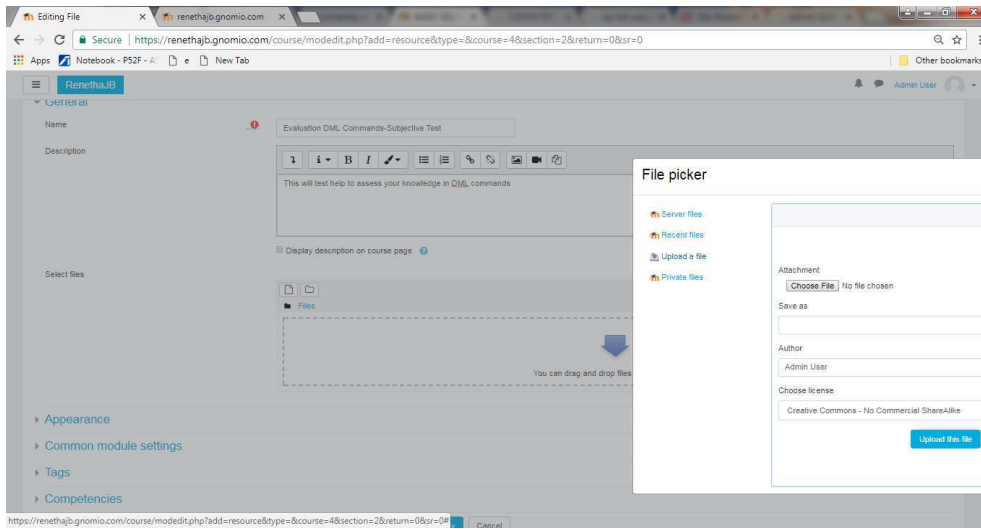
You can click Add activity/resources below your course topic(DML commands) where you want to add subjective question.



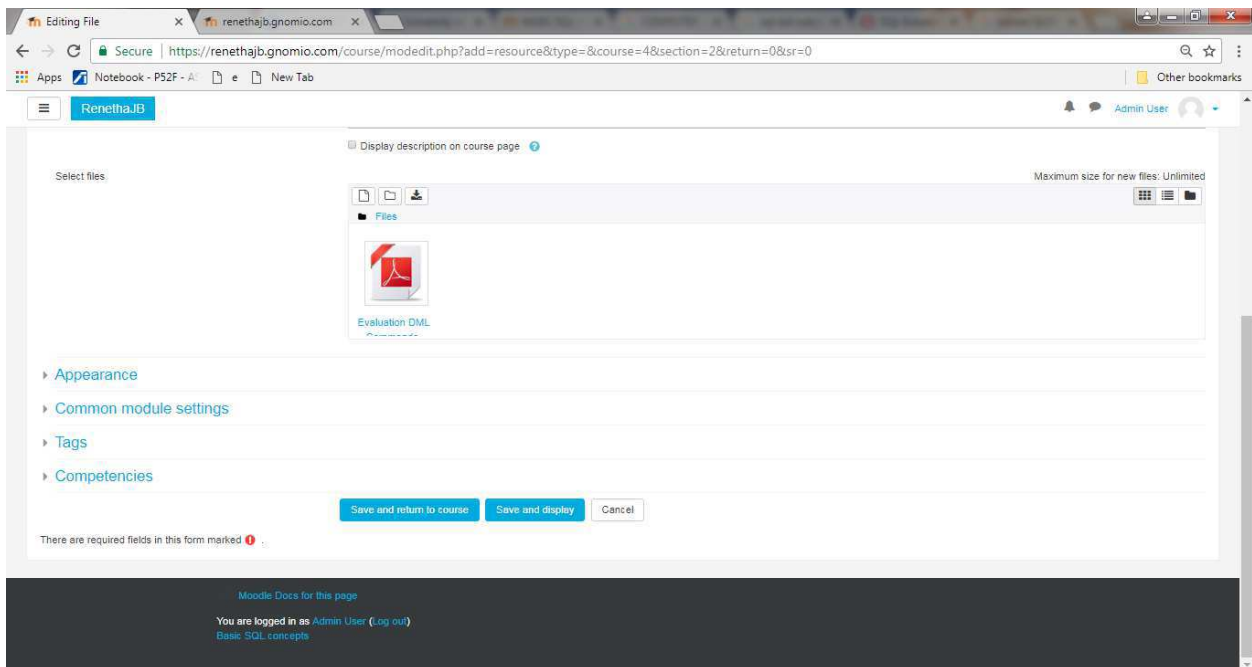
Click File and click add button as shown below



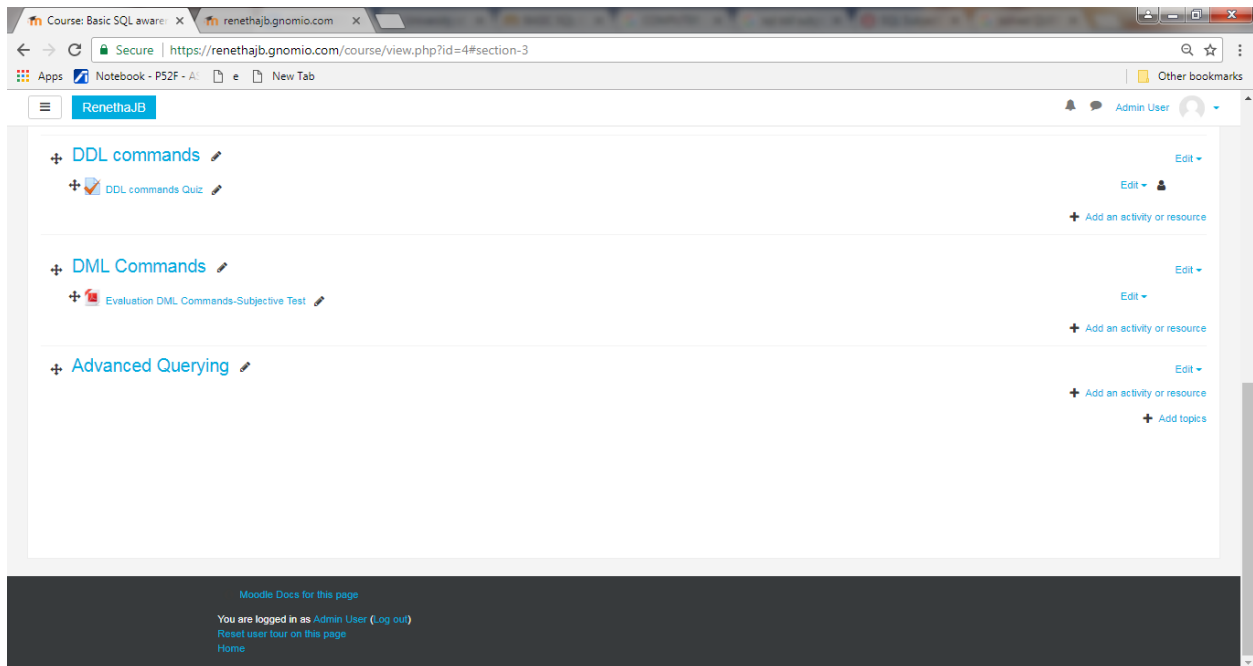
Give details about the file and then click first file symbol in *Select files* option as shown below and then click *Upload a file* on left



Click Choose file and select the file(pdf) to be uploaded. Select suitable licence Creative Commons-No Commercial Share Alike. Then upload the file.



Then click save and return to course. You can see that that file is present below your course topic



### How to use Quiz and subjective questions in this OER?

Questionnaire is prepared in the Course “SQL knowledge- Question repository”The first quiz in the moodle comes under ‘Basic SQL Commands’ i.e. “Basic SQL concept quiz” is meant for evaluating the SQL command types knowledge. This can be done as in-class activity after giving an overview about SQL command classification.

For testing detailed knowledge about SQL command usage evaluation,“Evaluation- Basic SQL Concepts- Subjective Test” can be used as a tutorial test.

Second quiz “DDL commands quiz” under ‘DDL commands’ can be used for evaluating knowledge about DDL commands and usage.

For testing detailed knowledge about DDL command usage evaluation,“Evaluation- DDL Commands-Subjective Test” question paper can be used as a tutorial test.

Third quiz “DML commands quiz” under ‘DML commands’ can be used for evaluating knowledge about DML commands .

For testing detailed knowledge about DML command usage evaluation,the question paper “Evaluation- DML Commands-Subjective Test” can be used as a tutorial test.

Fourth quiz “Quiz on Queries” under ‘Advanced Query Knowledge’ can be used for evaluating knowledge about queries.

For testing detailed knowledge about Query usage evaluation,three subjective evaluation question papers are provided- “Evaluation- Advanced Query knowledge-Subjective Test1”, “Evaluation- Advanced Query knowledge-Subjective Test2” and “Evaluation- Advanced Query knowledge-Subjective Test3”.These question papers can be used as a tutorial test or lab test.



Mark of quiz and evaluation test can be used for computing **25% of internal marks**.

### How to use this OER by Teachers for teaching-learning

For usages of this OER, you need to login into your individual MOODLE as admin account or you can ask your site administrator to restore this course backup in your own course.

Step 1: Download the Course Backup option from

<https://renethajb.gnomio.com/mod/resource/view.php?id=36>

Username: fdp201user

Password:User@123

Step 2: Now, you should go into the individual MOODLE course under which you need to import this course . In the site Administration section click “Restore”



Step 3: Drag and drop the course backup into the “Files” area and click restore

Step 4: Verify the questions of the restore by going back to the Quiz, under all the topics

Step 5: After verifying, assign the restored course to your registered students into the MOODLE.

Step 6: Ask to your students to attempt the Quiz in presence of teacher.

Step 7: Now, it is advised to teacher to check the progress reports of the students before start of the next class by clicking Result option in the settings of each quiz

Staff can make use of subjective questions under each course topic for detailed assessment of students knowledge in SQL commands.

Students preview of Quiz front page .

The screenshot displays a web browser window with the URL <https://renethajb.gnomio.com/mod/quiz/view.php?id=18>. The browser's address bar shows the URL and a search icon. The page header includes the RenethaJB logo and navigation icons for home, search, and user profile. The main content area shows the quiz title 'Basic SQL Concept QUIZ' and the purpose 'To test the basic command knowledge'. It also displays the quiz's start and end dates (Saturday, 14 October 2017, 5:45 PM to Sunday, 14 October 2018, 5:45 PM), a 10-minute time limit, and a 'Highest grade' grading method. An 'Attempt quiz now' button is visible. A left sidebar contains a navigation menu with options like 'Basic SQL concepts', 'Participants', 'Badges', 'Competencies', 'Grades', and a folder structure including 'General', 'SQL-Introduction', 'DDL commands', 'Querying the database', and 'Topic 4'. At the bottom of the sidebar, there are links for 'Home', 'Dashboard', and 'Calendar'.

### Best Practices with Assessment Activity:

There are some best practices from our experience for using this assessment strategy in your Classroom:

1. This activity can be conducted topic wise, once the same topic has been covered in the class.
2. Conduct the quiz as well as subjective evaluation in the presence of the class teacher to prevent the copying among the students.
3. Alert the students about the impact of such assessment to academics(internal marks), so that students will be interested and cautious in the assessment.
4. If some model question paper were separately provided to students before conduction of such assessment, this will be more effective.

## SECTION 4: Evaluating Effectiveness of OER

The OER effectiveness can be assessed and evaluated at two levels:

### 1. At the student level

There is a feedback section for collecting students review about this questionnaire.

The Moodle is provided with quiz (MCQs) questions and subjective questions on topic SQL . The quiz is divided into four sub topics as Basic SQL commands, DDL commands, DML commands and Advanced Query knowledge. The subjective questions are also provided on these topics of SQL. By attempting the quiz in a given time frame the students can evaluate themselves and judge their knowledge about the topics Also by attempting the subjective questions they can evaluate and judge themselves. The teachers can also evaluate the students according to the marks score. The effectiveness can be checked by the number of students logged in and number of attempts they have taken to complete the answers.

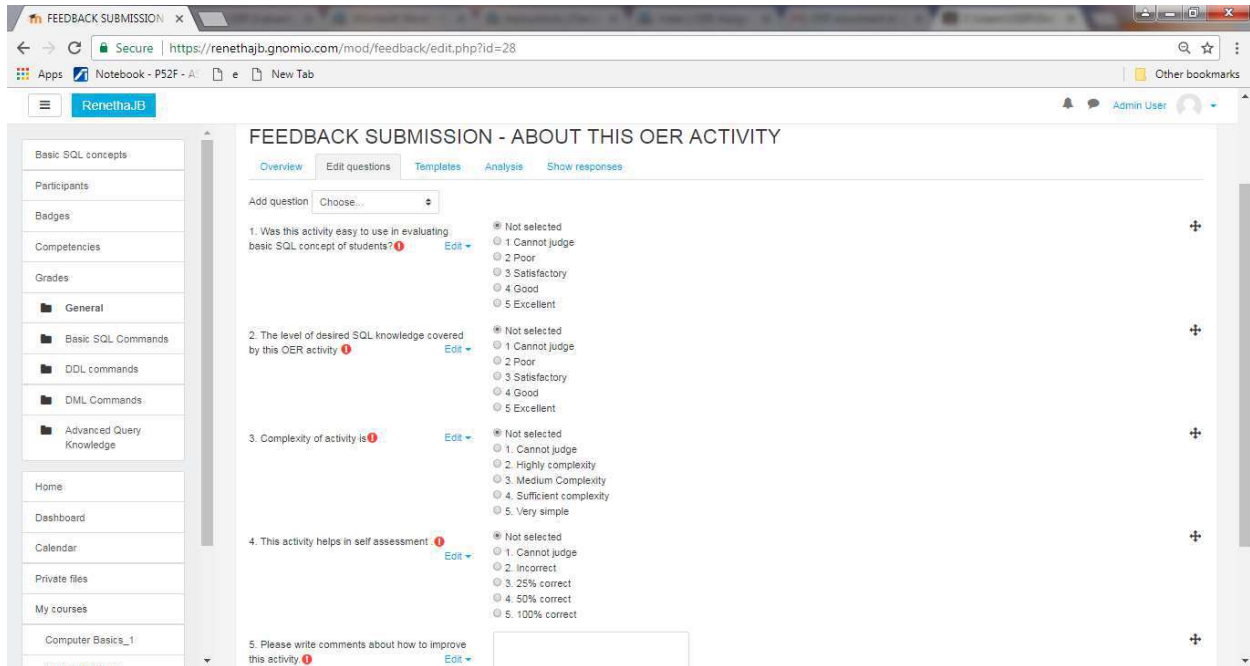
Feedback submission activity can be analysed for collecting students review about this question repository.

### 2. At the instructor/teacher level

Here the consumers are teachers who have taught the SQL to the target students. The target students are the students who are doing the B.Tech, MCA and B.Sc (CS) course. In the Moodle the teachers can upload their quiz and subjective questions as an assignment. They can evaluate the students based on the timely submission and completion of the assignments. The teachers can create the scorecard and evaluate the students. Finally the teachers can upload the final result on the Moodle. For a practice the Moodle contains the questions on the various topics of SQL. Students and teachers can access that, attempt and judge themselves, and accordingly study the topic based on their performance.

### Implementing Survey

Thus every user who use this resource will be asked their email address and give feedback that is given along with this course. The following gives the screenshot of a part of feedback submission of in this OER activity.



## SECTION 5 – Consolidated Log of Teamwork

Activity	Team Member	Amount of Time	Additional Logs
Discussion	Team Leader	3 hour	
	Team Member1	3 hour	
	Team Member 2	3 hour	
	Team Member 3	3 hour	

Tool Exploration	Team Leader	1 hour	
	Team Member1	1 hour	
	Team Member 2	1 hour	
	Team Member 3	1 hour	
OER Creation	Team Leader	4 Hour	Plan uploaded in gnomio Moodle
	Team Member1	4 Hour	
	Team Member 2	4 Hour	
	Team Member 3	4 Hour	
OER Documentation	Team Leader	2 Hour	OER Documentation in Word Press Site
	Team Member1	2 Hour	
	Team Member 2	2 Hour	
	Team Member 3	2 Hour	
Individual Reflection	Team Leader	1 hour	E-mail Logs uploaded

(Diary Logging)	Team Member1	1 hour	In Wordpress site
	Team Member 2	1 hour	
	Team Member 3	1 hour	
OER Evaluation	Team Leader	2 Hour	<b>SQL Evaluation Method</b> <b>Uploaded at</b> <a href="https://renethajb.gnomio.com/login/index.php">https://renethajb.gnomio.com/login/index.php</a>
	Team Member1	2 Hour	
	Team Member 2	2 Hour	
	Team Member 3	2 Hour	

## Section 6: Building a Community for Assessment Strategy using MOODLE

As we have created and submitted the OER assignment during FDP. On the successful assessed and evaluation by the peer assessment group and IIT Bombay team, we will make the community. The community will consist of Students and Teachers.

### Works Cited

[1] MOODLE. (2015, October) Moodle Docs. [Online].

[https://docs.moodle.org/33/en/Quiz\\_activity](https://docs.moodle.org/33/en/Quiz_activity)

[https://docs.moodle.org/33/en/Course\\_homepage](https://docs.moodle.org/33/en/Course_homepage)

[https://docs.moodle.org/33/en/Course\\_enrolment](https://docs.moodle.org/33/en/Course_enrolment)

[https://docs.moodle.org/33/en/Tracking\\_progress](https://docs.moodle.org/33/en/Tracking_progress)

[2] Abraham Silberschatz, Henry F. Korth & S. Sudarshan, 'Database System Concepts', McGraw Hill International Edition, 2006.

[3] Rameez Elmasri, Shamkant B. Navathe, 'Fundamentals of Database Systems', 5th Ed., Pearson Education, 2009