

SCREENSHOTS OF THE SYSTEM

Admin's functionalities once they login:

```
1. Admin
2. Course creator
3. Expert
4. User
5. Exit
Enter your choice: 1
```

Enforcing dynamic pricing on the prices of the courses in the database:

```
courses.txt X
NexusLearn > courses.txt
1  courseID,type,topic,description,price,enrollmentLimit,instructorID,numberofusers
2  101,LiveMentor,DBMS,Database Management Systems Fundamentals,7199.70,30,kashyap@gmail.com,1
3  102,LiveMentor,OS,Operating Systems Fundamentals,5759.76,25,jane@gmail.com,2
4  103,Predefined,Basics of Programming,Introduction to Programming Logic and Syntax in C Language,3599.51,50,sarah@gmail.com,3
5  104,Predefined,OOPS & ADS,Object-Oriented Programming Principles,2879.61,40,ryan@gmail.com,4
6  105,Predefined,IT Essentials,Essential IT Concepts and Skills,2879.61,40,kashyap@gmail.com,5
7  106,Predefined,DSA,Data Structures and Algorithms Fundamentals,4319.42,35,ryan@gmail.com,6
8  107,LiveMentor,Network Security,Principles of Network Security,8099.59,30,angelina@gmail.com,7
9  108,LiveMentor,Web Development,Modern Web Development Technologies,9899.65,20,jane@gmail.com,8
10 109,Predefined,Software Engineering,Software Engineering Principles and Practices,6299.71,45,sarah@gmail.com,9
11 110,Predefined,Cloud Computing,Introduction to Cloud Computing Technologies,7199.70,35,angelina@gmail.com,10
```

```
1. Enforce dynamic pricing strategy on the prices of the courses offered
2. View all transactions with the users
3. Pay an instructor his/her salary
4. View all transactions with the instructors
5. View user feedbacks
6. View Marketing Strategies
7. Exit
Enter your choice: 1
```

Based on which course ID do you want the dynamic pricing strategy to be carried out? 101
Dynamic pricing has been enforced successfully!

```
courses.txt X
NexusLearn > courses.txt
1  courseID,type,topic,description,price,enrollmentLimit,instructorID
2  101,LiveMentor,DBMS,Database Management Systems Fundamentals,7199.7,30,kashyap@gmail.com
3  102,LiveMentor,OS,Operating Systems Fundamentals,5529.37,25,jane@gmail.com
4  103,Predefined,Basics of Programming,Introduction to Programming Logic and Syntax in C Language,3491.52,50,sarah@gmail.com
5  104,Predefined,OOPS & ADS,Object-Oriented Programming Principles,2822.02,40,ryan@gmail.com
6  105,Predefined,IT Essentials,Essential IT Concepts and Skills,2793.22,40,kashyap@gmail.com
7  106,Predefined,DSA,Data Structures and Algorithms Fundamentals,4146.64,35,ryan@gmail.com
8  107,LiveMentor,Network Security,Principles of Network Security,7937.6,30,angelina@gmail.com
9  108,LiveMentor,Web Development,Modern Web Development Technologies,9503.66,20,jane@gmail.com
10 109,Predefined,Software Engineering,Software Engineering Principles and Practices,6110.72,45,sarah@gmail.com
11 110,Predefined,Cloud Computing,Introduction to Cloud Computing Technologies,6911.71,35,angelina@gmail.com
12
```

Viewing all transactions between the users and the system:

```
1. Enforce dynamic pricing strategy on the prices of the courses offered
2. View all transactions with the users
3. Pay an instructor his/her salary
4. View all transactions with the instructors
5. View user feedbacks
6. View Marketing Strategies
7. Exit
Enter your choice: 2
```

User Transactions:

CourseID	Email	Timestamp	CoursePrice
103	vedha@gmail.com	2024-05-29 07:27:26	49.99
101	vedha@gmail.com	2024-05-30 13:27:28	7199.7
105	vedha@gmail.com	2024-05-30 15:36:24	2879.61

Paying an instructor:

```
1. Enforce dynamic pricing strategy on the prices of the courses offered
2. View all transactions with the users
3. Pay an instructor his/her salary
4. View all transactions with the instructors
5. View user feedbacks
6. View Marketing Strategies
7. Exit
Enter your choice: 3
```

```
Enter the instructor ID to pay: ryan@gmail.com
Transaction recorded successfully.
```

Viewing all transactions between the system and the instructors:

```
1. Enforce dynamic pricing strategy on the prices of the courses offered
2. View all transactions with the users
3. Pay an instructor his/her salary
4. View all transactions with the instructors
5. View user feedbacks
6. View Marketing Strategies
7. Exit
Enter your choice: 4
```

Instructor Transactions:

InstructorID	Timestamp	Salary
kashyap@gmail.com	2024-05-29 07:26:37	50000
angelina@gmail.com	2024-05-29 14:27:19	52000
ryan@gmail.com	2024-05-31 17:58:38	53000

Viewing user feedbacks:

```
1. Enforce dynamic pricing strategy on the prices of the courses offered
2. View all transactions with the users
3. Pay an instructor his/her salary
4. View all transactions with the instructors
5. View user feedbacks
6. View Marketing Strategies
7. Exit
Enter your choice: 5
```

Feedback ID	Course ID	Ratings	Feedback	Timestamp
976353168	102	1	nil	2024-05-29 19:13:57
1747513088	101	4	nil	2024-05-31 16:59:32

Viewing marketing strategies:

```
1. Enforce dynamic pricing strategy on the prices of the courses offered
2. View all transactions with the users
3. Pay an instructor his/her salary
4. View all transactions with the instructors
5. View user feedbacks
6. View Marketing Strategies
7. Exit
Enter your choice: 6
```

The various techniques that can be implemented to increase market for our courses are:

- 0. Creation of engaging course content
- 1. Updation of platform features and functionalities
- 2. Identification of target audience
- 3. Analysis of market trends
- 4. Optimization of marketing strategies
- 5. Implementation of marketing strategies
- 6. Development of beneficial partnerships
- 7. Final Outcome: Expansion of network and outreach

Total number of unique sequential orders in which you can implement the foresaid techniques to increase market for your courses are: 105

Enter the number of such orders you want to see: 5

Top 5 sequential orders in which the foresaid techniques can be implemented to increase market for our courses are:

```
0 1 2 3 4 5 6 7
0 1 2 3 4 6 5 7
0 1 2 3 6 4 5 7
0 1 2 6 3 4 5 7
0 1 6 2 3 4 5 7
```

Course creator's functionalities once they login:

```
1. Admin
2. Course creator
3. Expert
4. User
5. Exit
Enter your choice: 2
```

Adding new courses:

```
1. New course
2. View my courses
3. Exit
Enter your choice: 1
```

```
1. Live mentoring
2. Predefined course
3. Back
Enter your choice: 1
```

```
Topic: C++ introduction
Description: Beginner level C++ course
Price: 120
Enter enrollment limit: 20
```

```
Enter course rubrics:
Assignments: 30
Internal tests: 20
Final test: 50
```

```
1. Live mentoring
2. Predefined course
3. Back
Enter your choice: 2
```

```
Topic: DBMS
Description: Oracle SQL and database concepts
Price: 130
```

Viewing added courses:

```
1. New course
2. View my courses
3. Exit
Enter your choice: 2

All courses authored:
ID      | Type           | Topic               | Price  | Enrollment Limit
-----|-----|-----|-----|-----
4      | LiveMentor     | Web development    | 300    | 40
5      | Predefined     | DBMS               | 130    | 0
8      | LiveMentor     | C++ introduction   | 120    | 20
```

Seeing the student enrollment list for a particular course:

```
All courses authored:
ID      | Type           | Topic               | Price  | Enrollment Limit
-----|-----|-----|-----|-----
4      | LiveMentor     | Web development    | 300    | 40
5      | Predefined     | DBMS               | 130    | 0
8      | LiveMentor     | C++ introduction   | 120    | 20

1. Select
2. Back
Enter your choice: 1
Enter course ID: 4

1. View enrolled student list
2. Assign homework
3. Grade assignments
4. Schedule a test
5. Enable a test
6. Disable a test
7. Upload material
8. Upload practice sheets
9. View Scheduled tests
10. View uploads
11. Back
Enter your choice: 1
Enrollment list for course 4:
aanisha@gmail.com
alamelu@gmail.com
vedha@gmail.com
```

Posting assignments:

```
All courses authored:
ID      | Type           | Topic                | Price  | Enrollment Limit
-----|-----|-----|-----|-----
4      | LiveMentor     | Web development     | 300    | 40
5      | Predefined     | DBMS                | 130    | 0
8      | LiveMentor     | C++ introduction    | 120    | 20

1. Select
2. Back
Enter your choice: 1
Enter course ID: 4

1. View enrolled student list
2. Assign homework
3. Grade assignments
4. Schedule a test
5. Enable a test
6. Disable a test
7. Upload material
8. Upload practice sheets
9. View Scheduled tests
10. View uploads
11. Back
Enter your choice: 2
Topic: HTML
Description: webpage about yourself
Due date: 06-05-2024
Marks: 15
Assignment assigned successfully.
```

Grading a student's assignment:

```
Enter your choice: 1
Enter course ID: 4

1. View enrolled student list
2. Assign homework
3. Grade assignments
4. Schedule a test
5. Enable a test
6. Disable a test
7. Upload material
8. Upload practice sheets
9. View Scheduled tests
10. View uploads
11. Back
Enter your choice: 3
Enter assignment ID: 1
Enter student ID: aanisha@gmail.com
Enter marks: 15
```

Scheduling tests:

```
1. View enrolled student list
2. Assign homework
3. Grade assignments
4. Schedule a test
5. Enable a test
6. Disable a test
7. Upload material
8. Upload practice sheets
9. View Scheduled tests
10. View uploads
11. Back
Enter your choice: 4
Portions for the test: chapter 1
Date: 12-06-2024
Enter the name of the question file to upload: q1.txt
Test scheduled successfully(not enabled)
```

Enabling scheduled tests:

```
1. View enrolled student list
2. Assign homework
3. Grade assignments
4. Schedule a test
5. Enable a test
6. Disable a test
7. Upload material
8. Upload practice sheets
9. View Scheduled tests
10. View uploads
11. Back
Enter your choice: 9
```

Test ID	Course ID	Portions	Date	Question File	Status
4	4	chapter 3	12-01-2024	q1.txt	disabled
5	4	chapter 1	12-06-2024	q1.txt	disabled
6	4	chapter 5	20-06-2024	q2.txt	disabled

```
1. View enrolled student list
2. Assign homework
3. Grade assignments
4. Schedule a test
5. Enable a test
6. Disable a test
7. Upload material
8. Upload practice sheets
9. View Scheduled tests
10. View uploads
11. Back
Enter your choice: 5
Enter Test ID to enable: 4
Test ID 4 has been enabled.
```

Disabling the tests (students cannot attempt them anymore):

1. View enrolled student list
2. Assign homework
3. Grade assignments
4. Schedule a test
5. Enable a test
6. Disable a test
7. Upload material
8. Upload practice sheets
9. View Scheduled tests
10. View uploads
11. Back

Enter your choice: 9

Test ID	Course ID	Portions	Date	Question File	Status
4	4	chapter 3	12-01-2024	q1.txt	enabled
5	4	chapter 1	12-06-2024	q1.txt	disabled
6	4	chapter 5	20-06-2024	q2.txt	disabled

1. View enrolled student list
2. Assign homework
3. Grade assignments
4. Schedule a test
5. Enable a test
6. Disable a test
7. Upload material
8. Upload practice sheets
9. View Scheduled tests
10. View uploads
11. Back

Enter your choice: 6

Enter Test ID to disable: 4

Test ID 4 has been disabled.

1. View enrolled student list
2. Assign homework
3. Grade assignments
4. Schedule a test
5. Enable a test
6. Disable a test
7. Upload material
8. Upload practice sheets
9. View Scheduled tests
10. View uploads
11. Back

Enter your choice: 9

Test ID	Course ID	Portions	Date	Question File	Status
4	4	chapter 3	12-01-2024	q1.txt	disabled
5	4	chapter 1	12-06-2024	q1.txt	disabled
6	4	chapter 5	20-06-2024	q2.txt	disabled

Uploading materials and practice tests, viewing the uploaded practice tests:

```
1. View enrolled student list
2. Assign homework
3. Grade assignments
4. Schedule a test
5. Enable a test
6. Disable a test
7. Upload material
8. Upload practice sheets
9. View Scheduled tests
10. View uploads
11. Back
```

Enter your choice: 7

Enter filenames (type 'done' to finish):

Filename: chapter-10.txt

Filename: chapter-11.txt

Filename: done

```
1. View enrolled student list
2. Assign homework
3. Grade assignments
4. Schedule a test
5. Enable a test
6. Disable a test
7. Upload material
8. Upload practice sheets
9. View Scheduled tests
10. View uploads
11. Back
```

Enter your choice: 8

Portions for the test: chapter - 5

Enter the name of the question file to upload: chapter_5q.txt

Test added.

```
1. View enrolled student list
2. Assign homework
3. Grade assignments
4. Schedule a test
5. Enable a test
6. Disable a test
7. Upload material
8. Upload practice sheets
9. View Scheduled tests
10. View uploads
11. Back
```

Enter your choice: 10

Practice tests :

Test ID	Course ID	Portions	Date
2	4	chapter - 5	chapter_5q.txt

Expert's functionalities once they login:

```
1. Admin
2. Course creator
3. Expert
4. User
5. Exit
Enter your choice: 3
```

Adding review for a particular course:

```
Admin@localhost:~$ python3 7/areas
1. Add Review
2. View Recent Reviews
3. View Priority Queue
4. Exit
Enter your choice: 1
Enter Course ID: 1
Enter Review: good
Enter Status: pending
Review added successfully.
```

```
Review added successfully.
1. Add Review
2. View Recent Reviews
3. View Priority Queue
4. Exit
Enter your choice: 1
Enter Course ID: 2
Enter Review: average
Enter Status: pending
Review added successfully.
```

Viewing recently reviewed courses that which are still in pending for further review(s):

```
Enter choice: pending
Review added successfully.
1. Add Review
2. View Recent Reviews
3. View Priority Queue
4. Exit
Enter your choice: 2
Inserting course ID: 1
Inserting course ID: 2
1 Materials: f1.txt,
2 Materials: unit1.txt, unit2.txt, unit3.txt,
```

Seeing the order of priority for reviewing the courses:

```
1. Add Review
2. View Recent Reviews
3. View Priority Queue
4. Exit
Enter your choice: 3
Heap (Course ID : Users Enrolled)
1 : 100
5 : 45
4 : 5
2 : 10
```

User's functionalities once they login:

```
1. Admin
2. Course creator
3. Expert
4. User
5. Exit
Enter your choice: 4
```

Enrolling in a course:

```
Options:
1. Buy a Course
2. View Enrolled Courses
3. Unenroll from a Course
4. View Course Recommendations
5. Manage Wishlist
6. Give Feedback on a Course
7. View given feedbacks
8. View Profile
9. Exit
Choose an option: 1
Enter the Course ID you want to enroll in: 2
Enrolled in course ID 2 successfully.
```

Viewing the enrolled courses:

```
Options:
1. Buy a Course
2. View Enrolled Courses
3. Unenroll from a Course
4. View Course Recommendations
5. Manage Wishlist
6. Give Feedback on a Course
7. View given feedbacks
8. View Profile
9. Exit
Choose an option: 2
Enrolled courses:
```

ID	Type	Topic	Price	Enrollment Limit
1	LiveMentor	C Programming	150	30
2	Predefined	Python programming	160	0
4	LiveMentor	Web development	300	40
5	Predefined	DBMS	130	0

Viewing assignments posted for a particular course:

```
Enrolled courses:
ID      | Type           | Topic           | Price  | Enrollment Limit
-----|-----|-----|-----|-----
1       | LiveMentor     | C Programming   | 150    | 30
4       | LiveMentor     | Web development | 300    | 40
5       | Predefined     | DBMS            | 130    | 0

1. Select
2. Back
Enter your choice: 1
Enter course ID: 1
1. View assignments
2. View grades
3. Submit assignment
4. Take Tests
5. Back
1

Assignments for course 1:
ID      | Topic           | Description           | Due Date  | Marks
-----|-----|-----|-----|-----
1       | Loop control structure | Pattern printing     | 01-06-2023 | 10
2       | Representation of numbers | (over-dynamic)      |              | 10
```

Viewing grades

```
Enter course ID: 1
1. View assignments
2. View grades
3. Submit assignment
4. Take Tests
5. Back
2

Grades for course 1:
Assignment | Student ID | Marks
-----|-----|-----
1          | vedha@gmail.com | 20
```

Assignment submission:

```
1. View assignments
2. View grades
3. Submit assignment
4. Take Tests
5. Back
3

Assignment ID: 1
File name: assignment.txt
Assignment submitted successfully.
```

Attempting tests:

```
Enrolled courses:
ID      | Type           | Topic           | Price  | Enrollment Limit
-----|-----|-----|-----|-----
1      | LiveMentor    | C Programming   | 150    | 30
4      | LiveMentor    | Web development | 300    | 40
5      | Predefined    | DBMS           | 130    | 0

1. Select
2. Back
Enter your choice: 1
Enter course ID: 4
1. View assignments
2. View grades
3. Submit assignment
4. Take Tests
5. Back
4
```

Viewing all live tests:

```
1.Live

2.Practise tests
1
Test ID   Course ID   Portions          Date
-----|-----|-----|-----
4         4          chapter 3         12-01-2024
5         4          chapter 1         12-06-2024
6         4          chapter 5         20-06-2024
Select your Test ID:4
```

Taking a live test:

```
Starting the test...
What is a software application for accessing information on the world wide web?
1. Browser
2. Server
3. Laptop
Enter the answer (option number only): 1
What is a computer that runs websites?
1. Web Browser
2. Domain
3. Server
Enter the answer (option number only): 1
Is WWW an electronic communications network that connects computer networks and or
1. True
2. False
3. Not known
Enter the answer (option number only): 1
Which of the following is used to write C++ programs?
1. Compiler
2. Painter
3. Text Editor
Enter the answer (option number only): 1
What does CPU stand for?
1. Central Processing Unit
2. Computer Personal Unit
3. Central Processor Unit
Enter the answer (option number only): 1
Results saved successfully!
```

Unenrolling from a course:

```
Options:
1. Buy a Course
2. View Enrolled Courses
3. Unenroll from a Course
4. View Course Recommendations
5. Manage Wishlist
6. Give Feedback on a Course
7. View given feedbacks
8. View Profile
9. Exit
Choose an option: 3
Enter the Course ID you want to unenroll from: 2
Unenrollment successful for Course ID 2. Amount refunded.
```

Viewing course recommendations:

```
Options:
1. Buy a Course
2. View Enrolled Courses
3. Unenroll from a Course
4. View Course Recommendations
5. Manage Wishlist
6. Give Feedback on a Course
7. View given feedbacks
8. View Profile
9. Exit
Choose an option: 4
Enter the starting course: 1

Shortest Durations and Paths from 1:
To Data Structures: 4.8 months, Path: Computer Science -> Data Structures
To Algorithms: 12 months, Path: Computer Science -> Data Structures -> Algorithms
To Database Systems: 14.4 months, Path: Computer Science -> Data Structures -> Database Systems
```

Wishlist management:

```
Menu:
1. Add course to wishlist
2. Remove course from wishlist
3. View courses in wishlist
4. Exit
Enter your option: 1
Enter course ID to add: 5
New wishlist created and course 5 added for vedha@gmail.com
```

```
Menu:
1. Add course to wishlist
2. Remove course from wishlist
3. View courses in wishlist
4. Exit
Enter your option: 3
Courses for vedha@gmail.com: 5
```

```
Menu:
1. Add course to wishlist
2. Remove course from wishlist
3. View courses in wishlist
4. Exit
Enter your option: 2
Enter course ID to remove: 5
Course 5 removed from wishlist for vedha@gmail.com
```

Giving feedback:

```
Options:
1. Buy a Course
2. View Enrolled Courses
3. Unenroll from a Course
4. View Course Recommendations
5. Manage Wishlist
6. Give Feedback on a Course
7. View given feedbacks
8. View Profile
9. Exit
Choose an option: 6
Enter the Course ID on which you want to give feedback: 1
Unable to open feedbacks.txt file
How would you rate this course on a scale of 1-5? 4
Enter your feedback in about a few words, if any, else type nil: nil
Thanks for your valuable feedback, we shall look into it!
```

Viewing user profile:

```
Options:
1. Buy a Course
2. View Enrolled Courses
3. Unenroll from a Course
4. View Course Recommendations
5. Manage Wishlist
6. Give Feedback on a Course
7. View given feedbacks
8. View Profile
9. Exit
Choose an option: 8
Profile Information:
Name: Vedha
Email: vedha@gmail.com
```


PS: The above attached output screenshots cover the resultant outcome of almost all the functionalities that are implemented through the system, and are almost in the same order as the order in which the menus have been nested.