

“Professor As-A Service” Model

Assignment 3 – INFO 5100

Group Members:

Anvitha Lakshmisha(002965377)

Aesha Sherathia(002929942)

Description of Model:

This is a digital education model where professor is at center of students’ learning (not the university) and so it is named as “Professor As-A Service”.

The system is totally decentralized where professors own their talent and experience not the educational institution.

- The professor manages their own courses as well as what they want to teach and when to teach them. Students sign up as they please.
- The professor has full autonomy. Likely the professor will be offering courses in their specialty. A reputation index will be available to help aspiring students decide which courses fit best.
- A professor will join the service and operate remotely from anywhere in the world.
- Professor services are visible and accessible from anywhere in the world, using tablets, browsers, smart devices, etc.
- To earn their degree, students must fulfill course requirements which means courses must be taken from many professors (residing anywhere in the world)
- The underlying digital platform offers third party certification authority to approve the degree. You might want to consider different certification authorities. One third party might have better access to employers for example.
- Course prices are set by the professor and can vary and easy to adjust depending on demand
- Tuition for courses go directly to the professor. The professor will pay subscription fees for use of the digital platform.

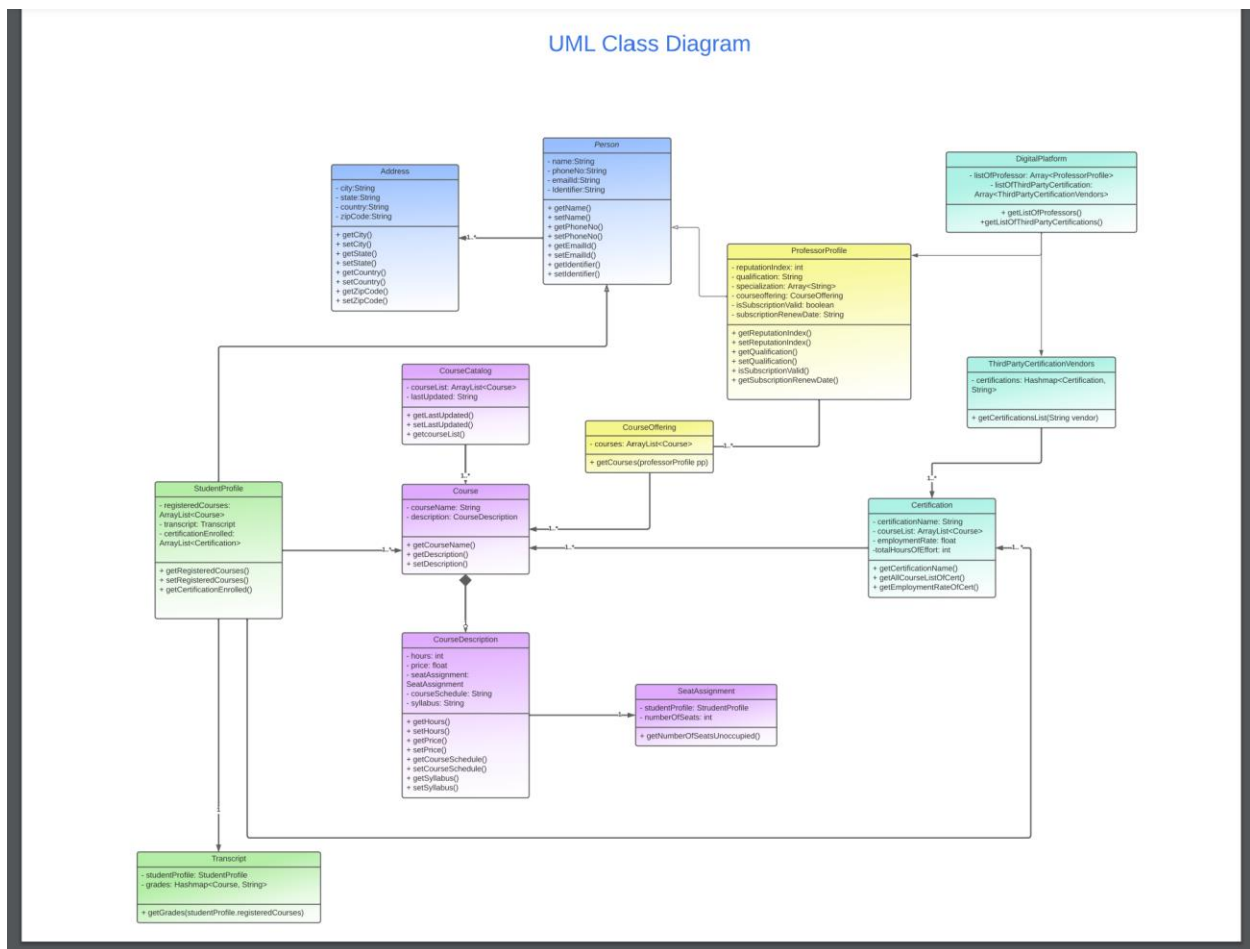
Goal of Assignment:

To use software engineering techniques to reduce tuition cost while improving the quality of education anywhere in the world. We want to hold people accountable for improving the quality of life for the masses through education, learning to learn, and feedback.

Deliverables:

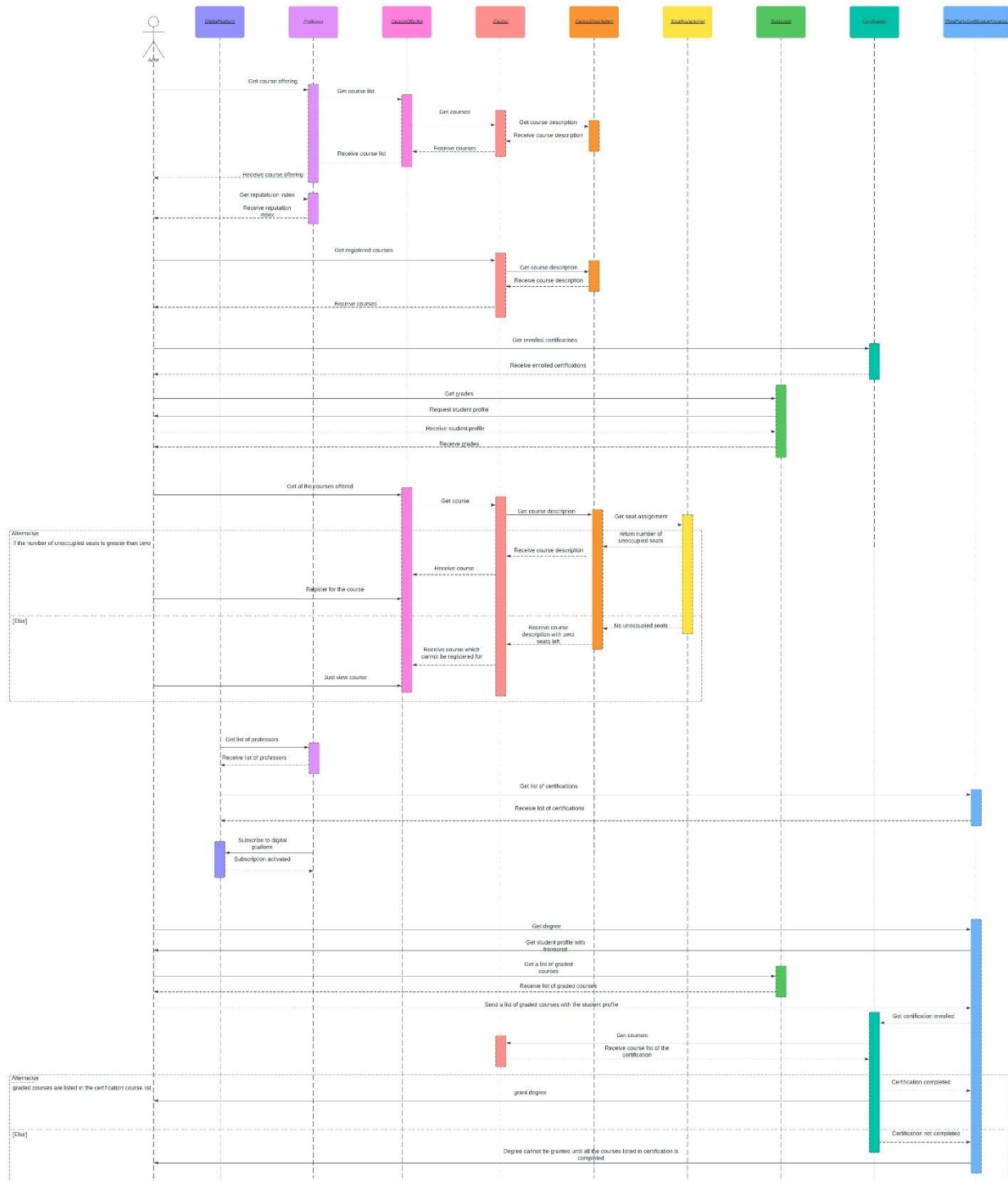
1. Report outlining your proposed solution.
2. Architecture diagram showing the new business model and how it is different from traditional university setup.
3. Screen designs for the different use cases (roles)
4. Sequence diagrams showing how to navigate the university object model to deliver performance metrics needed for performance and feedback.
5. A class diagram showing the changes to the university model to support the new capabilities. This diagram must include the additional methods and attributes required to deliver the results.
6. Overall assessment and opinion on whether such digital educational platforms of the future will make education easily accessible and affordable to the less fortunate.
7. Design a dashboard that enables platform owners to collect performance data of different varieties.

UML Class Diagram



“Professor As-A Service”

Sequence diagram



Use Cases

Use Case – Person

Description:

Person is the main class from which all the classes are derived from.
Has an identifier to distinguish each person in the class

Associations List:

Person class is inherited by ‘ProfessorProfile’ and ‘StudentProfile’

Use Case – Professor

Description:

Professor is the main entity of this entire model. Professor offers courses which the students can register for. The course schedule and details of pricing are set by the professor offering that course. Professor also has a reputation index and his qualification details.
Professor needs to subscribe to the digital platform to continue teaching his course.

Associations List:

Professor class is connected to the ‘CourseOffering’ class.

Use Case – CourseCatalog

Description:

CourseCatalog has a list of all the courses offered by all the professors.
It also has a lastUpdated attribute to know when the entire course list was updated

Associations List:

CourseCatalog is inherited by ‘Course’

Use Case – CourseOffering

Description:

CourseOffering has a list of all the courses that are offered by a particular professor

Associations List:

CourseOffering is connected to the professor.

Use Case – CourseDescription

Description:

CourseDescription has a list of all the details of a particular course like the number of hours the particular class is for, its pricing schedule and syllabus.
It also has the seat assignment details of that course

Associations List:

CourseDescription is connected to ‘Course’ and ‘SeatAssignment’

Use Case – Course

Description:

Course class has each course name and the course description

Associations List:

Course is connected to ‘StudentProfile’, ‘CourseCatalog’, ‘CourseOffering’ and ‘CourseDescription’

Use Case – SeatAssignment

Description:

SeatAssignment has the details of number of seats of that each course will have and the student profile to reserve a seat for that student in that class

Associations List:

SeatAssignment is connected to ‘CourseDescription’

Use Case – Student Profile

Description:

Student Profile contains detail of each student like courses Registered by student, Transcript, any certifications completed or ongoing.

It contains methods to get/set the courses registered and get certifications enrolled for.

Associations List:

Student Profile is connected to Transcripts, Certifications and Course.

“Professor As-A Service”

Use Case – Address

Description:

Address is used to store City, State, Country and ZipCode for each Person profile.

Association List:

Address is part of person class which is associated in 1 to many relationship .

Use Case – Transcript

Description:

The Transcript is mapped to unique student profile and has a method to get grades for registered courses for that particular student.

Hashmap is used to map grades with courses for each student profile.

Use Case – Certification

Description:

The Certification is used to get details of name of Certifications available , list of courses required for that particular certification and employment rate for each certification on basis of past employment history.

Contains method to get all certification names, list of courses, employment rate for a particular certification.

Association List:

Certifications are provided by 3rd Party Vendors so are associated to ‘ThirdPartyVendorCertification’ , connected to ‘Course’ to get course list.

Use Case – ThirdPartyVendorCertification

Description:

The ThirdPartyVendorCertification is used to get list of all Certification along with Vendor names providing those certifications. Contains Method to get Certification list.

Association List:

ThirdPartyVendorCertification is associated with Certification.

“Professor As-A Service”

Use Case – DigitalPlatform

Description:

The DigitalPlatform is a platform where all the professors need to subscribe to offer their courses and it has list of third party vendors who grant degrees.

Association List:

DigitalPlatform is connected with ThirdPartyVendorCertification and ProfessorProfile.

User Interface(Screens):

The Screens are created using java Swing to provide visualization of how application will look like.

- Main Screen:



- Professor Screens:



“Professor As-A Service”

Profile

Course offered

Course plan

List of Professors

Professor Name	Qualification	Specialization	Reputatin Index
Amuthan Arulraj	MS	UI, UX	5
Aishwarya Shah	MTech	Java	4
SoumyaRao	MS	Biotech	5
Ankitha Beejadi	BTech	Algorithm	2

Name

Amutha Arulraj

Phone Number

+1 768 345 3455

Email ID

aarulraj@northeaster.edu

Reputation Index

5

Is Subscription expired

NO

Subscription renewal date

31st Dec 2022

Specialization

UI, UX

“Professor As-A Service”

Courses offered by the selected professor :

Course name	Price	Schedule	Hours per week	Syllabus
UI	6.99	Mon-Tue	3	www.ui-syllabus.c...
UX	7.99	Fri-Sun	6	www.ux-syllabus.c...
UI	6.99	Fri-Sat	3	www.ui-syllabus.c...

Search for a particular course from the list above

Course name

Schedule

Courses offered by the selected professor :

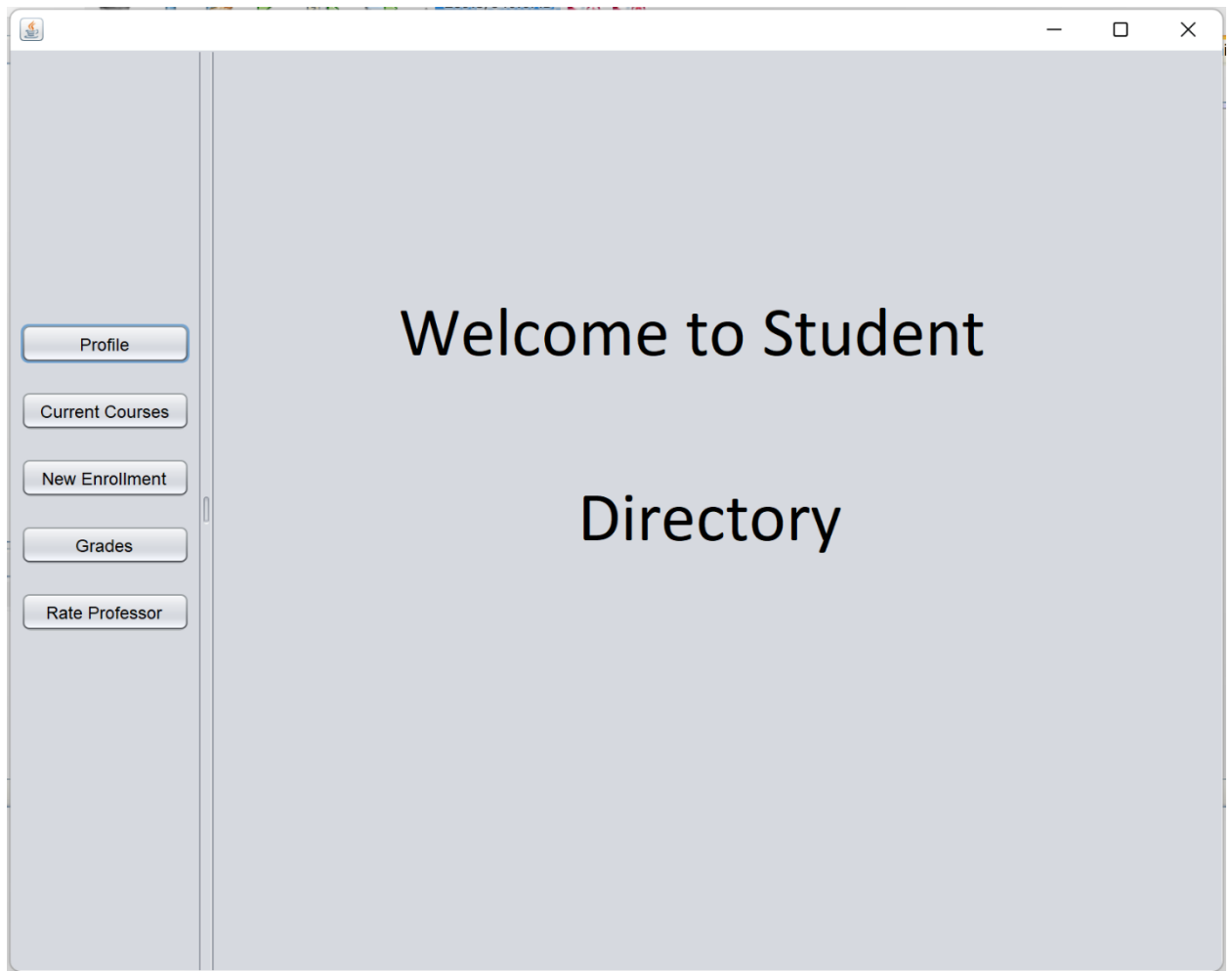
Course name	Price	Schedule	Hours per week	Syllabus
UI	6.99	Mon-Tue	3	www.ui-syllabus.c...

Search for a particular course from the list above

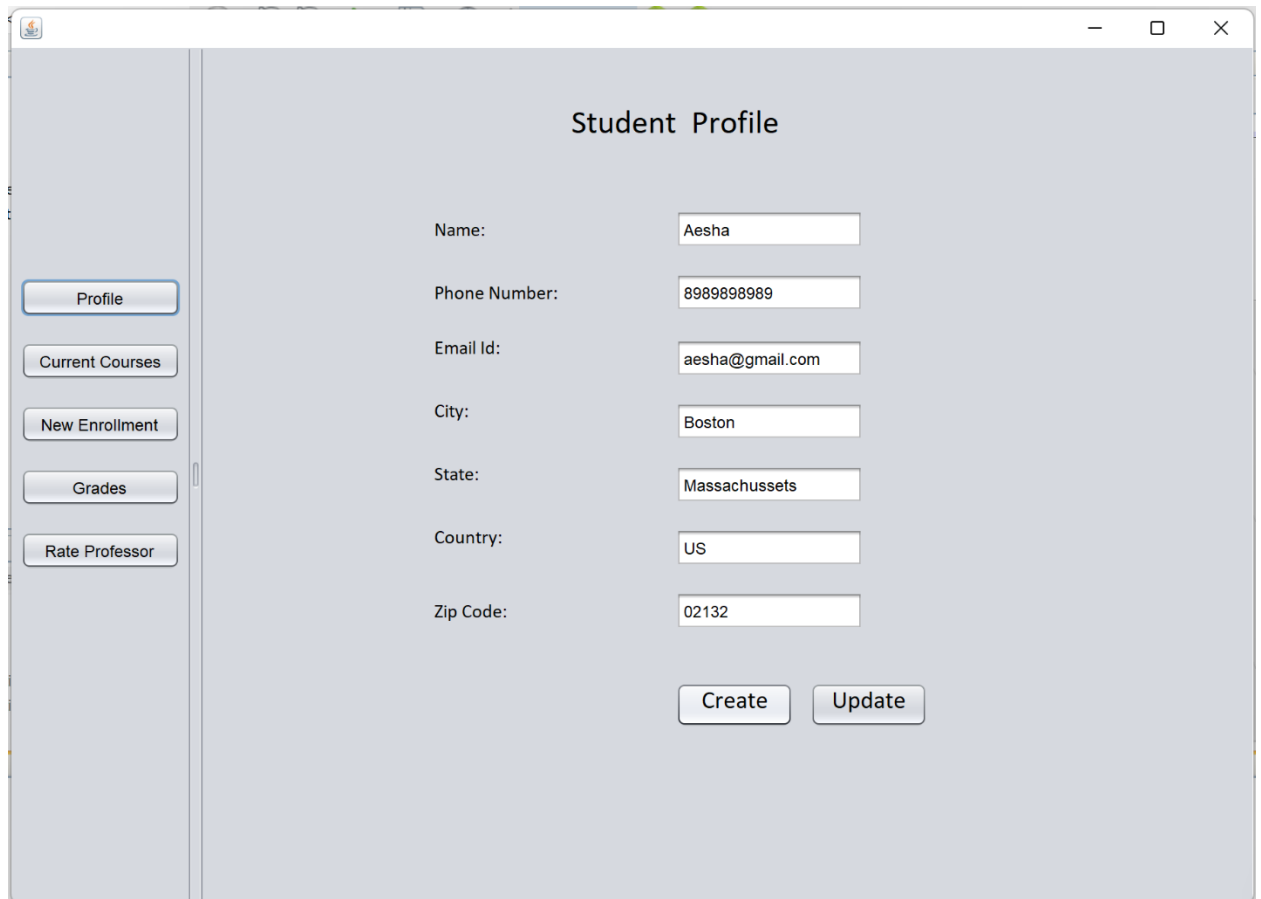
Course name

Schedule

- Student Screens:



“Professor As-A Service”

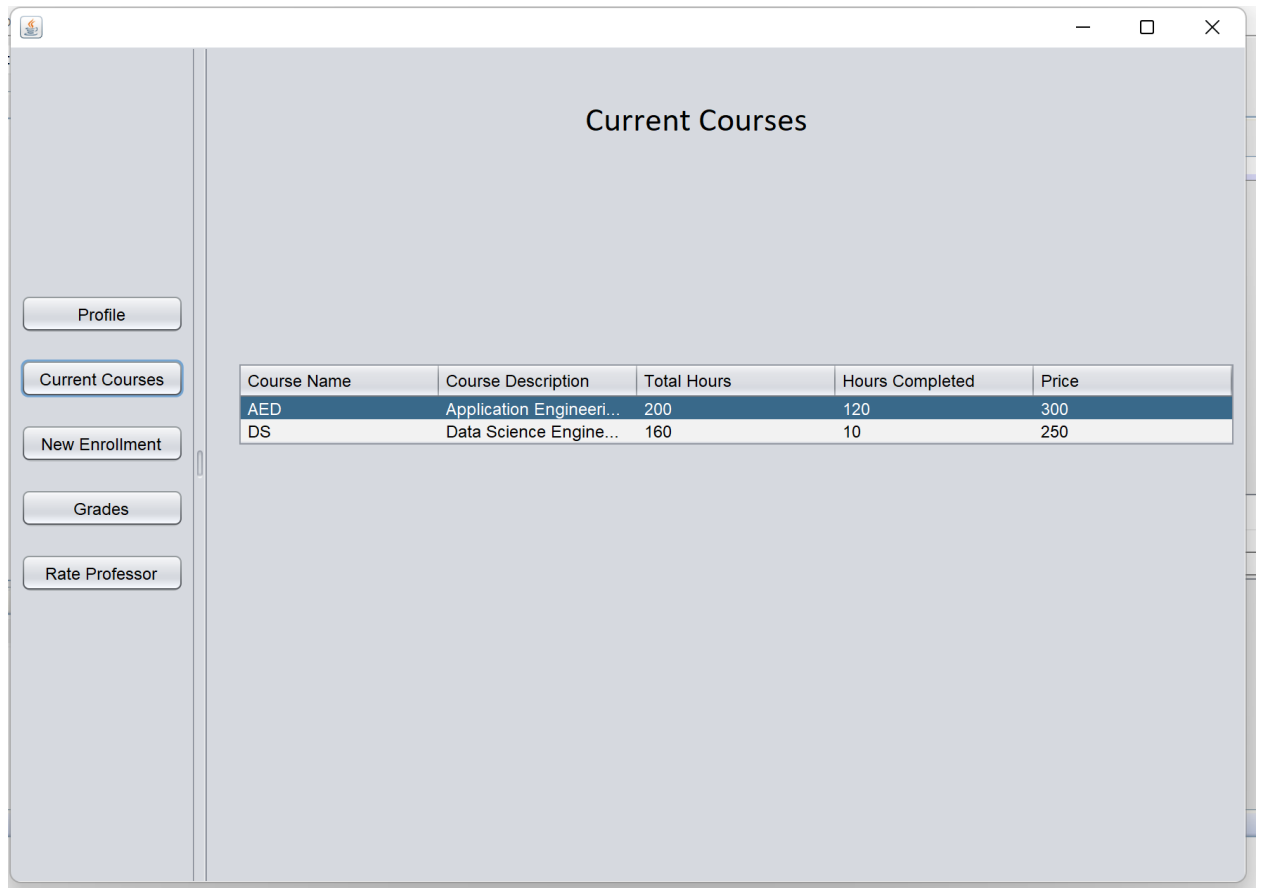


The screenshot shows a web application window with a title bar containing a small icon and standard window controls (minimize, maximize, close). The main content area is titled "Student Profile". On the left side, there is a vertical sidebar with five buttons: "Profile" (which is highlighted with a blue border), "Current Courses", "New Enrollment", "Grades", and "Rate Professor". The main area contains a form with the following fields and values:

Field	Value
Name:	Aesha
Phone Number:	8989898989
Email Id:	aesha@gmail.com
City:	Boston
State:	Massachussets
Country:	US
Zip Code:	02132

At the bottom right of the form, there are two buttons: "Create" and "Update".

"Professor As-A Service"



The screenshot shows a web application window with a title bar containing standard OS controls (minimize, maximize, close). The main content area is titled "Current Courses" and displays a table with the following data:

Course Name	Course Description	Total Hours	Hours Completed	Price
AED	Application Engineeri...	200	120	300
DS	Data Science Engine...	160	10	250

On the left side of the window, there is a sidebar with five buttons: "Profile", "Current Courses" (which is highlighted with a blue border), "New Enrollment", "Grades", and "Rate Professor".

“Professor As-A Service”

Profile

Current Courses

New Enrollment

Grades

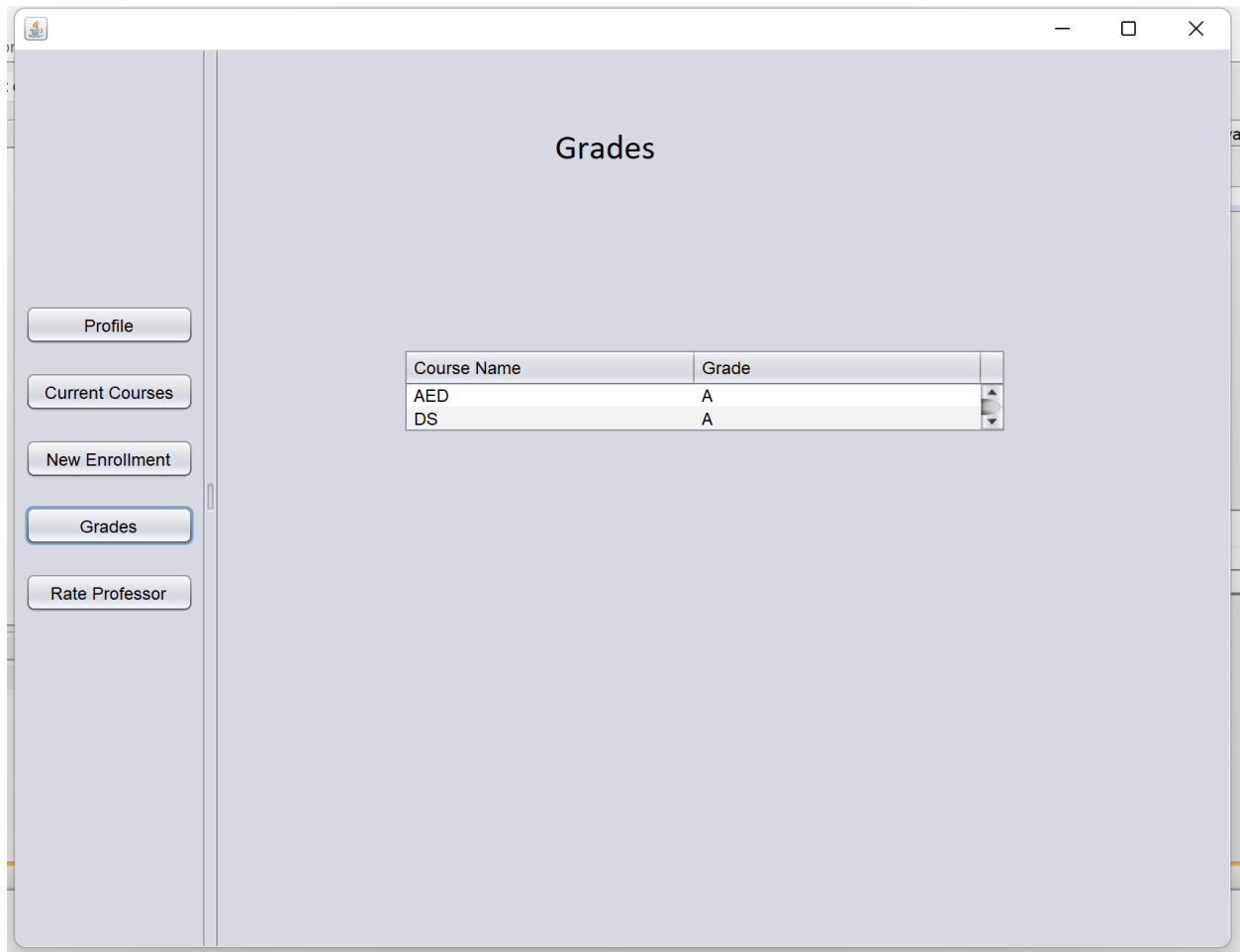
Rate Professor

Enroll Course

Course Name:

Course Name	Professor	Hours	Price
DS	Bob	200	600
DS	John	160	450

“Professor As-A Service”



The screenshot shows a web application window with a title bar containing a small icon and standard window controls (minimize, maximize, close). The main content area is titled "Grades". On the left side, there is a vertical sidebar with five buttons: "Profile", "Current Courses", "New Enrollment", "Grades" (which is highlighted with a blue border), and "Rate Professor". In the center of the main area, there is a table with two columns: "Course Name" and "Grade". The table contains two rows of data: "AED" with grade "A" and "DS" with grade "A". A vertical scrollbar is visible on the right side of the table.

Course Name	Grade
AED	A
DS	A

“Professor As-A Service”

Profile

Current Courses

New Enrollment

Grades

Rate Professor

Feedback

Professor Name: John

Rating:

☒ Very Good : 5

☐ Good : 4

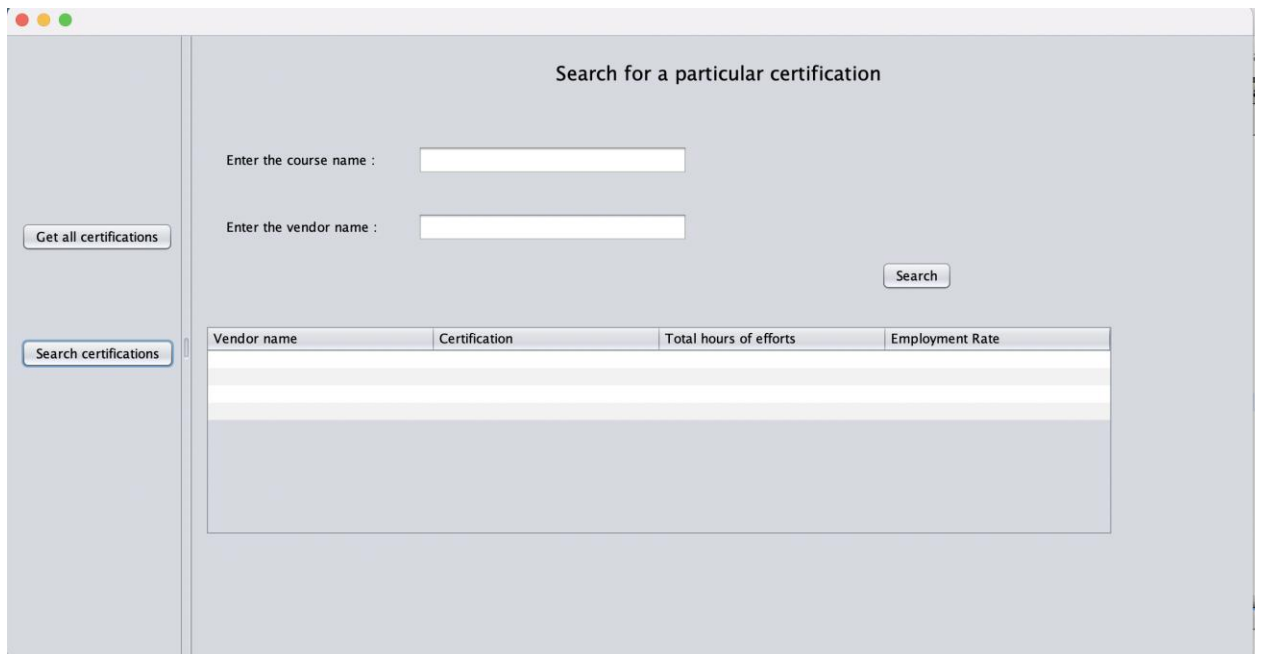
☐ Average : 3

☐ Below Average : 2

Comments:

“Professor As-A Service”

- Third Party Screens:



“Professor As-A Service”

Certifications available

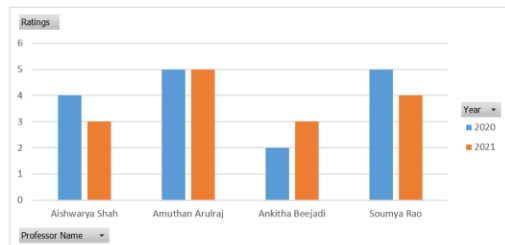
Vendor name	Certification	Total hours of efforts	Employment Rate
Coursera	Java basics	20	90%

Get all certifications

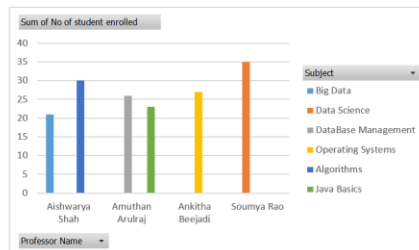
Search certifications

Analytics:

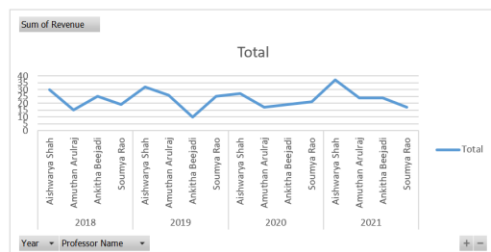
Professor Rating



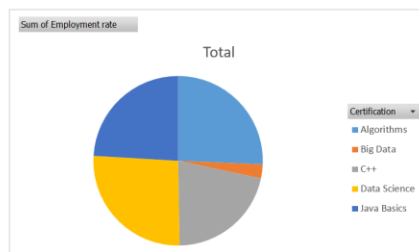
Student enrollment per professor



Professor Revenue



Certification to Employment rate



“Professor As-A Service”

Overall assessment and opinion on whether such digital educational platforms of the future will make education easily accessible and affordable to the less fortunate.

How it is beneficial for Students

- Courses can be registered by a student who is residing in any part of the world.
- The infrastructure needed to get a degree is relatively very less when compared to traditional university model - this also significantly reduces the amount spent in earning a degree.
- Anyone with a stable internet connection can access the courses - no location and law constraint.
- Students get to choose which professors' course to take based on the reputation index which is given by the other students who have taken the course previously.

How it is beneficial for Professors

- Professors can reside in any part of the country and deliver the course.
- Professors get to decide on the schedule, course price and the syllabus. Full monopoly on the subject the professor wants to teach.
- Professor just has to pay a small amount of subscription fee.
- All the fees paid by the students registered for the course go directly to the professor.