

LAB - 1

Data Handling using traditional (relational) databases.

Aim : Recording types of data and various file formats. Identifying data sources.
Handling data traditionally to start with at a small scale.

EXERCISE:

1. Prepare the spreadsheet file for the data and then convert it into a csv.
A TasksassignmentsActionItems.csv has been uploaded on classroom along with this pdf. We will use it for the below exercises.
2. Import .csv file

Server: localhost » Database: mt1_1 » Table: taskassignmentsactionitems

Current selection does not contain a unique column. Grid edit, checkbox, Edit, Copy and Delete features are not available.

Showing rows 0 - 24 (136 total, Query took 0.0002 seconds.)

`SELECT * FROM `taskassignmentsactionitems``

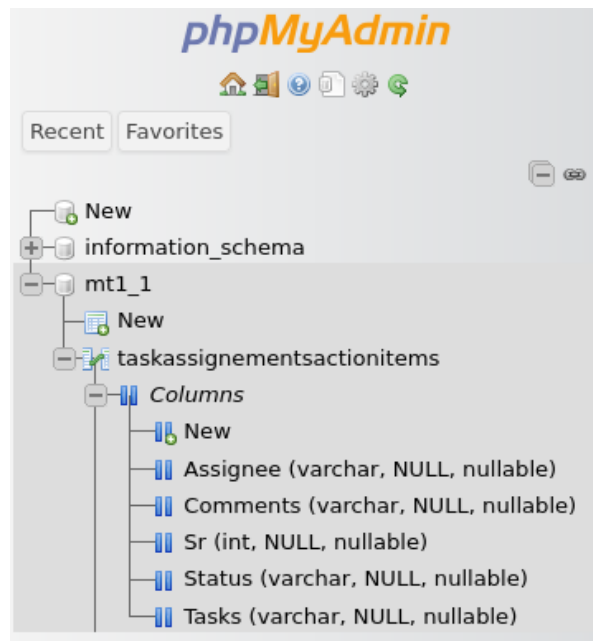
Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

1 > >> Show all Number of rows: 25 Filter rows: Search this table

Extra options

Sr	Tasks	Assignee	Status	Comments
1	Yii sessional out of attendance	Kartik	A: Done	
2	Auto logout from moodle on Univ.panel/student logo...	Lakhan	A: Done	CleanupMoodleSession once
3	Moodle changes for course cancel button	Darpan	A: Done	
4	Moodle auto create course null check	Darpan	A: Done	
5	Yii moving Session to mysql db	Lakhan	A: Done	
6	CSV to excel download	Prasiddh	A: Done	
7	Lab Resource Management	Kartik	A: Done	
8	Update code to id in moodle	Kartik and Darpan	A: Done	
9	ISO Detail Analysis	Prasiddh	A: Done	
10	Moodle Query Optimization	Darpan	A: Done	
11	Available courses and my courses enrollment for te...	Kartik	A: Done	
12	Optimize auto enrollment for moodle	Darpan	A: Done	
13	Studentkey in programst	Prasiddh	B: Tobedeployed	
14	Forms information messages using table column comm...	Kartik	C: Tobetested	
15	Forms for student enrollment for different program...	Darpan/Lakhan	C: Tobetested	
16	SRAC - dropdown of enrollment, only for active enr...	Darpan/Lakhan	C: Tobetested	
17	Copy from previous fee structure - extra changes.	Lakhan	D: Tobecodereviewed	
18	Event Management	Lakhan/Jemin	F: UnderDevelopment	
19	Adding IP to session in yii	Lakhan	F: UnderDevelopment	
20				
21	moodle auto enrollment eventhough the batch/subjec...	Jimmy	A: Done	
22				
23	TimeTable management			
24	Faculty Feedback System, department feedback for g...			
25	Email for reset password, moodle course updates no...		G: Partial	

1 > >> Show all Number of rows: 25 Filter rows: Search this table

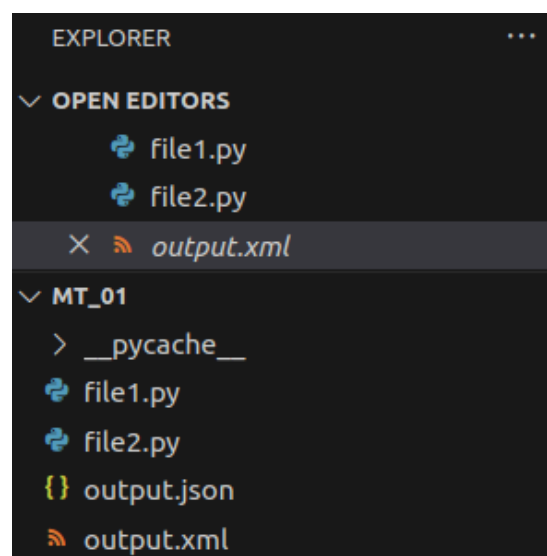


As seen in the picture, the .csv file has been imported on MYSQL database server using phpMyAdmin at hostname : 192.168.29.150 and port : 3306

phpMyAdmin is GUI for managing MySQL and MariaDB databases.

3. Write a computer program to read records from the database and generate data file/s.

- a. JSON
- b. XML



Both the files are created and run at Vscode using Pyhton.

- a. JSON file(JavaScript Object Notation):** JSON is a lightweight, text-based data interchange format derived from JavaScript object syntax. It uses key-value pairs and arrays to represent data objects. JSON is widely used for transmitting data between a server and web application as it is easy to parse and generate in JavaScript and many other programming languages.

file1.py contains code to generate a JSON file for our
TasksAssignmentsActionItems.csv

Code:

```
import mysql.connector # type: ignore
import json

# Connect to the MySQL database
db = mysql.connector.connect(
    host="192.168.29.150",
    user="mt1_1",
    password="mt1_1",
    database="mt1_1"
)

# Create a cursor object to interact with the database
cursor = db.cursor()

# Query the database
cursor.execute("SELECT * FROM taskassignmentsactionitems")

# Fetch all the rows from the query result
rows = cursor.fetchall()

# Convert the result to a list of dictionaries
data = []
for row in rows:
    data.append({
        "Sr": row[0],
        "Tasks": row[1],
        "Assignee": row[2],
        "Status": row[3],
        "Comments": row[4],
```

```
    })  
# Write the result to a JSON file  
with open("output.json", "w") as json_file:  
    json.dump(data, json_file, indent=4)  
  
# Close the cursor and connection  
cursor.close()  
db.close()  
  
print("Data exported to output.json successfully.")
```

```
{  
  "output.json" > ...  
  1  [  
  2    {  
  3      "Sr": 1,  
  4      "Tasks": "Yii sessional out of attendance",  
  5      "Assignee": "Kartik",  
  6      "Status": "A: Done",  
  7      "Comments": ""  
  8    },  
  9    {  
 10      "Sr": 2,  
 11      "Tasks": "Auto logout from moodle on Univ.panel/student logout.",  
 12      "Assignee": "Lakhan",  
 13      "Status": "A: Done",  
 14      "Comments": "CleanupMoodleSession once"  
 15    },  
 16    {  
 17      "Sr": 3,  
 18      "Tasks": "Moodle changes for course cancel button",  
 19      "Assignee": "Darpan",  
 20      "Status": "A: Done",  
 21      "Comments": ""  
 22    },  
 23    {  
 24      "Sr": 4,  
 25      "Tasks": "Moodle auto create course null check",  
 26      "Assignee": "Darpan",  
 27      "Status": "A: Done",  
 28      "Comments": ""  
 29    },  
 30    {  
 31      "Sr": 5,  
 32      "Tasks": "Yii moving Session to mysql db",  
 33    }  
  ]  
}
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS SQL CONSOLE

```
• user1@celab3:~/Desktop/MT_01$ /bin/python3 /home/user1/Desktop/MT_01/file1.py  
Data exported to output.json successfully.  
• user1@celab3:~/Desktop/MT_01$ /bin/python3 /home/user1/Desktop/MT_01/file2.py  
Data exported to output.xml successfully.  
• user1@celab3:~/Desktop/MT_01$
```

Output:

```
[
  {
    "Sr": 1,
    "Tasks": "Yii sessional out of attendance",
    "Assignee": "Kartik",
    "Status": "A: Done",
    "Comments": ""
  },
  {
    "Sr": 2,
    "Tasks": "Auto logout from moodle on Univ.panel/student logout.",
    "Assignee": "Lakhan",
    "Status": "A: Done",
    "Comments": "CleanupMoodleSession once"
  },
  {
    "Sr": 3,
    "Tasks": "Moodle changes for course cancel button",
    "Assignee": "Darpan",
    "Status": "A: Done",
    "Comments": ""
  },
  {
    "Sr": 4,
    "Tasks": "Moodle auto create course null check",
    "Assignee": "Darpan",
    "Status": "A: Done",
    "Comments": ""
  },
  {
    "Sr": 5,
    "Tasks": "Yii moving Session to mysql db",
    "Assignee": "Lakhan",
    "Status": "A: Done",
    "Comments": ""
  },
  {
    "Sr": 6,
    "Tasks": "CSV to excel download",
    "Assignee": "Prasiddh",
    "Status": "A: Done",
    "Comments": ""
  }
]
```

```
"Comments": ""
},
{
  "Sr": 7,
  "Tasks": "Lab Resource Management",
  "Assignee": "Kartik",
  "Status": "A: Done",
  "Comments": ""
},
{
  "Sr": 8,
  "Tasks": "Update code to id in moodle",
  "Assignee": "Kartik and Darpan",
  "Status": "A: Done",
  "Comments": ""
},
{
  "Sr": 9,
  "Tasks": "ISO Detail Analalysiss",
  "Assignee": "Prasiddh",
  "Status": "A: Done ",
  "Comments": ""
},
{
  "Sr": 10,
  "Tasks": "Moodle Query Optimization",
  "Assignee": "Darpan",
  "Status": "A: Done ",
  "Comments": ""
},
{
  "Sr": 11,
  "Tasks": "Available courses and my courses enrollment for teachers",
  "Assignee": "Kartik",
  "Status": "A: Done ",
  "Comments": ""
},
{
  "Sr": 12,
  "Tasks": "Optimize auto enrollment for moodle",
  "Assignee": "Darpan",
  "Status": "A: Done "
```

```
"Comments": ""
},
{
  "Sr": 13,
  "Tasks": "Studentkey in programst",
  "Assignee": "Prasiddh",
  "Status": "B: Tobedeployed",
  "Comments": ""
},
{
  "Sr": 14,
  "Tasks": "Forms information messages using table column comments",
  "Assignee": "Kartik",
  "Status": "C: Tobetested",
  "Comments": ""
},
{
  "Sr": 15,
  "Tasks": "Forms for student enrollment for different programs",
  "Assignee": "Darpan/Lakhan",
  "Status": "C: Tobetested",
  "Comments": ""
},
{
  "Sr": 16,
  "Tasks": "SRAC - dropdown of enrollment, only for active enrollment period",
  "Assignee": "Darpan/Lakhan",
  "Status": "C: Tobetested",
  "Comments": ""
},
{
  "Sr": 17,
  "Tasks": "Copy from previous fee structure - extra changes.",
  "Assignee": "Lakhan",
  "Status": "D: Tobecodereviewed",
  "Comments": ""
},
{
  "Sr": 18,
  "Tasks": "Event Management",
  "Assignee": "Lakhan/Jemin",
  "Status": "F: UnderDevelopment",
```

```
"Comments": ""
},
{
  "Sr": 19,
  "Tasks": "Adding IP to session in yii",
  "Assignee": "Lakhan",
  "Status": "F: UnderDevelopment",
  "Comments": ""
},
{
  "Sr": 20,
  "Tasks": "",
  "Assignee": "",
  "Status": "",
  "Comments": ""
},
{
  "Sr": 21,
  "Tasks": "moodle auto enrollment eventhough the batch/subject groups are not created.",
  "Assignee": "Jimmy",
  "Status": "A: Done ",
  "Comments": ""
},
{
  "Sr": 22,
  "Tasks": "",
  "Assignee": "",
  "Status": "",
  "Comments": ""
},
{
  "Sr": 23,
  "Tasks": "TimeTable management",
  "Assignee": "",
  "Status": "",
  "Comments": ""
},
{
  "Sr": 24,
  "Tasks": "Faculty Feedback System, department feedback for graduates",
  "Assignee": "",
  "Status": "",
```



```
"Comments": ""
},
{
  "Sr": 25,
  "Tasks": "Email for reset password, moodle course updates notification, results available notification.",
  "Assignee": "",
  "Status": "G: Partial",
  "Comments": ""
},
{
  "Sr": 26,
  "Tasks": "Transcript online request and print receipt. Upon paying the fee, admin shall have an inbox for transcript statuses and generate transcript.",
  "Assignee": "",
  "Status": "",
  "Comments": ""
},
{
  "Sr": 27,
  "Tasks": "Moodle quizzes or examination for faculty recruitment process",
  "Assignee": "",
  "Status": "",
  "Comments": ""
},
{
  "Sr": 28,
  "Tasks": "University wide student email account.",
  "Assignee": "",
  "Status": "",
  "Comments": ""
},
{
  "Sr": 29,
  "Tasks": "Student panel, student shall be seeing books and their submission/renewal date for their library",
  "Assignee": "",
  "Status": "",
  "Comments": ""
},
{
  "Sr": 30,
```

```
"Tasks": "Search engine on books' database.",
"Assignee": "",
"Status": "",
"Comments": ""
},
{
  "Sr": 31,
  "Tasks": "Student/Alumni news, email based updates about university like Univ.connect.",
  "Assignee": "",
  "Status": "",
  "Comments": ""
},
{
  "Sr": 32,
  "Tasks": "Online assignment submission",
  "Assignee": "",
  "Status": "A:Done",
  "Comments": ""
},
{
  "Sr": 33,
  "Tasks": "Managing placement of students, records and more.",
  "Assignee": "",
  "Status": "",
  "Comments": ""
},
{
  "Sr": 34,
  "Tasks": "Interest based skills development via following credit system and more online courses.",
  "Assignee": "",
  "Status": "",
  "Comments": ""
},
{
  "Sr": 35,
  "Tasks": "Distance learning and knowledge sharing sessions. Broadcasting live lectures, etc.",
  "Assignee": "",
  "Status": "",
  "Comments": ""
},
{
  "Sr": 36,
```

```

"Tasks": "Let faculty view their leave reports/records.",
"Assignee": "",
"Status": "",
"Comments": ""
},
{
  "Sr": 37,
  "Tasks": "ISO related activities for faculties",
  "Assignee": "",
  "Status": "",
  "Comments": ""
},
{
  "Sr": 38,
  "Tasks": "",
  "Assignee": "",
  "Status": "",
  "Comments": ""
},
{
  "Sr": 39,
  "Tasks": "Notice board for announcement",
  "Assignee": "",
  "Status": "G: Partial",
  "Comments": ""
},
{
  "Sr": 40,
  "Tasks": "News like upcoming events, etc",
  "Assignee": "",
  "Status": "G: Partial",
  "Comments": ""
},
{
  "Sr": 41,
  "Tasks": "Facility management (or facilities management or FM) is an integrated multidisciplinary, interdisciplinary\n field devoted to the coordination of space, infrastructure, people and \norganization.",
  "Assignee": "",
  "Status": "",
  "Comments": ""
},
{

```

```
"Sr": 42,
"Tasks": "Try admin php mysql - chive, adminer.",
"Assignee": "Jimmy,Jemin",
"Status": "A:Done",
"Comments": ""
},
{
  "Sr": 43,
  "Tasks": "Drop all views of moodle; replace functionality or give drop sql;",
  "Assignee": "",
  "Status": "",
  "Comments": ""
},
{
  "Sr": 44,
  "Tasks": "Maintain Student and Univ.panel sessions in the same browser at the same time.",
  "Assignee": "",
  "Status": "",
  "Comments": ""
},
{
  "Sr": 45,
  "Tasks": "Yii booster 2.0 ext/bootstrap; may face issue of fullscreen with different browser;",
  "Assignee": "Jemin",
  "Status": "A:Done",
  "Comments": ""
},
{
  "Sr": 46,
  "Tasks": "Faculties result Analysis for their current subject and previous results (data you can find average, variance, generate charts, \nfind the top 5 students, bottom 5 student,sorted list of students based on marks in the selected subject, etc.)",
  "Assignee": "Jemin",
  "Status": "A:Done",
  "Comments": ""
},
{
  "Sr": 47,
  "Tasks": "Graphical Layout update for student and for faculty. Information page.",
  "Assignee": "Jemin",
  "Status": "F: UnderDevelopment",
  "Comments": ""
}
```

```
},
{
  "Sr": 48,
  "Tasks": "Have sysadmin login as admin to moodle",
  "Assignee": "Jimmy",
  "Status": "A:Done",
  "Comments": ""
},
{
  "Sr": 49,
  "Tasks": "sysadmin to chive and only if the redirect is a live instance.",
  "Assignee": "Jemin",
  "Status": "A:Done",
  "Comments": ""
},
{
  "Sr": 50,
  "Tasks": "Declaration form for Income Tax",
  "Assignee": "",
  "Status": "",
  "Comments": ""
},
{
  "Sr": 51,
  "Tasks": "Save password by firefox like client shall not popup if wrong password",
  "Assignee": "",
  "Status": "",
  "Comments": ""
},
{
  "Sr": 52,
  "Tasks": "messages",
  "Assignee": "Jemin",
  "Status": "A:Done",
  "Comments": ""
},
{
  "Sr": 53,
  "Tasks": "moodle password recovery",
  "Assignee": "",
  "Status": "",
  "Comments": ""
}
```

```
},
{
  "Sr": 54,
  "Tasks": "ISO Result page loading slow, on load branch list",
  "Assignee": "",
  "Status": "",
  "Comments": ""
},
{
  "Sr": 55,
  "Tasks": "gmail imap download latest emails inside student panel",
  "Assignee": "Jimmy",
  "Status": "A:Done",
  "Comments": ""
},
{
  "Sr": 56,
  "Tasks": "google calendar shows up in student/Univ.panel",
  "Assignee": "",
  "Status": "",
  "Comments": ""
},
{
  "Sr": 57,
  "Tasks": "Hidden/not declared yet results reports count, subjects of given exam code from  
tbltextexamresutl and sah",
  "Assignee": "",
  "Status": "",
  "Comments": ""
},
{
  "Sr": 58,
  "Tasks": "Report for placement co-ordinator",
  "Assignee": "Jemin",
  "Status": "A:Done",
  "Comments": ""
},
{
  "Sr": 59,
  "Tasks": "Update all the forms look and feel",
  "Assignee": "NP",
  "Status": "A:Done",
```

```
"Comments": ""
},
{
  "Sr": 60,
  "Tasks": "Disable download button on no data. Try to have global change.",
  "Assignee": "Jemin",
  "Status": "A:Done",
  "Comments": ""
},
{
  "Sr": 61,
  "Tasks": "Let teacher enrol automatically to moodle existing course if they are co-teacher ",
  "Assignee": "",
  "Status": "",
  "Comments": ""
},
{
  "Sr": 62,
  "Tasks": "remember username faculties",
  "Assignee": "",
  "Status": "",
  "Comments": ""
},
{
  "Sr": 63,
  "Tasks": "Link to enrollment and verify from email, a generic module",
  "Assignee": "Jimmy",
  "Status": "F:UnderDevelopment",
  "Comments": ""
},
{
  "Sr": 64,
  "Tasks": "send message to individual user ",
  "Assignee": "Jemin",
  "Status": "A:Done",
  "Comments": ""
},
{
  "Sr": 65,
  "Tasks": "Student/Univ.Panel profile - add achievements",
  "Assignee": "Jemin",
  "Status": "A:Done",
```

```
"Comments": ""
},
{
  "Sr": 66,
  "Tasks": "Departmental Library Management",
  "Assignee": "Jemin/Jimmy",
  "Status": "F:UnderDevelopment",
  "Comments": ""
},
{
  "Sr": 67,
  "Tasks": "Placement Events (AP-JT has some student work)",
  "Assignee": "",
  "Status": "",
  "Comments": ""
},
{
  "Sr": 68,
  "Tasks": "Hidden fields (Yii patched now) - (need to see what will happen on Yii upgrade)",
  "Assignee": "Jemin",
  "Status": "A:Done",
  "Comments": ""
},
{
  "Sr": 1,
  "Tasks": "Yii sessional out of attendance",
  "Assignee": "Kartik",
  "Status": "A: Done",
  "Comments": ""
},
{
  "Sr": 2,
  "Tasks": "Auto logout from moodle on Univ.panel/student logout.",
  "Assignee": "Lakhan",
  "Status": "A: Done",
  "Comments": "CleanupMoodleSession once"
},
{
  "Sr": 3,
  "Tasks": "Moodle changes for course cancel button",
  "Assignee": "Darpan",
  "Status": "A: Done",
```



```
"Comments": ""
},
{
  "Sr": 4,
  "Tasks": "Moodle auto create course null check",
  "Assignee": "Darpan",
  "Status": "A: Done",
  "Comments": ""
},
{
  "Sr": 5,
  "Tasks": "Yii moving Session to mysql db",
  "Assignee": "Lakhan",
  "Status": "A: Done",
  "Comments": ""
},
{
  "Sr": 6,
  "Tasks": "CSV to excel download",
  "Assignee": "Prasiddh",
  "Status": "A: Done",
  "Comments": ""
},
{
  "Sr": 7,
  "Tasks": "Lab Resource Management",
  "Assignee": "Kartik",
  "Status": "A: Done",
  "Comments": ""
},
{
  "Sr": 8,
  "Tasks": "Update code to id in moodle",
  "Assignee": "Kartik and Darpan",
  "Status": "A: Done",
  "Comments": ""
},
{
  "Sr": 9,
  "Tasks": "ISO Detail Analalysis",
  "Assignee": "Prasiddh",
  "Status": "A: Done ",
```

```
"Comments": ""
},
{
  "Sr": 10,
  "Tasks": "Moodle Query Optimization",
  "Assignee": "Darpan",
  "Status": "A: Done ",
  "Comments": ""
},
{
  "Sr": 11,
  "Tasks": "Available courses and my courses enrollment for teachers",
  "Assignee": "Kartik",
  "Status": "A: Done ",
  "Comments": ""
},
{
  "Sr": 12,
  "Tasks": "Optimize auto enrollment for moodle",
  "Assignee": "Darpan",
  "Status": "A: Done ",
  "Comments": ""
},
{
  "Sr": 13,
  "Tasks": "Studentkey in programst",
  "Assignee": "Prasiddh",
  "Status": "B: Tobedeployed",
  "Comments": ""
},
{
  "Sr": 14,
  "Tasks": "Forms information messages using table column comments",
  "Assignee": "Kartik",
  "Status": "C: Tobetested",
  "Comments": ""
},
{
  "Sr": 15,
  "Tasks": "Forms for student enrollment for different programs",
  "Assignee": "Darpan/Lakhan",
  "Status": "C: Tobetested",
```

```
"Comments": ""
},
{
  "Sr": 16,
  "Tasks": "SRAC - dropdown of enrollment, only for active enrollment period",
  "Assignee": "Darpan/Lakhan",
  "Status": "C: Tobetested",
  "Comments": ""
},
{
  "Sr": 17,
  "Tasks": "Copy from previous fee structure - extra changes.",
  "Assignee": "Lakhan",
  "Status": "D: Tobecodereviewed",
  "Comments": ""
},
{
  "Sr": 18,
  "Tasks": "Event Management",
  "Assignee": "Lakhan/Jemin",
  "Status": "F: UnderDevelopment",
  "Comments": ""
},
{
  "Sr": 19,
  "Tasks": "Adding IP to session in yii",
  "Assignee": "Lakhan",
  "Status": "F: UnderDevelopment",
  "Comments": ""
},
{
  "Sr": 20,
  "Tasks": "",
  "Assignee": "",
  "Status": "",
  "Comments": ""
},
{
  "Sr": 21,
  "Tasks": "moodle auto enrollment eventhough the batch/subject groups are not created.",
  "Assignee": "Jimmy",
  "Status": "A: Done ",
```

```
"Comments": ""
},
{
  "Sr": 22,
  "Tasks": "",
  "Assignee": "",
  "Status": "",
  "Comments": ""
},
{
  "Sr": 23,
  "Tasks": "TimeTable management",
  "Assignee": "",
  "Status": "",
  "Comments": ""
},
{
  "Sr": 24,
  "Tasks": "Faculty Feedback System, department feedback for graduates",
  "Assignee": "",
  "Status": "",
  "Comments": ""
},
{
  "Sr": 25,
  "Tasks": "Email for reset password, moodle course updates notification, results available notification.",
  "Assignee": "",
  "Status": "G: Partial",
  "Comments": ""
},
{
  "Sr": 26,
  "Tasks": "Transcript online request and print receipt. Upon paying the fee, admin shall have an inbox for transcript statuses and generate transcript.",
  "Assignee": "",
  "Status": "",
  "Comments": ""
},
{
  "Sr": 27,
  "Tasks": "Moodle quizzes or examination for faculty recruitment process",
```

```
"Assignee": "",
"Status": "",
"Comments": ""
},
{
  "Sr": 28,
  "Tasks": "University wide student email account.",
  "Assignee": "",
  "Status": "",
  "Comments": ""
},
{
  "Sr": 29,
  "Tasks": "Student panel, student shall be seeing books and their submission/renewal date for their library",
  "Assignee": "",
  "Status": "",
  "Comments": ""
},
{
  "Sr": 30,
  "Tasks": "Search engine on books' database.",
  "Assignee": "",
  "Status": "",
  "Comments": ""
},
{
  "Sr": 31,
  "Tasks": "Student/Alumni news, email based updates about university like Univ.connect.",
  "Assignee": "",
  "Status": "",
  "Comments": ""
},
{
  "Sr": 32,
  "Tasks": "Online assignment submission",
  "Assignee": "",
  "Status": "A:Done",
  "Comments": ""
},
{
  "Sr": 33,
```

```
"Tasks": "Managing placement of students, records and more.",
"Assignee": "",
"Status": "",
"Comments": ""
},
{
  "Sr": 34,
  "Tasks": "Interest based skills development via following credit system and more online courses.",
  "Assignee": "",
  "Status": "",
  "Comments": ""
},
{
  "Sr": 35,
  "Tasks": "Distance learning and knowledge sharing sessions. Broadcasting live lectures, etc.",
  "Assignee": "",
  "Status": "",
  "Comments": ""
},
{
  "Sr": 36,
  "Tasks": "Let faculty view their leave reports/records.",
  "Assignee": "",
  "Status": "",
  "Comments": ""
},
{
  "Sr": 37,
  "Tasks": "ISO related activities for faculties",
  "Assignee": "",
  "Status": "",
  "Comments": ""
},
{
  "Sr": 38,
  "Tasks": "",
  "Assignee": "",
  "Status": "",
  "Comments": ""
},
{
  "Sr": 39,
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    "Tasks": "Notice board for announcement",
    "Assignee": "",
    "Status": "G: Partial",
    "Comments": ""
  },
  {
    "Sr": 40,
    "Tasks": "News like upcoming events, etc",
    "Assignee": "",
    "Status": "G: Partial",
    "Comments": ""
  },
  {
    "Sr": 41,
    "Tasks": "Facility management (or facilities management or FM) is an integrated multidisciplinary, interdisciplinary\n field devoted to the coordination of space, infrastructure, people and \norganization.",
    "Assignee": "",
    "Status": "",
    "Comments": ""
  },
  {
    "Sr": 42,
    "Tasks": "Try admin php mysql - chive, adminer.",
    "Assignee": "Jimmy,Jemin",
    "Status": "A:Done",
    "Comments": ""
  },
  {
    "Sr": 43,
    "Tasks": "Drop all views of moodle; replace functionality or give drop sql;",
    "Assignee": "",
    "Status": "",
    "Comments": ""
  },
  {
    "Sr": 44,
    "Tasks": "Maintain Student and Univ.panel sessions in the same browser at the same time.",
    "Assignee": "",
    "Status": "",
    "Comments": ""
  },
  {

```

```
"Sr": 45,
"Tasks": "Yii booster 2.0 ext/bootstrap; may face issue of fullscreen with different browser;",
"Assignee": "Jemin",
"Status": "A:Done",
"Comments": ""
},
{
  "Sr": 46,
  "Tasks": "Faculties result Analysis for their current subject and previous results (data you can find average, variance, generate charts, \nfind the top 5 students, bottom 5 student,sorted list of students based on marks in the selected subject, etc.)",
  "Assignee": "Jemin",
  "Status": "A:Done",
  "Comments": ""
},
{
  "Sr": 47,
  "Tasks": "Graphical Layout update for student and for faculty. Information page.",
  "Assignee": "Jemin",
  "Status": "F: UnderDevelopment",
  "Comments": ""
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{
  "Sr": 48,
  "Tasks": "Have sysadmin login as admin to moodle",
  "Assignee": "Jimmy",
  "Status": "A:Done",
  "Comments": ""
},
{
  "Sr": 49,
  "Tasks": "sysadmin to chive and only if the redirect is a live instance.",
  "Assignee": "Jemin",
  "Status": "A:Done",
  "Comments": ""
},
{
  "Sr": 50,
  "Tasks": "Declaration form for Income Tax",
  "Assignee": "",
  "Status": "",
  "Comments": ""
}
```



```
},
{
  "Sr": 51,
  "Tasks": "Save password by firefox like client shall not popup if wrong password",
  "Assignee": "",
  "Status": "",
  "Comments": ""
},
{
  "Sr": 52,
  "Tasks": "messages",
  "Assignee": "Jemin",
  "Status": "A:Done",
  "Comments": ""
},
{
  "Sr": 53,
  "Tasks": "moodle password recovery",
  "Assignee": "",
  "Status": "",
  "Comments": ""
},
{
  "Sr": 54,
  "Tasks": "ISO Result page loading slow, on load branch list",
  "Assignee": "",
  "Status": "",
  "Comments": ""
},
{
  "Sr": 55,
  "Tasks": "gmail imap download latest emails inside student panel",
  "Assignee": "Jimmy",
  "Status": "A:Done",
  "Comments": ""
},
{
  "Sr": 56,
  "Tasks": "google calendar shows up in student/Univ.panel",
  "Assignee": "",
  "Status": "",
  "Comments": ""
}
```

```
    },
    {
      "Sr": 57,
      "Tasks": "Hidden/not declared yet results reports count, subjects of given exam code from  
tbllexexamresutl and sah",
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      "Status": "",
      "Comments": ""
    },
    {
      "Sr": 58,
      "Tasks": "Report for placement co-ordinator",
      "Assignee": "Jemin",
      "Status": "A:Done",
      "Comments": ""
    },
    {
      "Sr": 59,
      "Tasks": "Update all the forms look and feel",
      "Assignee": "NP",
      "Status": "A:Done",
      "Comments": ""
    },
    {
      "Sr": 60,
      "Tasks": "Disable download button on no data. Try to have global change.",
      "Assignee": "Jemin",
      "Status": "A:Done",
      "Comments": ""
    },
    {
      "Sr": 61,
      "Tasks": "Let teacher enrol automatically to moodle existing course if they are co-teacher ",
      "Assignee": "",
      "Status": "",
      "Comments": ""
    },
    {
      "Sr": 62,
      "Tasks": "remember username faculties",
      "Assignee": "",
      "Status": "",
```

```
"Comments": ""
},
{
  "Sr": 63,
  "Tasks": "Link to enrollment and verify from email, a generic module",
  "Assignee": "Jimmy",
  "Status": "F:UnderDevelopment",
  "Comments": ""
},
{
  "Sr": 64,
  "Tasks": "send message to individual user ",
  "Assignee": "Jemin",
  "Status": "A:Done",
  "Comments": ""
},
{
  "Sr": 65,
  "Tasks": "Student/Univ.Panel profile - add achievements",
  "Assignee": "Jemin",
  "Status": "A:Done",
  "Comments": ""
},
{
  "Sr": 66,
  "Tasks": "Departmental Library Management",
  "Assignee": "Jemin/Jimmy",
  "Status": "F:UnderDevelopment",
  "Comments": ""
},
{
  "Sr": 67,
  "Tasks": "Placement Events (AP-JT has some student work)",
  "Assignee": "",
  "Status": "",
  "Comments": ""
},
{
  "Sr": 68,
  "Tasks": "Hidden fields (Yii patched now) - (need to see what will happen on Yii upgrade)",
  "Assignee": "Jemin",
  "Status": "A:Done",
```

```
"Comments": ""  
}  
]
```

- b. XML file (eXtensible Markup Language) :** is a markup language that provides rules to define any data. Unlike other programming languages, XML cannot perform computing operations by itself. Instead, any programming language or software can be implemented for structured data management.

file2.py contains code to generate a JSON file for our
TasksAssignmentsActionItems.csv

Code:

```
import mysql.connector  
import xml.etree.ElementTree as ET  
  
# Connect to the MySQL database  
db = mysql.connector.connect(  
    host="192.168.29.150",  
    user="mt1_1",  
    password="mt1_1",  
    database="mt1_1"  
)  
  
# Create a cursor object to interact with the database  
cursor = db.cursor()  
  
# Query the database  
cursor.execute("SELECT * FROM taskassignmentsactionitems")  
  
# Fetch all the rows from the query result  
rows = cursor.fetchall()  
  
# Create the root of the XML tree  
root = ET.Element("TasksData")  
  
# Loop through the rows and create XML elements  
for row in rows:
```

```

task_element = ET.SubElement(root, "Task")

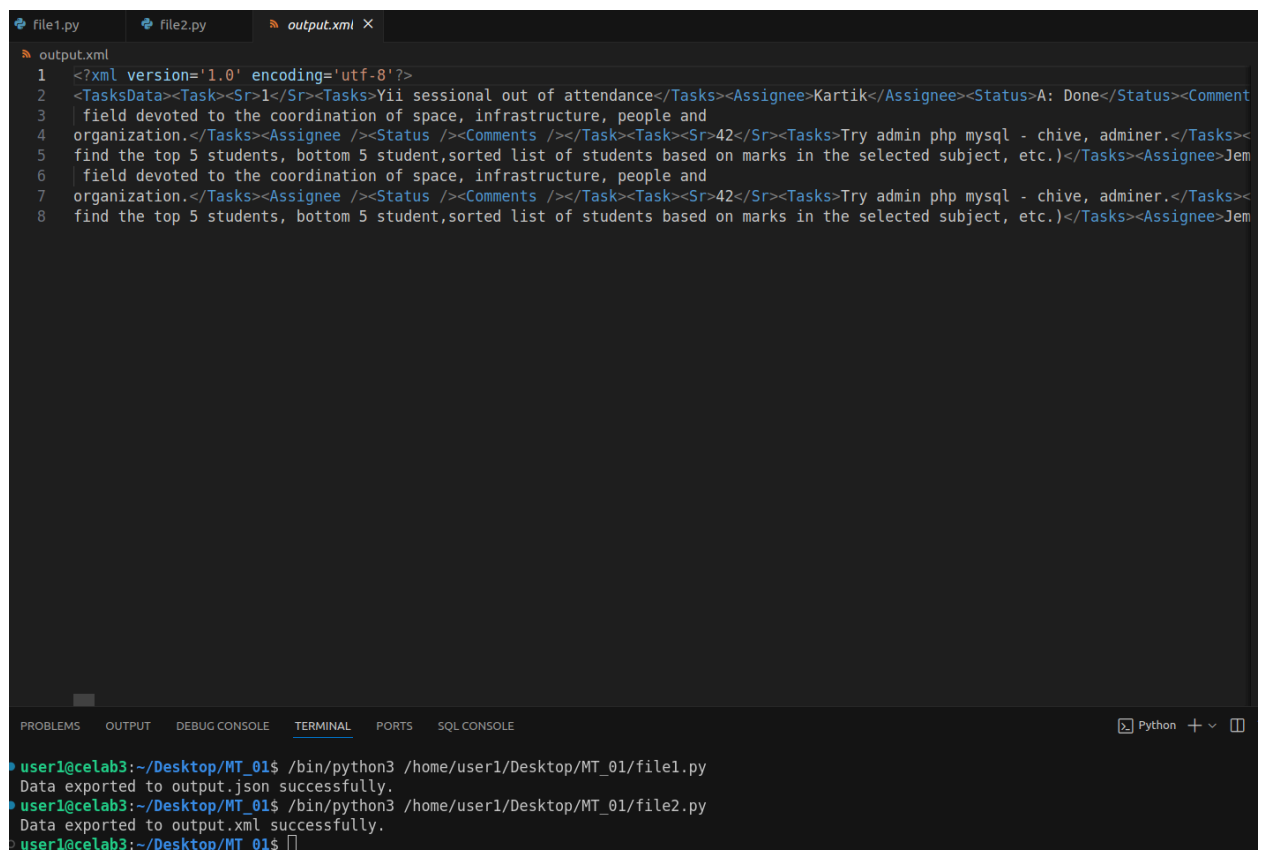
# Create sub-elements for each column in the row
ET.SubElement(task_element, "Sr").text = str(row[0])
ET.SubElement(task_element, "Tasks").text = row[1]
ET.SubElement(task_element, "Assignee").text = row[2]
ET.SubElement(task_element, "Status").text = row[3]
ET.SubElement(task_element, "Comments").text = row[3]

# Create an ElementTree object and write it to an XML file
tree = ET.ElementTree(root)
tree.write("output.xml", encoding="utf-8", xml_declaration=True)

# Close the cursor and connection
cursor.close()
db.close()

print("Data exported to output.xml successfully.")

```



```

1 <?xml version='1.0' encoding='utf-8'?>
2 <TasksData><Task><Sr>1</Sr><Tasks>Yii sessional out of attendance</Tasks><Assignee>Kartik</Assignee><Status>A: Done</Status><Comment
3 | field devoted to the coordination of space, infrastructure, people and
4 organization.</Tasks><Assignee /><Status /><Comments /></Task><Task><Sr>42</Sr><Tasks>Try admin php mysql - chive, adminer.</Tasks><
5 find the top 5 students, bottom 5 student,sorted list of students based on marks in the selected subject, etc.)</Tasks><Assignee>Jem
6 | field devoted to the coordination of space, infrastructure, people and
7 organization.</Tasks><Assignee /><Status /><Comments /></Task><Task><Sr>42</Sr><Tasks>Try admin php mysql - chive, adminer.</Tasks><
8 find the top 5 students, bottom 5 student,sorted list of students based on marks in the selected subject, etc.)</Tasks><Assignee>Jem

```

```

user1@celab3:~/Desktop/MT_01$ /bin/python3 /home/user1/Desktop/MT_01/file1.py
Data exported to output.json successfully.
user1@celab3:~/Desktop/MT_01$ /bin/python3 /home/user1/Desktop/MT_01/file2.py
Data exported to output.xml successfully.
user1@celab3:~/Desktop/MT_01$

```

Output:

```

<?xml version='1.0' encoding='utf-8'?>
<TasksData><Task><Sr>1</Sr><Tasks>Yii sessional out of
attendance</Tasks><Assignee>Kartik</Assignee><Status>A: Done</Status><Comments>A:
Done</Comments></Task><Task><Sr>2</Sr><Tasks>Auto logout from moodle on Univ.panel/student
logout.</Tasks><Assignee>Lakhan</Assignee><Status>A: Done</Status><Comments>A:
Done</Comments></Task><Task><Sr>3</Sr><Tasks>Moodle changes for course cancel
button</Tasks><Assignee>Darpan</Assignee><Status>A: Done</Status><Comments>A:
Done</Comments></Task><Task><Sr>4</Sr><Tasks>Moodle auto create course null
check</Tasks><Assignee>Darpan</Assignee><Status>A: Done</Status><Comments>A:
Done</Comments></Task><Task><Sr>5</Sr><Tasks>Yii moving Session to mysql
db</Tasks><Assignee>Lakhan</Assignee><Status>A: Done</Status><Comments>A:
Done</Comments></Task><Task><Sr>6</Sr><Tasks>CSV to excel
download</Tasks><Assignee>Prasiddh</Assignee><Status>A: Done</Status><Comments>A:
Done</Comments></Task><Task><Sr>7</Sr><Tasks>Lab Resource
Management</Tasks><Assignee>Kartik</Assignee><Status>A: Done</Status><Comments>A:
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moodle</Tasks><Assignee>Kartik and Darpan</Assignee><Status>A: Done</Status><Comments>A:
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Optimization</Tasks><Assignee>Darpan</Assignee><Status>A: Done </Status><Comments>A: Done
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Tobedeployed</Comments></Task><Task><Sr>14</Sr><Tasks>Forms information messages using table
column comments</Tasks><Assignee>Kartik</Assignee><Status>C: Tobetested</Status><Comments>C:
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Tobetested</Status><Comments>C: Tobetested</Comments></Task><Task><Sr>17</Sr><Tasks>Copy
from previous fee structure - extra changes.</Tasks><Assignee>Lakhan</Assignee><Status>D:
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Tobecodereviewed</Comments></Task><Task><Sr>18</Sr><Tasks>Event
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UnderDevelopment</Status><Comments>F:
UnderDevelopment</Comments></Task><Task><Sr>19</Sr><Tasks>Adding IP to session in
yii</Tasks><Assignee>Lakhan</Assignee><Status>F: UnderDevelopment</Status><Comments>F:

```

UnderDevelopment</Comments></Task><Task><Sr>20</Sr><Tasks> /><Assignee> /><Status> /><Comments> /></Task><Task><Sr>21</Sr><Tasks>moodle auto enrollment eventthough the batch/subject groups are not created.</Tasks><Assignee>Jimmy</Assignee><Status>A: Done</Status><Comments>A: Done </Comments></Task><Task><Sr>22</Sr><Tasks> /><Assignee> /><Status> /><Comments> /></Task><Task><Sr>23</Sr><Tasks>TimeTable management</Tasks><Assignee> /><Status> /><Comments> /></Task><Task><Sr>24</Sr><Tasks>Faculty Feedback System, department feedback for graduates</Tasks><Assignee> /><Status> /><Comments> /></Task><Task><Sr>25</Sr><Tasks>Email for reset password, moodle cource updates notification, results available notification.</Tasks><Assignee> /><Status>G: Partial</Status><Comments>G: Partial</Comments></Task><Task><Sr>26</Sr><Tasks>Transcript online request and print receipt. Upon paying the fee, admin shall have an inbox for transcript statuses and generate transcript.</Tasks><Assignee> /><Status> /><Comments> /></Task><Task><Sr>27</Sr><Tasks>Moodle quizzes or examination for faculty recruitment process</Tasks><Assignee> /><Status> /><Comments> /></Task><Task><Sr>28</Sr><Tasks>University wide student email account.</Tasks><Assignee> /><Status> /><Comments> /></Task><Task><Sr>29</Sr><Tasks>Student panel, student shall be seeing books and their submission/renewal date for their library</Tasks><Assignee> /><Status> /><Comments> /></Task><Task><Sr>30</Sr><Tasks>Search engine on books' database.</Tasks><Assignee> /><Status> /><Comments> /></Task><Task><Sr>31</Sr><Tasks>Student/Alumni news, email based updates about university like Univ.connect.</Tasks><Assignee> /><Status> /><Comments> /></Task><Task><Sr>32</Sr><Tasks>Online assignment submission</Tasks><Assignee> /><Status>A:Done</Status><Comments>A:Done</Comments></Task><Task><Sr>33</Sr><Tasks>Managing placement of students, records and more.</Tasks><Assignee> /><Status> /><Comments> /></Task><Task><Sr>34</Sr><Tasks>Interest based skills development via following credit system and more online courses.</Tasks><Assignee> /><Status> /><Comments> /></Task><Task><Sr>35</Sr><Tasks>Distance learning and knowledge sharing sessions. Broadcasting live lectures, etc.</Tasks><Assignee> /><Status> /><Comments> /></Task><Task><Sr>36</Sr><Tasks>Let faculty view their leave reports/records.</Tasks><Assignee> /><Status> /><Comments> /></Task><Task><Sr>37</Sr><Tasks>ISO related activities for faculties</Tasks><Assignee> /><Status> /><Comments> /></Task><Task><Sr>38</Sr><Tasks> /><Assignee> /><Status> /><Comments> /></Task><Task><Sr>39</Sr><Tasks>Notice board for announcement</Tasks><Assignee> /><Status>G: Partial</Status><Comments>G: Partial</Comments></Task><Task><Sr>40</Sr><Tasks>News like upcoming events, etc</Tasks><Assignee> /><Status>G: Partial</Status><Comments>G: Partial</Comments></Task><Task><Sr>41</Sr><Tasks>Facility management (or facilities management or FM) is an integrated multidisciplinary, interdisciplinary field devoted to the coordination of space, infrastructure, people and organization.</Tasks><Assignee> /><Status> /><Comments> /></Task><Task><Sr>42</Sr><Tasks>Try admin php mysql - chive, adminer.</Tasks><Assignee>Jimmy,Jemin</Assignee><Status>A:Done</Status><Comments>A:Done</Comments></Task><Task><Sr>43</Sr><Tasks>Drop all views of moodle; replace functionality or give drop sql;</Tasks><Assignee> /><Status> /><Comments> /></Task><Task><Sr>44</Sr><Tasks>Maintain Student and Univ.panel sessions in the same browser at the same time.</Tasks><Assignee> /><Status> /><Comments> /></Task><Task><Sr>45</Sr><Tasks>Yii booster 2.0 ext/bootstrap; may face issue of

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</Tasks><Assignee>Jemin</Assignee><Status>A:Done</Status><Comments>A:Done</Comments></Task><Task><Sr>46</Sr><Tasks>Faculties result Analysis for their current subject and previous results (data you can find average, variance, generate charts, find the top 5 students, bottom 5 student,sorted list of students based on marks in the selected subject, etc.)</Tasks><Assignee>Jemin</Assignee><Status>A:Done</Status><Comments>A:Done</Comments></Task><Task><Sr>47</Sr><Tasks>Graphical Layout update for student and for faculty. Information page.</Tasks><Assignee>Jemin</Assignee><Status>F: UnderDevelopment</Status><Comments>F: UnderDevelopment</Comments></Task><Task><Sr>48</Sr><Tasks>Have sysadmin login as admin to moodle</Tasks><Assignee>Jimmy</Assignee><Status>A:Done</Status><Comments>A:Done</Comments></Task><Task><Sr>49</Sr><Tasks>sysadmin to chive and only if the redirect is a live instance.</Tasks><Assignee>Jemin</Assignee><Status>A:Done</Status><Comments>A:Done</Comments></Task><Task><Sr>50</Sr><Tasks>Declaration form for Income Tax</Tasks><Assignee /><Status /><Comments /></Task><Task><Sr>51</Sr><Tasks>Save password by firefox like client shall not popup if wrong password</Tasks><Assignee /><Status /><Comments /></Task><Task><Sr>52</Sr><Tasks>messages</Tasks><Assignee>Jemin</Assignee><Status>A:Done</Status><Comments>A:Done</Comments></Task><Task><Sr>53</Sr><Tasks>moodle password recovery</Tasks><Assignee /><Status /><Comments /></Task><Task><Sr>54</Sr><Tasks>ISO Result page loading slow, on load branch list</Tasks><Assignee /><Status /><Comments /></Task><Task><Sr>55</Sr><Tasks>gmail imap download latest emails inside student panel</Tasks><Assignee>Jimmy</Assignee><Status>A:Done</Status><Comments>A:Done</Comments></Task><Task><Sr>56</Sr><Tasks>google calendar shows up in student/Univ.panel</Tasks><Assignee /><Status /><Comments /></Task><Task><Sr>57</Sr><Tasks>Hidden/not declared yet results reports count, subjects of given exam code from tblexexamresutl and sah</Tasks><Assignee /><Status /><Comments /></Task><Task><Sr>58</Sr><Tasks>Report for placement co-ordinator</Tasks><Assignee>Jemin</Assignee><Status>A:Done</Status><Comments>A:Done</Comments></Task><Task><Sr>59</Sr><Tasks>Update all the forms look and feel</Tasks><Assignee>NP</Assignee><Status>A:Done</Status><Comments>A:Done</Comments></Task><Task><Sr>60</Sr><Tasks>Disable download button on no data. Try to have global change.</Tasks><Assignee>Jemin</Assignee><Status>A:Done</Status><Comments>A:Done</Comments></Task><Task><Sr>61</Sr><Tasks>Let teacher enrol automatically to moodle existing course if they are co-teacher </Tasks><Assignee /><Status /><Comments /></Task><Task><Sr>62</Sr><Tasks>remember username faculties</Tasks><Assignee /><Status /><Comments /></Task><Task><Sr>63</Sr><Tasks>Link to enrollment and verify from email, a generic module</Tasks><Assignee>Jimmy</Assignee><Status>F:UnderDevelopment</Status><Comments>F:UnderDevelopment</Comments></Task><Task><Sr>64</Sr><Tasks>send message to individual user</Tasks><Assignee>Jemin</Assignee><Status>A:Done</Status><Comments>A:Done</Comments></Task><Task><Sr>65</Sr><Tasks>Student/Univ.Panel profile - add achievements</Tasks><Assignee>Jemin</Assignee><Status>A:Done</Status><Comments>A:Done</Comments></Task><Task><Sr>66</Sr><Tasks>Departmental Library Management</Tasks><Assignee>Jemin/Jimmy</Assignee><Status>F:UnderDevelopment</Status><Comments>F:UnderDevelopment</Comments></Task><Task><Sr>67</Sr><Tasks>Placement Events (AP-JT


```

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Graphical Layout update for student and for faculty. Information page.

Have sysadmin login as admin to moodle

sysadmin to chive and only if the redirect is a live instance.

Declaration form for Income Tax

Save password by firefox like client shall not popup if wrong password

messages

moodle password recovery

ISO Result page loading slow, on load branch list

gmail imap download latest emails inside student panel

google calendar shows up in student/Univ.panel

Hidden/not declared yet results reports count, subjects of given exam code from tblectexamresutl and sah

Report for placement co-ordinator

Update all the forms look and feel

Disable download button on no data. Try to have global change.

Let teacher enrol automatically to moodle existing course if they are co-teacher

remember username faculties

Link to enrollment and verify from email, a generic module

send message to individual user

Student/Univ.Panel profile - add achievements

Departmental Library

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Management</Tasks><Assignee>Jemin/Jimmy</Assignee><Status>F:UnderDevelopment</Status><Comments>F:UnderDevelopment</Comments></Task><Task><Sr>67</Sr><Tasks>Placement Events (AP-JT has some student work)</Tasks><Assignee /><Status /><Comments /></Task><Task><Sr>68</Sr><Tasks>Hidden fields (Yii patched now) - (need to see what will happen on Yii upgrade)</Tasks><Assignee>Jemin</Assignee><Status>A:Done</Status><Comments>A:Done</Comments></Task></TasksData>

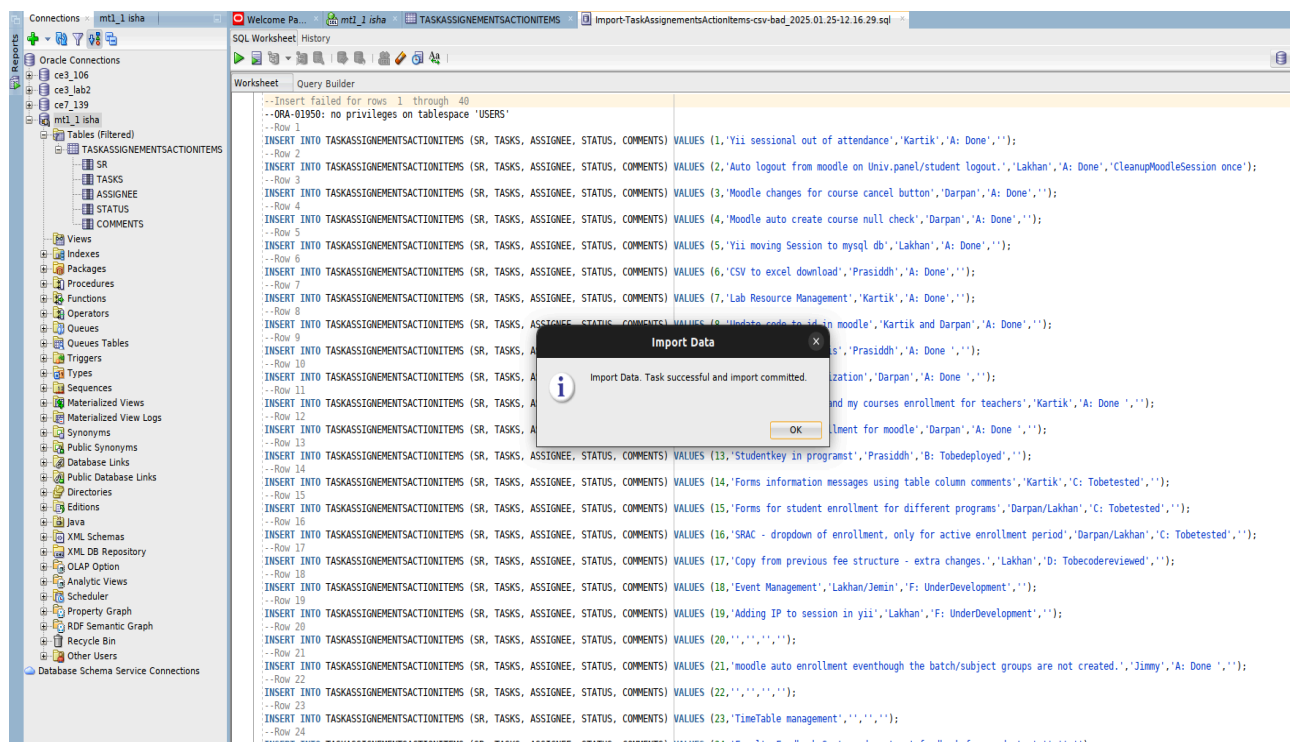
```

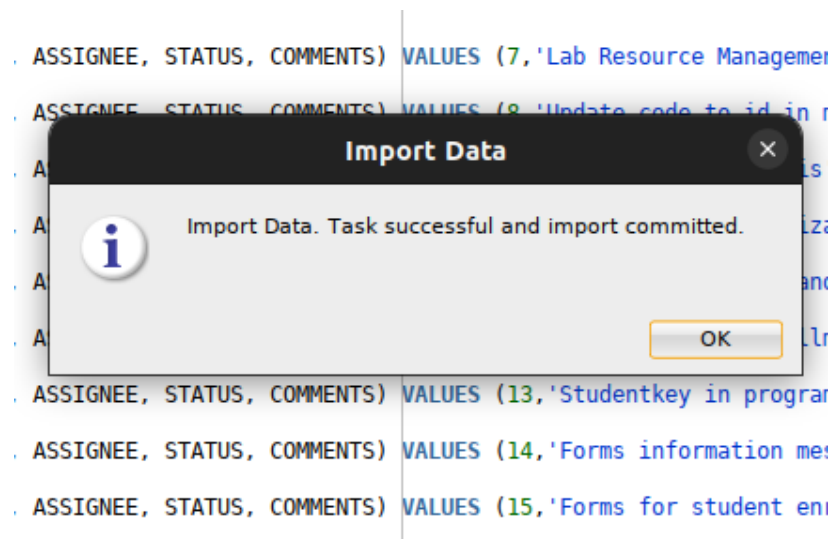
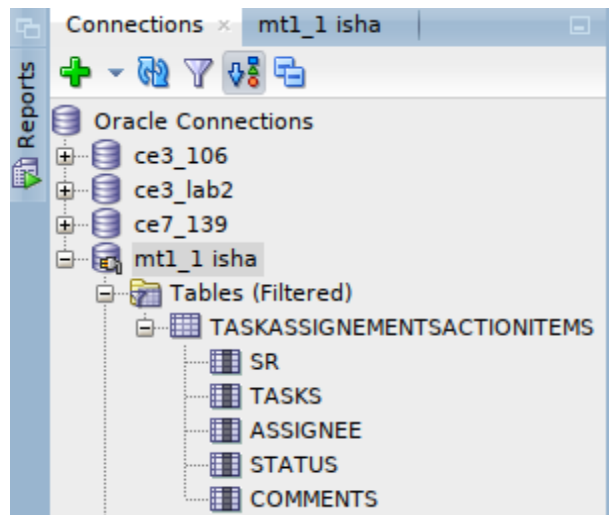
4. Import XML/JSON/CSV file into another database/table. I.e MySQL, MS Access, Oracle, etc.

Here, I have imported the .csv file on another database, the Oracle database.

The connection is established with hostname : 192.168.29.152 and port : 1521 for my roll number.

Below given snapshots show how the table is imported under mt1_1 isha database.



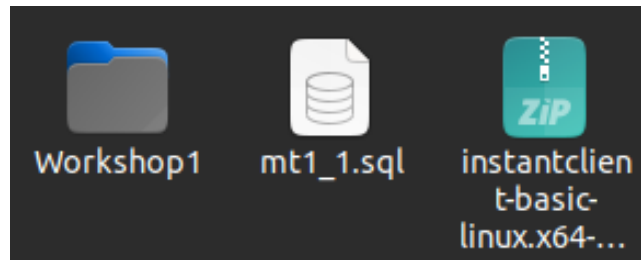


5. Export database dump for data migration/archival.

A database dump is a snapshot or a backup of a database at a specific point in time. It typically consists of a file (or set of files) that contains the structure and data of the entire database or a subset of it. The process involves using command - line tools, but GUI tools like PhpMyAdmin or MySQL Workbench can also achieve this with similar steps.

Database dump files also serve as backups that allow administrators to restore databases to a previous state in case of data loss or corruption.

I have directly exported the .csv file into an SQL dump using myphpAdmin from the options in navigation panel.



This mt1_1.sql file is attached along with this pdf on google classroom.

6. Validate/Map Data types across different Database systems when migrating from one to another.

When migrating between MySQL and Oracle, differences in data types can cause issues. We can validate and map the data types as follows.

Data Type Mapping Table

MySQL Data Type	Oracle Data Type	Notes
INT	NUMBER	Use NUMBER with appropriate precision and scale.
TINYINT	NUMBER(3)	Small integer values.
BIGINT	NUMBER(19)	For larger integer values.
DECIMAL	NUMBER(p, s)	Match precision (p) and scale (s).
VARCHAR(n)	VARCHAR2(n)	Match size (n), with a maximum of 4000 in Oracle.
TEXT	CLOB	Use CLOB for longer text data.
DATE	DATE	Direct mapping, but ensure formats match.
DATETIME, TIMESTAMP	TIMESTAMP	MySQL DATETIME maps to Oracle TIMESTAMP.

BLOB	BLOB	Both databases support binary large objects.
ENUM	VARCHAR2 or CHECK CONSTRAINT	Replace ENUM with a VARCHAR2 column and add a CHECK constraint.

It's essential to not only map data types but also properly handle keys and constraints to maintain database integrity during migration. Here's how you can include primary keys, foreign keys, and unique constraints when mapping data between MySQL and Oracle:

Data Type and Key Mapping Table

MySQL Data Type	Oracle Data Type	Key Mapping
INT, BIGINT	NUMBER(p)	Use PRIMARY KEY or UNIQUE for unique identifiers.
VARCHAR(n)	VARCHAR2(n)	Can be used as part of UNIQUE or PRIMARY KEY.
TEXT	CLOB	Avoid using as a key column (not indexable).
DATE	DATE	Can be indexed if needed but not as a primary key.
ENUM	VARCHAR2 or CHECK CONSTRAINT	Add constraints to validate allowed values.
Foreign Keys	Foreign Key Constraints	Map relationships between tables explicitly using REFERENCES.

Summarised learning:

I learned how to deal with digital data. Developed an attitude towards observing the surroundings and be digitally aware of the generation of data and handling required for digitization/computerization/automation of the processes involved. This sharpened my existing skills of my data analytics and data science journey.