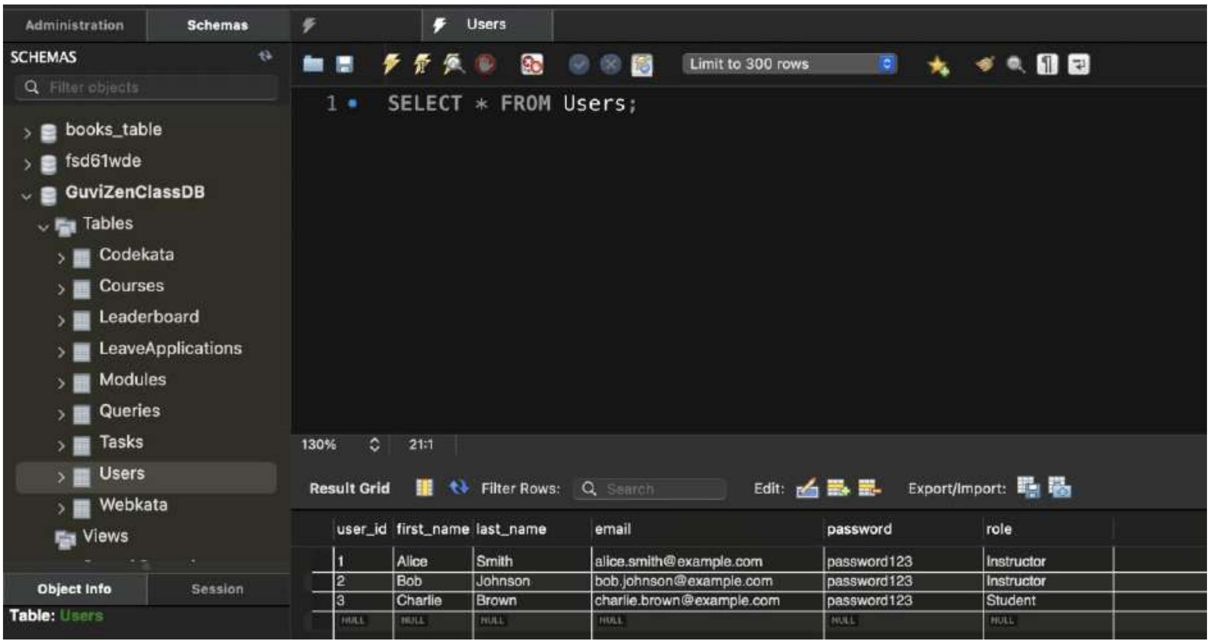
Design DB model for Guvi Zen class:

Users:

```
create table users (
  user_id int not null auto_increment,
  first_name varchar(50) not null,
  last_name varchar (50) not null,
  email varchar (100) not null unique,
  password varchar(255) not null,
  role varchar(20) not null,
  primary key (user_id)
);

insert into users (first_name, last_name, email, password, role)
values
('Alice', 'Smith', 'alice.smith@example.com', 'password123', 'Instructor'),
('Bob', 'Johnson', 'bob.johnson@example.com', 'password123', 'Instructor'),
('Charlie', 'Brown', 'charlie.brown@example.com', 'password123', 'Student');
```

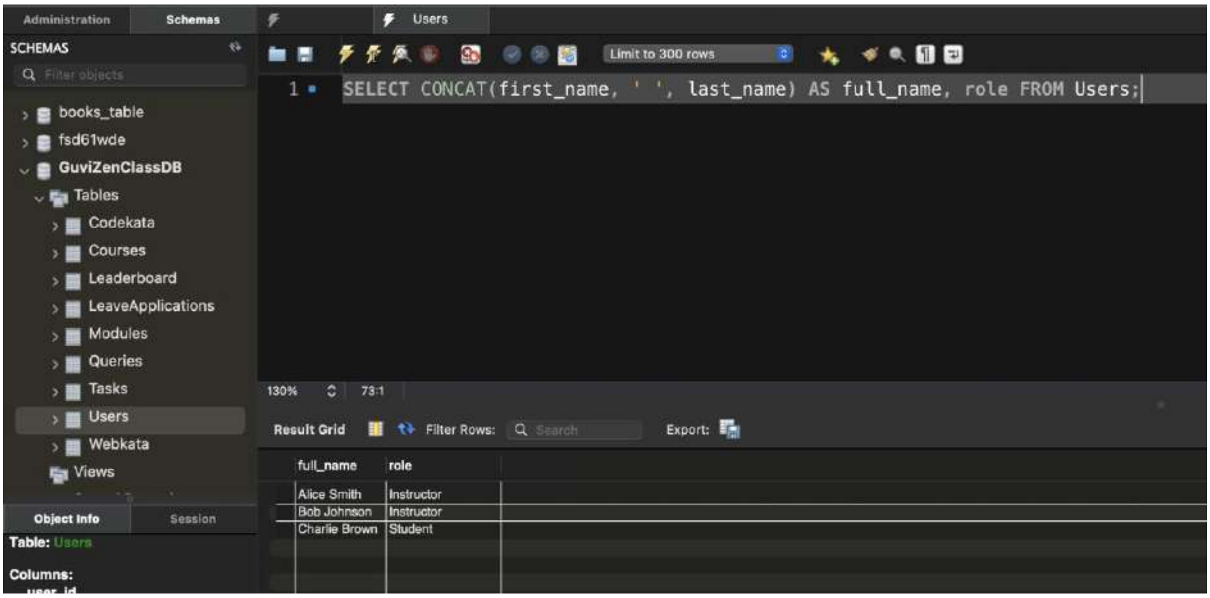
Output:



```
1 • SELECT * FROM Users;
```

user_id	first_name	last_name	email	password	role
1	Alice	Smith	alice.smith@example.com	password123	Instructor
2	Bob	Johnson	bob.johnson@example.com	password123	Instructor
3	Charlie	Brown	charlie.brown@example.com	password123	Student
NULL	NULL	NULL	NULL	NULL	NULL

List all users, showing their full name and role from users table ?



```sql
SELECT CONCAT(first_name, ' ', last_name) AS full_name, role FROM Users;
```

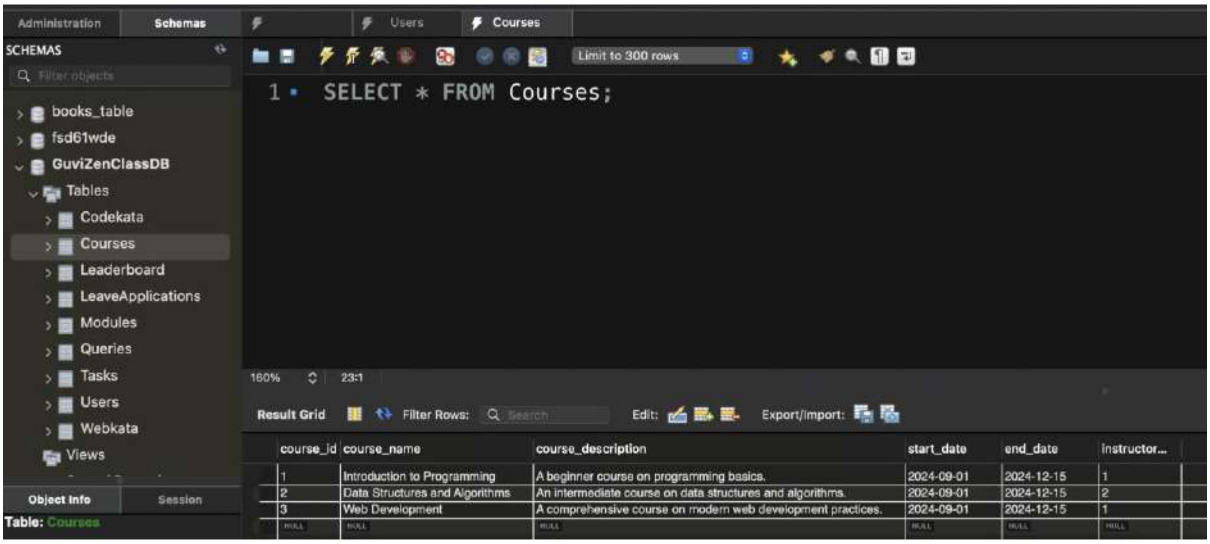
full_name	role
Alice Smith	Instructor
Bob Johnson	Instructor
Charlie Brown	Student

Courses:

```
create table courses (
  course_id int not null auto_increment,
  course_name varchar(100) not null,
  course_description text,
  start_date date not null,
  end_date date not null,
  instructor_id int not null,
  primary key (course_id),
  foreign key (instructor_id) references users(user_id)
);

insert into courses (course_name, course_description, start_date, end_date,
instructor_id)
values
('Introduction to Programming', 'A beginner course on programming basics.',
'2024-09-01', '2024-12-15', 1),
('Data Structures and Algorithms', 'An intermediate course on data structures
and algorithms.', '2024-09-01', '2024-12-15', 2),
('Web Development', 'A comprehensive course on modern web development
practices.', '2024-09-01', '2024-12-15', 1);
```

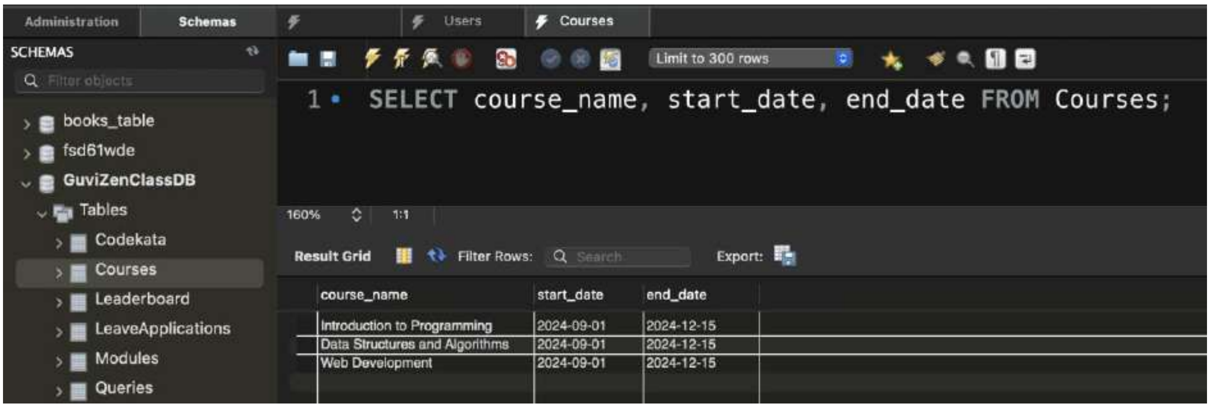
Output:



```
SELECT * FROM Courses;
```

course_id	course_name	course_description	start_date	end_date	instructor...
1	Introduction to Programming	A beginner course on programming basics.	2024-09-01	2024-12-15	1
2	Data Structures and Algorithms	An intermediate course on data structures and algorithms.	2024-09-01	2024-12-15	2
3	Web Development	A comprehensive course on modern web development practices.	2024-09-01	2024-12-15	1
NULL	NULL	NULL	NULL	NULL	NULL

List all courses along with start and end date ?



```
SELECT course_name, start_date, end_date FROM Courses;
```

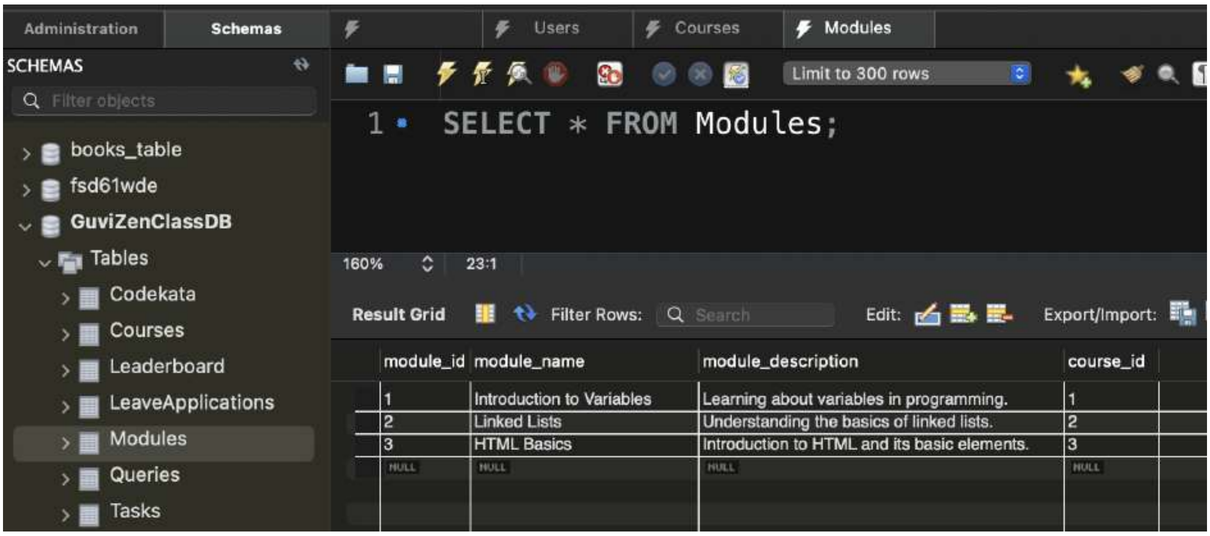
course_name	start_date	end_date
Introduction to Programming	2024-09-01	2024-12-15
Data Structures and Algorithms	2024-09-01	2024-12-15
Web Development	2024-09-01	2024-12-15

Modules:

```
create table modules (
  module_id int not null auto_increment,
  module_name varchar(100) not null,
  module_description text,
  course_id int not null,
  primary key (module_id),
  foreign key (course_id) references courses(course_id)
);
```

insert into modules (module_name, module_description, course_id)
values
('Introduction to Variables', 'Learning about variables in programming.', 1),
('Linked Lists', 'Understanding the basics of linked lists.', 2),
('HTML Basics', 'Introduction to HTML and its basic elements.', 3);

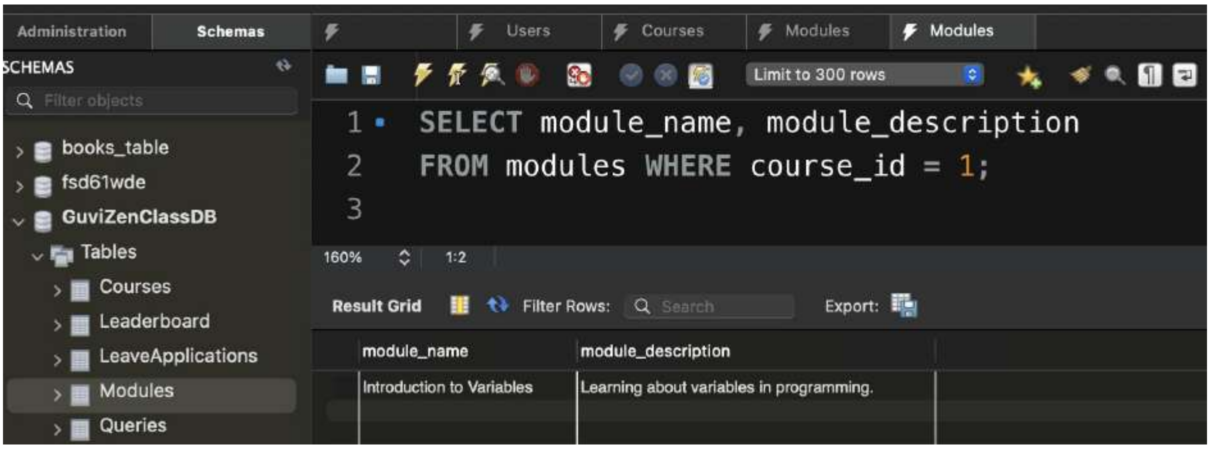
Output:



```
SELECT * FROM Modules;
```

module_id	module_name	module_description	course_id
1	Introduction to Variables	Learning about variables in programming.	1
2	Linked Lists	Understanding the basics of linked lists.	2
3	HTML Basics	Introduction to HTML and its basic elements.	3
NULL	NULL	NULL	NULL

Module along with description for specific course identify by the course_id:



```
SELECT module_name, module_description
FROM modules WHERE course_id = 1;
```

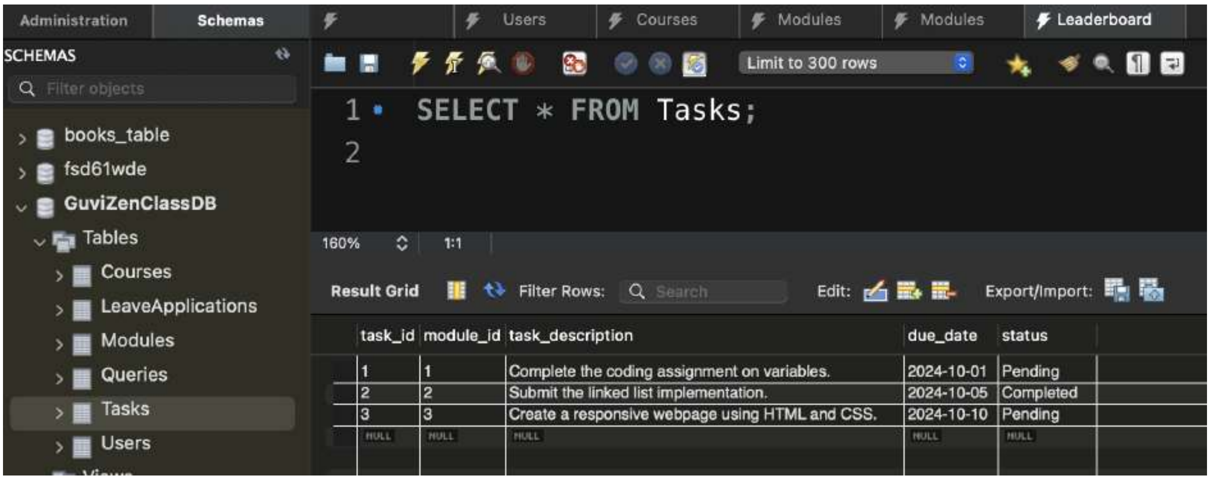
module_name	module_description
Introduction to Variables	Learning about variables in programming.

Tasks:

```
create table tasks (
  task_id int not null auto_increment,
  module_id int not null,
  task_description text,
  due_date date,
  status varchar(20),
  primary key (task_id),
  foreign key (module_id) references modules(module_id)
);

insert into tasks (module_id, task_description, due_date, status) values
(1, 'complete the coding assignment on variables.', '2024-10-01', 'pending'),
(2, 'submit the linked list implementation.', '2024-10-05', 'completed'),
(3, 'create a responsive webpage using html and css.', '2024-10-10', 'pending');
```

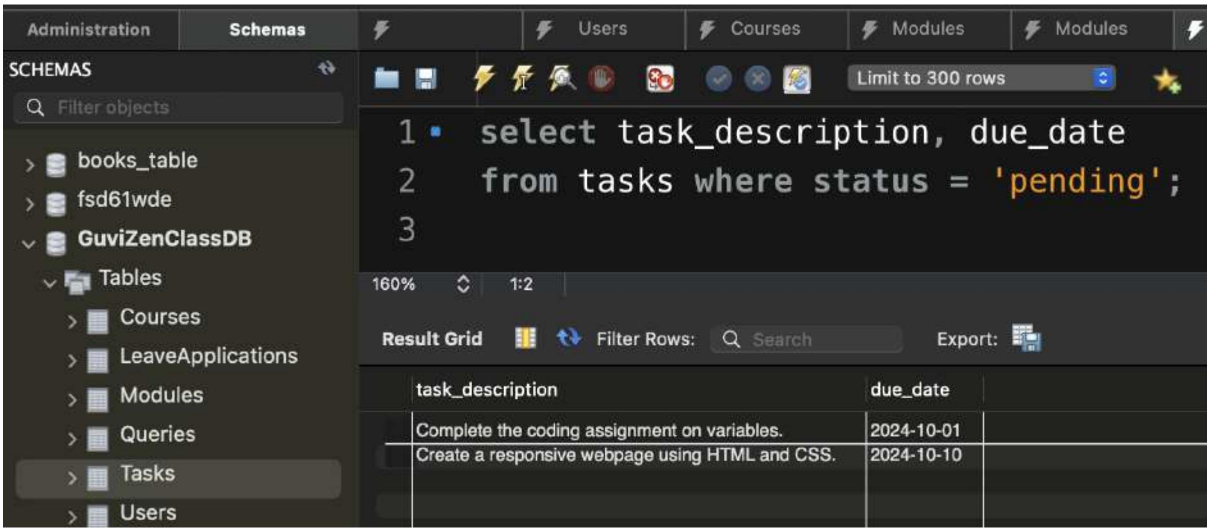
Output:



```
SELECT * FROM Tasks;
```

task_id	module_id	task_description	due_date	status
1	1	Complete the coding assignment on variables.	2024-10-01	Pending
2	2	Submit the linked list implementation.	2024-10-05	Completed
3	3	Create a responsive webpage using HTML and CSS.	2024-10-10	Pending
NULL	NULL	NULL	NULL	NULL

List all tasks that are currently pending along with their due dates:



```
select task_description, due_date
from tasks where status = 'pending';
```

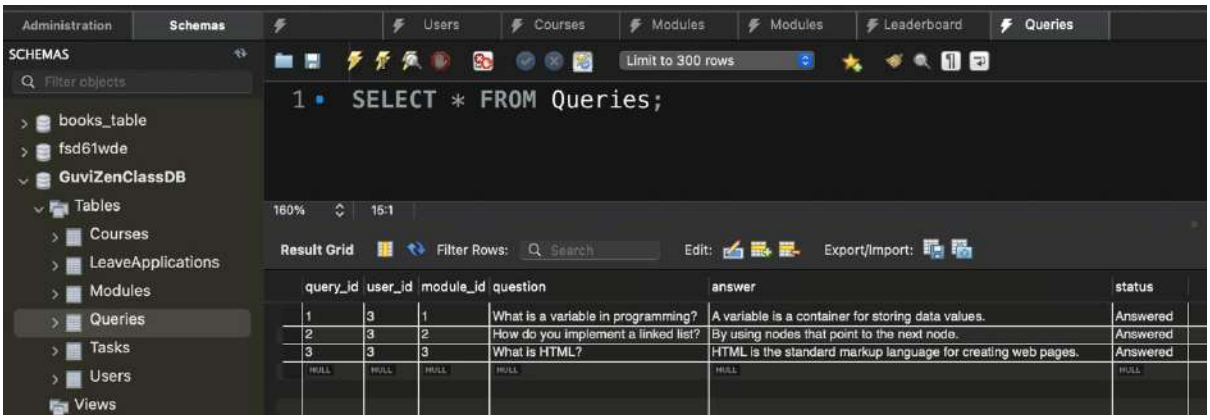
task_description	due_date
Complete the coding assignment on variables.	2024-10-01
Create a responsive webpage using HTML and CSS.	2024-10-10

Queries:

```
create table queries (
  query_id int not null auto_increment,
  user_id int not null,
  module_id int not null,
  question text,
  answer text,
  status varchar(20),
  primary key (query_id),
  foreign key (user_id) references users(user_id),
  foreign key (module_id) references modules(module_id)
);

insert into queries (user_id, module_id, question, answer, status) values
(3, 1, 'what is a variable in programming?', 'a variable is a container for storing data values.', 'answered'),
(3, 2, 'how do you implement a linked list?', 'by using nodes that point to the next node.', 'answered'),
(3, 3, 'what is html?', 'html is the standard markup language for creating web pages.', 'answered');
```

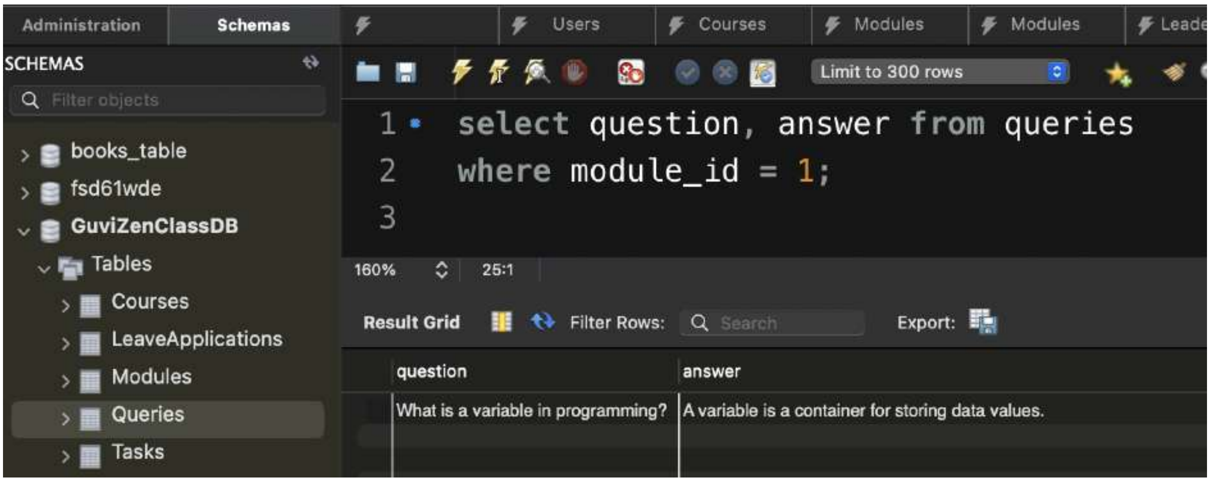
Output:



```
SELECT * FROM Queries;
```

query_id	user_id	module_id	question	answer	status
1	3	1	What is a variable in programming?	A variable is a container for storing data values.	Answered
2	3	2	How do you implement a linked list?	By using nodes that point to the next node.	Answered
3	3	3	What is HTML?	HTML is the standard markup language for creating web pages.	Answered
NULL	NULL	NULL	NULL	NULL	NULL

Retrieve all the questions and their corresponding answers for a specific module:



```
select question, answer from queries
where module_id = 1;
```

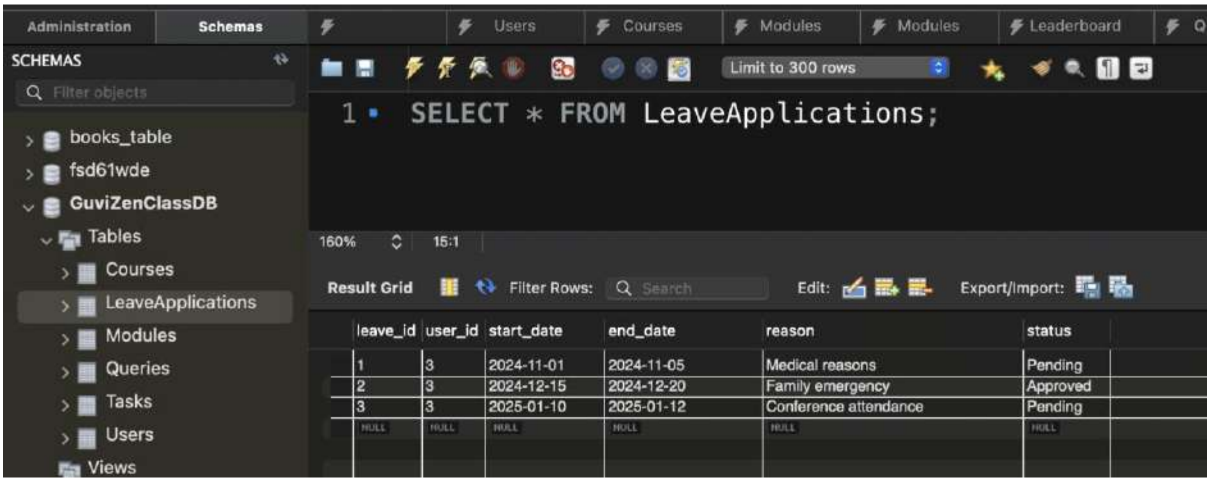
question	answer
What is a variable in programming?	A variable is a container for storing data values.

LeaveApplication:

```
create table leaveapplications (
  leave_id int not null auto_increment,
  user_id int not null,
  start_date date not null,
  end_date date not null,
  reason text,
  status varchar(20) default 'pending',
  primary key (leave_id),
  foreign key (user_id) references users(user_id)
);

insert into leaveapplications (user_id, start_date, end_date, reason, status)
values
(3, '2024-11-01', '2024-11-05', 'medical reasons', 'pending'),
(3, '2024-12-15', '2024-12-20', 'family emergency', 'approved'),
(3, '2025-01-10', '2025-01-12', 'conference attendance', 'pending');
```

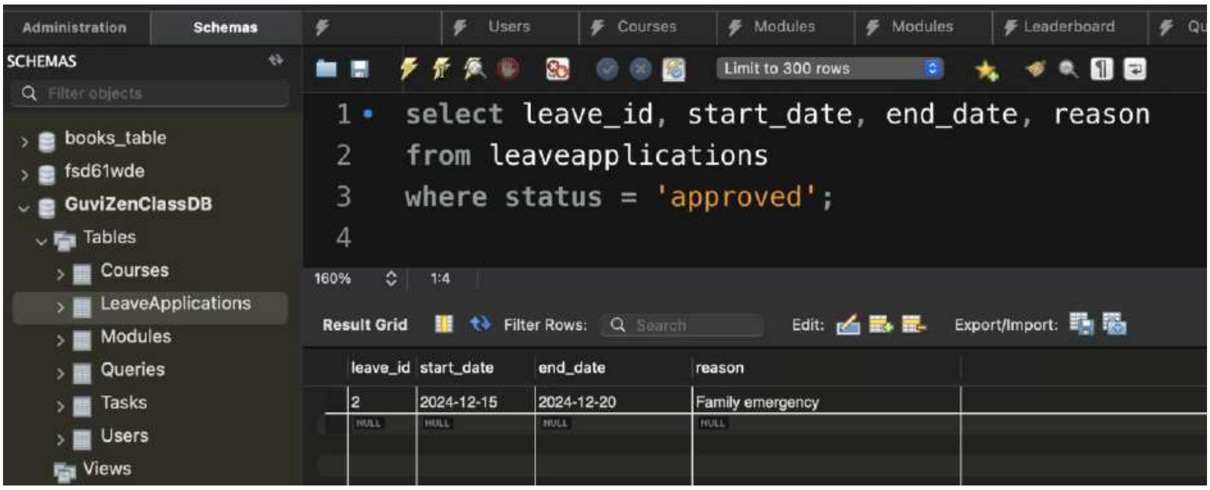
Output:



```
SELECT * FROM LeaveApplications;
```

leave_id	user_id	start_date	end_date	reason	status
1	3	2024-11-01	2024-11-05	Medical reasons	Pending
2	3	2024-12-15	2024-12-20	Family emergency	Approved
3	3	2025-01-10	2025-01-12	Conference attendance	Pending
NULL	NULL	NULL	NULL	NULL	NULL

List all leave applications that have been approved:



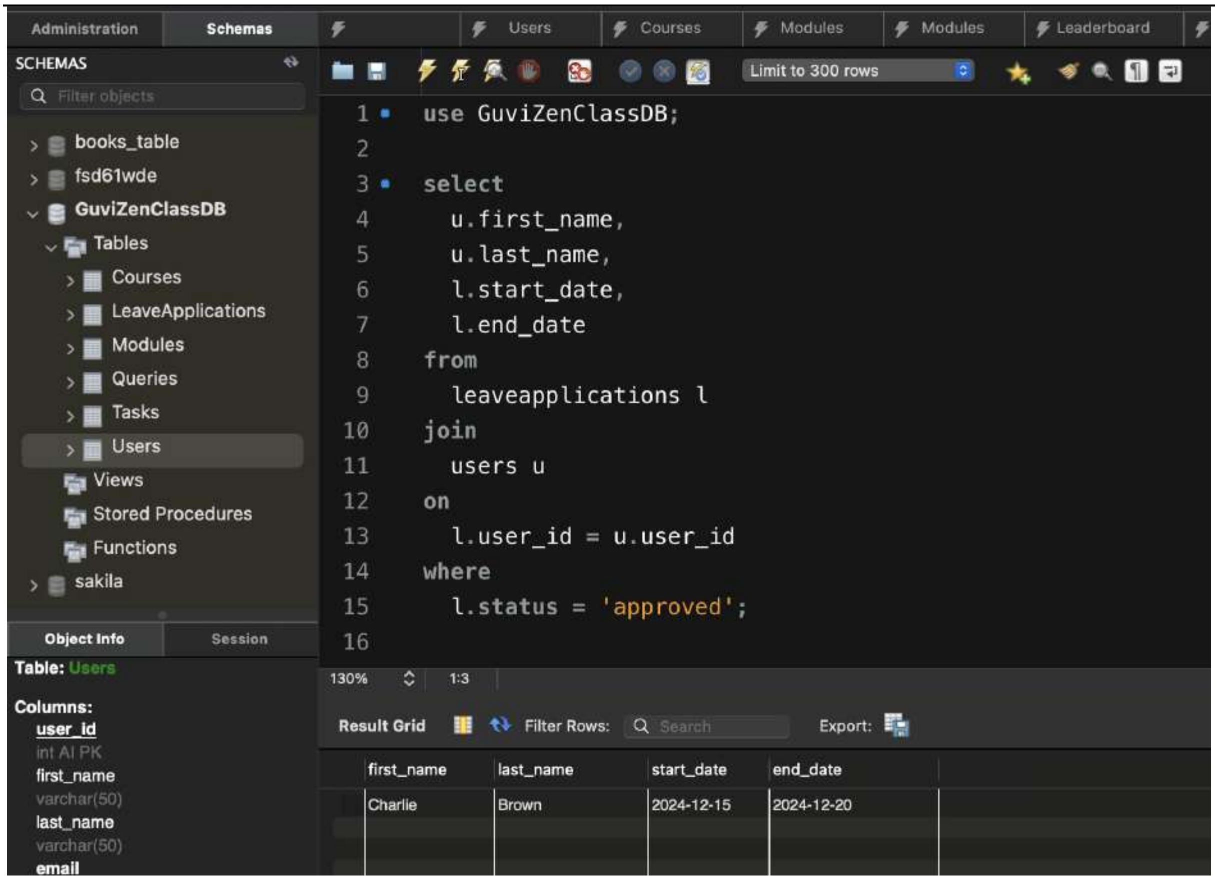
```
select leave_id, start_date, end_date, reason
from leaveapplications
where status = 'approved';

```

leave_id	start_date	end_date	reason
2	2024-12-15	2024-12-20	Family emergency
NULL	NULL	NULL	NULL

// Join Clause

List all approved leave applications along with the full name of the user who applied for the leave?

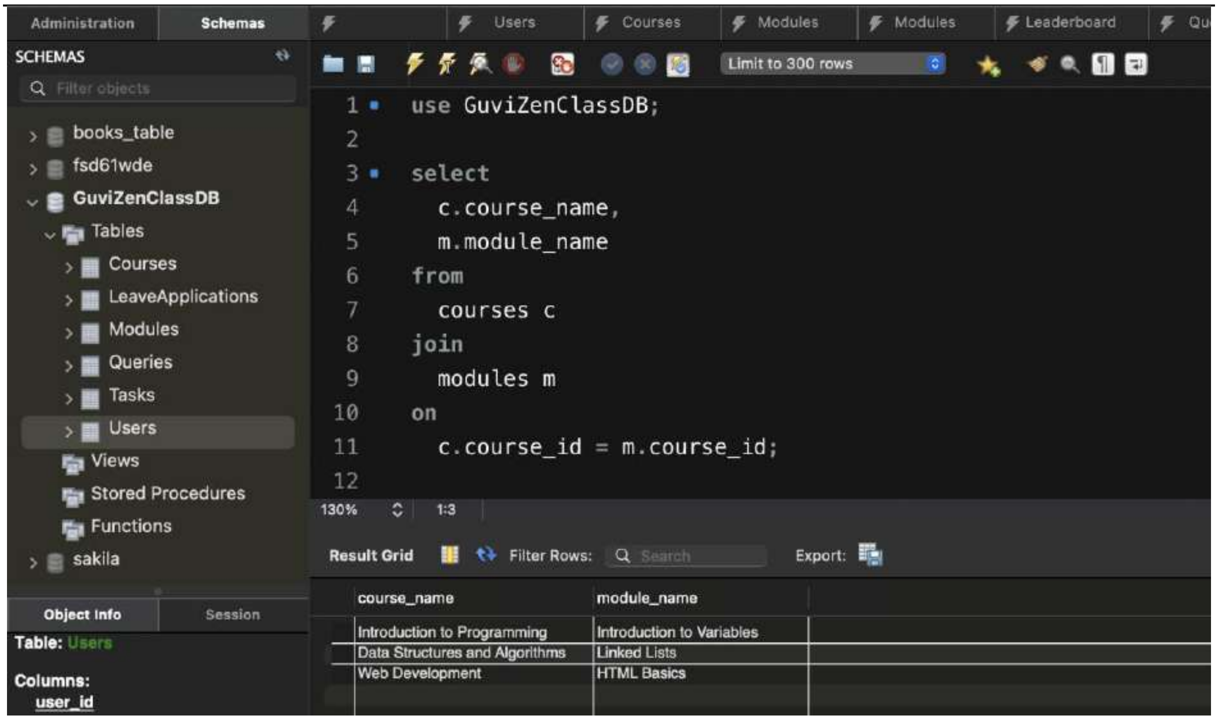


```sql
use GuviZenClassDB;

select
  u.first_name,
  u.last_name,
  l.start_date,
  l.end_date
from
  leaveapplications l
join
  users u
on
  l.user_id = u.user_id
where
  l.status = 'approved';
```

first_name	last_name	start_date	end_date
Charlie	Brown	2024-12-15	2024-12-20

List all modules for each course, showing the course name and module name ?



```sql
use GuviZenClassDB;

select
  c.course_name,
  m.module_name
from
  courses c
join
  modules m
on
  c.course_id = m.course_id;
```

course_name	module_name
Introduction to Programming	Introduction to Variables
Data Structures and Algorithms	Linked Lists
Web Development	HTML Basics