Vision Document
[E-Concordia Drive]

1. Introduction

The intention of this vision document is to provide a high-level description of E-Concordia Drive, an e-learning platform for online driving lessons. The needs of the system's stakeholders and users and their existence are also described. It also provides high-level solutions to the lesson learning process which doesn't hold online.

1.1 References

- Project description and wireframes provided by the instructor.
- Helping Old People Easily (HOPE) vision document by learners of University of Texas at dallas
- Course registration system vision document by learners of University of Houston

2. Positioning

2.1. Problem Statement

The problem of	- Offline learning at an institution - additional travelling time - dedicated lesson time - limited registration as per class capacity
Affects	- Students, Admin, Trainers
The impact of which is	- Limited students capacity may delay lessons for couple of students - Flexibility issues in scheduling, students have to follow particular day and time in their routine - Repetition of tasks, trainers have to teach same thing multiple times to multiple student batches which is wastage of trainer's time - Content monitoring issue, It's hard to review trainers ability to deliver content by Admin
A successful solution would be	- Achieving student's flexibility by providing lessons online through web portal, student can login through EDC (export development canada) and learn self paced without any specific day and time - Reducing trainer's efforts by capturing content just once and having available throughout, this leads to save trainers time - Trainers can update their lesson content and students can re-visit the lessons by their own preference - Admin can review the lessons uploaded by trainers and publish them after reviewing

2.2. Product Position Statement

For	- Students, Admin, Trainers
Who	- Students can learn lessons, trainers can upload the lessons and Admin can review the lesson content and publish so that content becomes accessible
The E-Concordia Drive	- Is a web based application
That	Enables its users to: - Review/Learn lesson content online from home in their preferred/free time - Reduces amount of efforts for trainers to teach lessons multiple times by uploading lesson content just once - Easily allows admin users to review and publish content to end users
Unlike	- Students to go into the institution at specified time slot - The trainers to teach same lesson content multiple times for each batch of students
Our product	- Offers flexibility to students to learn lessons self paced with updated content, provides trainers to reduce quantitative efforts so that more qualitative content can be generated and Admin can inspect content quality before publishing to students. And, all these activities can be done though smart devices from any place

3. Stakeholder Descriptions

3.1. Stakeholder Summary

Name	Description	Responsibilities
Driving school owner	Owner of the driving school	- Driving school owner is responsible to take decision on cost and point of contact for any alternative queries and how system will look like
People	Residential and commercial people who are trying to learn the driving and want to obtain licence	- Responsible for any information elicitation based on how they think online videos should be and they can share problems they are facing with in-person content delivery
State Transportation department	Team of government authorities of the state transportation department	- The transportation department can approval on opening a driving school, licencing process and rules

3.2. User Summary

Name	Description	Responsibilities	Stakeholder
Trainer	Content creator for the platform	- Manage the content of the driving lessons, create the quiz for evaluation and re-work on lessons content if any feedback is received from the administrator	Self-represented
Student	Student of the platform	- Learn the driving video lessons by login to the system, after completion of the lessons attempts the quiz	Self-represented
Admin	Reviewer of the platform	- Review the lessons uploaded by trainer, provide feedback to trainers (if any) and make them accessible to students	Self-represented

3.3. User Environment

- All the users of the system can access the web application named E-Concordia Drive over the internet through their smart devices such as mobile, laptop and desktop(pc)
- Availability and manageability are top most concerns that system should be able to address
- The System should have user friendly design, thus, it will grow and reach to more students over the time
- E-Concordia Drive should have some validation such as the next lesson is accessible only after completion of the current lesson and it's attempt a Quiz.
- Alerts via email or dashboard notification should be implemented whenever trainer adds new lesson content or admin user gives feedback review to trainers and importantly whenever student completes lessons or pass the quiz

3.4 Key Stakeholder or User Needs

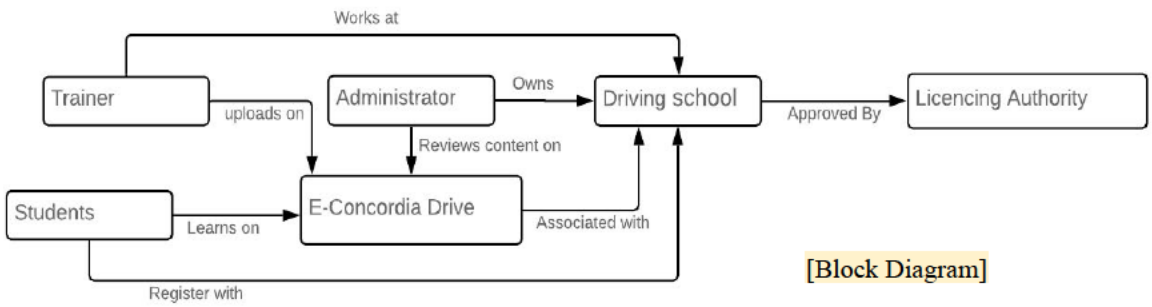
Need	Priority	Concerns	Current Solution	Proposed Solutions
Improvement in existing lessons and creation of driving lessons	High	Creation of video lesson takes more time and efforts due to retakes	Currently, lessons are delivered in the classrooms where trainer needs to give same lessons to many batch of students	Trainer will create video content of his lessons and upload to the application so that trainer doesn't need to give same lessons multiple times
Review lesson content	High	Inconvenient job, admin should be knowledgeable	Currently, all lessons material might be approved	Admin user will review the content of the driving

and publishing		who is familiar with the driving lessons content	on paper which takes more amount of time and to read the document is bit lengthy and time consuming	lesson uploaded by trainer once he/she receives notification to review, give them feedback if there will be any change otherwise admin user will make lessons accessible to the students
Attending lessons and give quiz	High	Time consuming due to traveling to physical location, may conflict with another important activities	Currently, students have to go to the institution and need to attend lessons on time	Students will login into the system and start reviewing video content of driving lessons sequentially, once lessons get completed/viewed, There will be a quiz followed by the lessons and once student attempts then only students can move forward to the next content.

4. Product Overview

4.1. Product Perspective

- The new proposed system titled as E-Concordia Drive is a web application which is a replacement of the in person lesson delivering process which is currently in place. This new system will have distance learning in which users have to login and learn through video content of driving lessons followed by practice quizzes to obtain their driving licence. This system will be accessible via smart devices from any place via the Internet.



[Block Diagram]

4.2. Assumptions and Dependencies

Assumptions	Dependencies
Trainers and Admin are not fraud	We are assuming that trainers and admin which runs the institution locally holds the approval of the driving lesson learning process, they are not cheaters
All users of the system are knowledgeable	We are assuming all users of this application have enough amount of knowledge regarding how to operate device and perform their desired/required activities flawlessly
All users will have required hardware and software	Here, we are making an assumption that all users of the system will have internet connection and their hardware is compatible enough to open the web application

5. Product Features

Name	Description
Login	All the users of the system will have their own login credentials which let them enter into the web application from EDC (export development canada) server and they can perform their respective activities
Student Dashboard	Student can view their ID number, exam details (their next scheduled exam) and payment history ie. when training and payment will expire. They can also able to see the type of licence and their lessons from SRS list information and slider can be shown/visible in the dashboard
Student Lesson Information	From the lesson information section student can be able to see total lessons required, along with completed and remaining lessons and they can also see their progress in the information section
Student E-Learning slider	The E-learning slider contains the lesson videos, the duration of each video is visible on top. By going into detail view of the video content ie. On click of lesson on the slider, students are able to see the video of the lesson followed by prev or next slide. Quiz questions will come up in further slides where they can do practice. Importantly, even if student logout from the application, once they back they can see where they left from and instead of starting from beginning they can resume from where they left
Trainer Dashboard	The trainer dashboard contains the total lessons count, along with the draft lesson section and pending lesson section. They can also see the notification from the dashboard

Manage Lessons	The trainer/admin can create the lesson, edit the lesson, delete and re-work on the lesson based on received feedback from the admin. Lesson information such as version, slide. status and other related metadata information. At a time only one trainer can manage the same lesson, concurrent access is not allowed. Admin user has the ability to approve the lesson and publish it so that lesson is accessible by the students onto the application Edit/Delete only be done by the admin after publishing, if the lesson is not yet published then trainer can perform the same operations too.
Lesson creation	The trainers/admin can add slides, quiz, and upload icons if needed. lessons can contain names and descriptions which also need to be added by the trainer, followed by submission required to the admin user
Lesson details	Lesson details contain slide creation. Slide order, title, type and description can also be added. slides can also contain comments if any made by an admin user, that information is also shown to the trainer on slide view
Quiz creation	Quiz creation required questions to be added followed by options based on quiz type. media files also added if the question requires Quiz creation also supports the drag and drop operation and re-ordering the options.
Notification	Trainer/Admin can see the notifications, which describe the status and action, status formally describes the recent comment or approval/rejection whereas action/view leads trainer to go to specific lesson/slide.
Admin Dashboard	Admin user dashboard contains all the features of trainer's dashboard and moreover students and trainers list are also visible to admin. The slide preview and comments with metadata on the dashboard

6. Other Product Requirements

Technology stack

- PHP, MVC Architecture

Software and Hardware requirements

- The application should be compatible with web browser over the computer, laptop and other supported smart-devices
- All types of operating system such as MacOs, Windows and Linux should support the browser compatibility requirement

Performance requirements

- The application should be highly available and supports load balancing to handle large amount of users
- Latency through database should be as minimal as possible

Document requirements

- The application should have contact-us and user manual which describes user activities based on their role. Additionally, contact-us and one time training will be provided to the system users on how to use the system

CHANGE LOG

Date	Version	Change
July 14, 2021	1.0	Initial draft
Aug 02, 2021	1.1	Updated vision document based on the feedback received. Changes are highlighted with a yellow background.
Aug 16, 2021	1.2	Updated vision document based on reviewer's feedback and open items based on Defects and inconsistencies inspection forms. Changes are highlighted with a yellow background.

APPENDIX

Activity	Duration (updated)
Introduction	20 minutes
Positioning	1 hour 5 minutes
Stakeholder Descriptions	55 minutes
Product Overview	1 hour 20 minutes
Product Features	2 hours
Other Product Requirements	30 minutes

Defects and inconsistencies inspection forms

Task 1 – Identifying and finding inconsistencies in vision document

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Time spent during inspection : **8 hour**

Decision Table

Defect #	Location	Defect type	Classification	Description	Status	Date corrected
1	Section 4.2 - Assumptions and Dependencies	Unintelligibility	Minor	*Users of the system are knowledgeable* - It assumes that all the users ie. trainers and admin are having a good amount of knowledge to operate the system.	closed	08/16/21
2	Section 5 - Product Features	Omission	Major	The slide preview and comments with metadata on the dashboard for admin users is not described in the vision document. (Feature missing)	closed	08/16/21
3	Section 5 - Product Features	Strong Conflict	Major	When one trainer is managing lessons, no other trainer or admin can work on the same, multiple users simultaneously access	closed	08/16/21

				- the feature is not mentioned in the vision document. (Concurrent access prohibited)		
4	Section 2.1 - Problem Statement	Forward Reference	Minor	The term EDC is stated without further explanation of the meaning or context in the vision document. (Undefined)	closed	08/16/21
5	Section 5 - Product Features	Omission	Minor	Quiz creation - options reordering is not defined in the vision doc. (Feature missing)	closed	08/16/21
6	Section 5 - Product Features	Unintelligibility	Minor	The Manage lesson section has an edit/delete slide option. However, the context isn't mentioned as once a slide(lesson) is published, who can and can not perform the operation is not described in the vision document. (less information provided)	closed	08/16/21
7	Section 3.3 - User Environment	Overspecification	Minor	The term smart devices is used to state the accessibility of the application. However, it is not describing any problem world solution. (machine solution)	closed	08/16/21

Inconsistency Table

#	Location	Inconsistency type	Classification	Description	Status	Date corrected
1	Section 2.1 - Problem Statement	Terminology clash	Weak	The term EDC is stated without further explanation of the meaning or context.	closed	08/16/21
2	Section 3.2 - User Summary	Designation clash	Weak	The term learner and student are the same but used in different ways.	closed	08/16/21
3	Section 3.4 - Key Stakeholder or User Needs	Structure clash	Strong	The term knowledge check and quiz are the same but used in different ways.	closed	08/16/21
4	Section 2.1 - Problem Statement	Terminology clash	Weak	The term lesson and lecture are the same but used in different ways.	closed	08/16/21
5	Section 2.1 - Problem Statement	Designation clash	Weak	The term Administrators and Admin are the same but used in different ways.	closed	08/16/21

Other comments/recommendations

It is not mentioned which device supports this web application. Thus, it is not possible to determine quality attributes. Ie. responsiveness (if mobile device can be able to support)

Task 2 – Documenting conflicts

Features	#	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Total
Login	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
View dashboard	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
lesson information	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
progress information	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
E-learning slider	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
lesson information	6	0	0	0	0	0	0	1000	0	0	0	0	0	0	0	0	1000	0	0	0	0	0	0	0	2000
slides preview	7	0	0	0	0	0	1000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1000
attempting quiz	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1000	1	1	0	0	0	0	0	1002
logout and login on same content	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
trainer notification	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1000	0	0	0	0	0	0	0	1000
trainer create lesson/slides	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
trainer edit lesson/slides	12	0	0	0	0	0	0	0	0	0	0	0	1000	0	0	0	0	0	0	0	1000	1000	0	0	3000
trainer delete lesson/slides	13	0	0	0	0	0	0	0	0	0	0	0	0	1000	0	0	0	0	0	0	1	0	0	0	1001
review lesson	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
publish lesson	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1000	1000	0	0	2000
create quiz	16	0	0	0	0	0	1000	0	1000	0	1000	0	0	0	0	0	0	0	0	0	0	0	0	0	3000
edit quiz	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1000	0	0	0	0	0	1000
delete quiz	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1000	0	0	0	0	0	0	1000
admin notification	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
admin edit lesson/slide	20	0	0	0	0	0	0	0	0	0	0	0	1000	1	0	0	1000	0	0	0	0	0	0	0	2001
admin delete lesson/slide	21	0	0	0	0	0	0	0	0	0	0	0	1000	0	0	0	1000	0	0	0	0	0	0	0	2000
view students list	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
view trainers list	23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	2000	1000	1000	0	1000	0	3000	1001	0	0	5000	1001	1001	0	2001	2000	0	0	**20004**

[Interaction matrix]

The total number of non-conflicting overlaps and conflicts: 20004/1000

Non-conflicting overlap: **20**

Conflict: **4**

Task 3 – Conflict resolution

#	Conflict	Conflict Resolution **#1**	Conflict Resolution **#2**
1	When one trainer is managing lessons, no other trainer can work on the same	In case multiple trainers are managing the same lesson at same time, there should be a feature added as locking, so when locking is enabled no other trainer can access that lesson. This will allow dynamic accessibility. *Tactic used:* ***Add new requirement to avoid the conflict***	In case multiple trainers are managing the same lesson at same time, the system can show a popup that someone is already accessing it please, wait till changes are made. And before leaving show a popup that you are sure you want to leave. [Still, if the trainer moves from one lesson to another page and another trainer accessed a lesson which is having edit-in-progress then the previous trainer has to wait] *Tactic used:* ***Add new requirement to weaken the conflict***
2	When a student is previewing a lesson/slide and admin edit/delete lesson/slide at the same time	In case a student is previewing the lesson/slide and at the same time the admin tries to edit/delete, it should have cached content available to students in such a system shouldn't get broken. [Still, it should fetch older content even after slides are updated because of cache TTL] *Tactic used:* ***Add new requirement to weaken the conflict***	There should be a maintenance window in which admin can edit/delete lesson/slides for the lessons which are already published to the students. So that, the admin can do this change in a dedicated time slot and no student activity gets affected. The maintenance window is dynamically adjustable from the application setting which admin can have access, student gets email notification or when logs in to the system, the dashboard prompt bar displays scheduled maintenance information. *Tactic used:* ***Add new requirement to avoid the conflict***

3	When student is attempting a quiz and admin edit/delete quiz at the same time	When a student is attempting the quiz for the lesson at the same time, the admin shouldn't be able to delete or edit the quiz. Instead, there should be an option where the admin can create a new quiz for a specific lesson and associate it with that lesson after removing the current quiz from that lesson. *Tactic used:* ***Add new requirement to avoid the conflict***	When a student is attempting the quiz for the lesson, do not allow the admin to edit/delete the quiz on which at least one student is attempting at the same time. When there is no student attempting the quiz, update the quiz content or delete it. *Tactic used:* ***Avoid boundary condition***
4	When trainer is edit a lesson/slide and admin delete the lesson/slide	In case a trainer is managing the lesson at the same time the admin can not be able to perform any operation on that lesson, there should be a feature added as locking, so when locking is enabled admin can not access that lesson. This will allow dynamic accessibility. *Tactic used:* ***Add new requirement to avoid the conflict***	In case the trainer and admin are managing the same lesson at same time, the system can show a popup that someone is already accessing it please, wait till changes are made. And before leaving show a popup that you are sure you want to leave. [Still, if the trainer moves from one lesson to another page and admin accessed a lesson which is having edit-in-progress then the trainer has to wait] *Tactic used:* ***Add new requirement to weaken the conflict***

Task 4 – Conflict evaluation

Conflicts identified in Task-3 are evaluated further using weighted matrix technique.

$$totalScore(opt) = \sum_{crit} (Scores(opt, crit) \times Weight(crit))$$

Conflict 1: When one trainer is managing lessons, no other trainer can work on the same

Evaluation criteria NFR	Significance weighting	Add Locking Feature [Option #1]	Add confirmation pop-up feature [Option #2]	Selected Option
Usability	0.7	0.7	0.2	Add Locking Feature [Option #1]
Cost	0.3	0.3	0.6	
Total	1.0	0.58	0.32	
Conflict Evaluation				
[Option #1] - Adding locking functionality to the trainer/admin before performing any edit/delete operation so that no other trainer/admin can simultaneously work on the same lesson/slide.				

Conflict 2: When a student is previewing a lesson/slide and admin edit/delete lesson/slide at the same time

Evaluation criteria NFR	Significance weighting	Content caching [Option #1]	Dynamic Maintenance window implementation [Option #2]	Selected Option
Minimal inconvenience	0.2	0.3	0.5	Dynamic Maintenance window implementation [Option #2]
Reliability	0.3	0.2	0.6	
Cost	0.5	0.3	0.8	
Total	1.0	0.27	0.68	
Conflict Evaluation				
[Option #2] - Dynamic implementation of maintenance window from the application by admin prevents				

unusual errors and students use applications flawlessly by having maintenance at specific time,notify students in advance instead of using cached content which is not accurate all time.

Conflict 3: When student is attempting a quiz and admin edit/delete quiz at the same Time

Evaluation criteria NFR	Significance weighting	Separate quiz creation, attach/detach to lesson as need [Option #1]	Student access validation before edit/delete quiz [Option #2]	Selected Option
Cost	0.3	0.5	0.1	Separate quiz creation, attach/detach to lesson as need [Option #1]
Reliability	0.3	0.7	0.8	
Usability	0.2	0.7	0.3	
Minimal inconvenience	0.2	0.2	0.6	
Total	1.0	0.54	0.45	

Conflict Evaluation

[Option #1] - Adding quiz creation as a separate module and associating each quiz with specific lesson, once quiz needs to update and lesson content needs to remain the same, detach existing quiz from the lesson and assign a new/updated quiz.

Conflict 4: When trainer is edit a lesson/slide and admin delete the lesson/slide

Evaluation criteria NFR	Significance weighting	Add Locking Feature [Option #1]	Add confirmation pop-up feature [Option #2]	Selected Option
Usability	0.7	0.7	0.2	Add Locking Feature [Option #1]
Cost	0.3	0.3	0.6	
Total	1.0	0.58	0.32	

Conflict Evaluation
[Option #1] - Adding locking functionality to the trainer/admin before performing any edit/delete operation so that data integrity would remain in place.

Task 5 – Risk management

Risk 1: There is no way to recover the password if the user forgets.

#1 Related NFR	Security		
#2 Risk Type	Product Related Risk		
#3 Likelihood	High		
Qualitative assessment			
Consequences	Likely	Possible	Unlikely
Loss access to application	Severe	High	Low
Loss of security	High	Moderate	Low
Rationale			
- If the user forgets the password then (s)he should unable to access the application			
- If the password is kept in any place, there is a security issue if someone gets it and uses it for other purposes.			
Counter Measure Options			
Option #1		Option #2	
There should be an option to reset/forgot password for the user. In which they can update or reset the password based on email authentication. The		The other option is to have whenever user enters the wrong password 3 to 5 times, application should prompt that do you forget password and if	

password reset link can be sent to the user's email address and from that user able to reset/update the password. *Tactic used:* ***Avoid risk***	user says yes, then application can send an email with default generated password so that user can logs back in. *Tactic used:* ***Reduce risk likelihood***
Counter Measure Evaluation	

Evaluation criteria NFR	Significance weighting	Dynamic reset/update password [Option #1]	Default password sent to user via email [Option #2]	Selected Option
Usability	0.3	1	0.7	Dynamic reset/update password [Option #1]
Security	0.4	0.8	0.3	
Cost	0.3	0.6	0.3	
Total	1.0	0.80	0.42	
Most Cost-Effective Measure				
[Option #1] - Adding a dynamic password reset would be most prominent solution to the risk of losing password				

Risk 2: Implementing all functionalities may incur more cost instead of having low cost software solution

#1 Related NFR	Cost		
#2 Risk Type	Process Related Risk		
#3 Likelihood	High		
Qualitative assessment			
Consequences	Likely	Possible	Unlikely

Increasing cost	High	Moderate	Low
Increase in time to deliver product	High	Moderate	Low
Increase time to launch to end user - revenue loss	Severe	High	Low

Rationale
- Multiple features in single release increase overall implementation and verification time which directly impact the cost
- If the implementation and verification time increases than the delivery timeline also gets affected
- It will take long time to launch in market thus business revenue impact can also be seen

Counter Measure Options	
Option #1	Option #2
The risk avoidance can be achieved by eliminating extra requirements and only having required/generic requirements for the delivery. *Tactic used:* ***Avoid risk***	The risk can be reduced by using the agile based model while implementing this application as a lifecycle. Agile helps to prioritize necessary features in earlier stages and later stages contain less important features. *Tactic used:* ***Reduce risk likelihood***

Counter Measure Evaluation

Evaluation criteria NFR	Significance weighting	Supporting generic requirements [Option #1]	Adapting agile life cycle as a process model [Option #2]	Selected Option
Reliability	0.6	0.3	0.8	Adapting agile life cycle as a process model [Option #2]
Cost	0.4	0.5	0.7	
Total	1.0	0.38	0.76	

Most Cost-Effective Measure

[Option #2] - Agile life cycle model is more suitable to reduce the risk likelihood if the cost and reliability criteria can be considered.

Risk 3: The authentication and data are being fetched from the backend server through API, there is a chance when the backend server goes down.

#1 Related NFR	Availability		
#2 Risk Type	Product Related Risk		
#3 Likelihood	Moderate		
Qualitative assessment			
Consequences	Likely	Possible	Unlikely
Loss access to application	Moderate	Moderate	Low
Loss application reputation	High	High	Moderate
Loss in revenue	Moderate	Moderate	Low
Rationale			
- If the backend server is down, student can not able to enter the system and complete/start their learning process, similarly trainer can't able to add/edit lessons			
- If this issue happens frequently than it harms the application reputation as students think the application is not appropriate with their use case			
- The organization/driving school revenue gets impacted due to several hours of inactivity			
Counter Measure Options			
Option #1		Option #2	
Whenever the system goes down, send an alert to users that "the system is not working at the moment, once it is up you will receive an alert". This solution does not lead towards availability. However, it reduces		Another potential solution is to have the application be scalable and deployed in multiple availability zones, so as soon as one instance of	

potential risk to break down the system again due to less users will use the application after receiving an alert. *Tactic used:* ***Reduce risk consequence likelihood***	application goes down, another instance of the application spins up to achieve high availability. *Tactic used:* ***Reduce risk likelihood***
Counter Measure Evaluation	

Evaluation criteria NFR	Significance weighting	Send out an alert when system goes down [Option #1]	Implement scalability and multiple availability zone deployment [Option #2]	Selected Option
Availability	0.5	0.2	0.8	Implement scalability and multiple availability zone deployment [Option #2]
Performance	0.5	0.6	0.9	
Total	1.0	0.40	0.95	
Most Cost-Effective Measure				
[Option #2] - Deployment in multiple availability zones and having applications configured with auto Scaling should be a potential solution to avoid server down.				

Risk 4: The internet speed varies across the city/region, the system takes significant time for loading and the user experience becomes worse.

#1 Related NFR	Reliability, Usability, Performance		
#2 Risk Type	Product Related Risk		
#3 Likelihood	Moderate		
Qualitative assessment			
Consequences	Likely	Possible	Unlikely

Increase in response time	High	Moderate	Low
Loss faith in application	Severe	High	Moderate
Degradation in business appreciation	High	High	Moderate

Rationale
- The application response time increase which affects application performance
- The students(users) faith gets decrease if it takes significant time to load the web page from their device
- The low performance application with less usability can not able to make and reach to large customer/user/student base and it directly impact on business revenue

Counter Measure Options	
Option #1	Option #2
When the application takes more time to load due to lower internet connectivity, one solution would be to have a lite version of the application which helps to load only necessary features and prompt user to load further or to move to default app instead of lite version. *Tactic used:* ***Reduce risk consequence likelihood***	Another potential solution is to implement a caching mechanism which caches the content and addition of content delivery networks such as aws cloudfront to reduce the latency and increase the application performance. *Tactic used:* ***Reduce risk likelihood***

Counter Measure Evaluation

Evaluation criteria NFR	Significance weighting	Lite app version implementation [Option #1]	Caching and adding CDN layer [Option #2]	Selected Option
Reliability	0.3	0.4	0.7	Caching and adding CDN layer [Option #2]
Usability	0.2	0.3	0.6	
Performance	0.5	0.7	0.8	
Total	1.0	0.53	0.73	

Most Cost-Effective Measure
[Option #2] - The addition of a content delivery network layer such as AWS Cloudfront which helps applications to reduce the latency and so that performance can be increased as response time decreases. Caching also helps to load/render quickly

APPENDIX

Activity	Duration
Task 0 - Logging	30 minutes
Task 1 – Identifying and finding inconsistencies in vision document	1 hour 30 minutes
Task 2 – Documenting conflicts	1 hour 30 minutes
Task 3 – Conflict resolution	1 hour 45 minutes
Task 4 – Conflict evaluation	1 hour 30 minutes
Task 5 – Risk management	2 hours

The following is a rebuttal template for the feedback received on delivery 2 on your vision document.

1. Title: **Response to reviewers, teacher assistant and instructor.**

2. Introduction:

I would like to thank the reviewers, teacher assistant for their detailed feedback and useful suggestions to improve my vision document.

I have carefully considered all the issues raised by my peers. Teacher assistant, and instructor and prepared a revised vision document. This document outlines how I have addressed each comment individually. Each comment has been assigned a number R(1-3).C(1-N), where the number to the right of the R identifies the reviewer, and the number to the right of the C identifies the comment.

My response to each comment is highlighted in blue.

Thanks for the opportunity to improve my vision document

Sincerely,

[redacted]

2. Create a table when you identify each reviewer with a unique identifier.

Reviewer	ID
Peer 1 (comments received in D2)	R1
Peer 2 (comments received in D2)	R2
Teacher assistant (comments received in D1)	R3

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3. Reviewer comments

List each comment and assign a unique ID. For example:

R1.01 [Now here to identify the risks with 3 techniques]

The comment is reviewed and below the three techniques #RelatedNFR, #RiskType and #Likelihood are already used.

R2.01 [Inconsistency describing EDC]

The comment is taken into consideration and the vision document is updated by adding the definition of the EDC terminology.

R2.02 [The author did not use the information generated in task 1. Instead he/she took the features as part of input for the interaction matrix]

The Interaction matrix is the matrix which shows the interaction between the requirements not between the inconsistencies. So, the prepared interaction matrix is valid from the author's perspective. re: https://www.csm.ornl.gov/~sheldon/cs531/ch3.pdf

R2.03 [The problem is that he/she is unable to provide the name of tactic in most of the cases, which he/she used. He/She wrote a "add new requirement to avoid the conflict" in the tactic name but this is not the operator, it might just be a part of some operators (Tactic example - avoid boundary conditions, weaken conflicting statements, etc.)]

The comment is reviewed and "Adding the new requirement" is also a tactic similar to weakening the statement. However, as per the reviewer solutions are already suggested accordingly.

R2.04 [The author has not provided any clarification about the techniques used for identifying risks instead he/she directly defined the risks]

The comment is reviewed and below the three techniques #RelatedNFR, #RiskType and #Likelihood are already used to identify risk.

R2.04 [effective measure using the risk reduction leverage technique (RRL)" the author has not calculated]

The comment is reviewed and taken into consideration. The author accepted his mistake of using weighted matrix technique in risk management and analysis instead of using RRL. However, it has been mentioned that only ***(tasks 1-4, D2)*** needs to be updated, so the author has not updated Task-5 risk management and analysis.

R3.01 [Stakeholders are partially missing/incorrect]

The comment is reviewed and taken into consideration. Stakeholders are updated with their description.

R3.02 [Block diagram is missing]

The comment is reviewed and taken into consideration. Block diagram is added and vision document is updated.

APPENDIX

Activity	Duration
Reviewing and updating the Rebuttal template	30 minutes