**ASSIGNMENT 2 FRONT SHEET**

|  |  |  |  |
| --- | --- | --- | --- |
| **Qualification** | **BTEC Level 5 HND Diploma in Computing** | | |
| **Unit number and title** | Unit 30: Application Development | | |
| **Submission date** |  | **Date Received 1st submission** |  |
| **Re-submission Date** |  | **Date Received 2nd submission** |  |
| **Student Name** | Đỗ Nam Khánh | **Student ID** | BH00021 |
| **Class** | IT0502 | **Assessor name** | Nguyen Thanh Trieu |
| **Student declaration**  I certify that the assignment submission is entirely my own work and I fully understand the consequences of plagiarism. I understand that making a false declaration is a form of malpractice. | | | |
|  |  | **Student’s signature** | khanh |

**Grading grid**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| P4 | P5 | P6 | M3 | M4 | M5 | D2 | D3 |
|  |  |  |  |  |  |  |  |

|  |  |  |
| --- | --- | --- |
| **❒ Summative Feedback: ❒ Resubmission Feedback:** | | |
| **Grade:** | **Assessor Signature:** | **Date:** |
| **Lecturer Signature:** | | |

1. Introduction.
2. Content.

P4 Create a formal questionnaire that effectively reviews your business application, problem definition statement, proposed solution and development strategy. Use this questionnaire as part of a peer-review and document any feedback given.

1. Formal questionnaire:

Link google from: https://forms.gle/Pw1VrFYtyNrQJKJn6

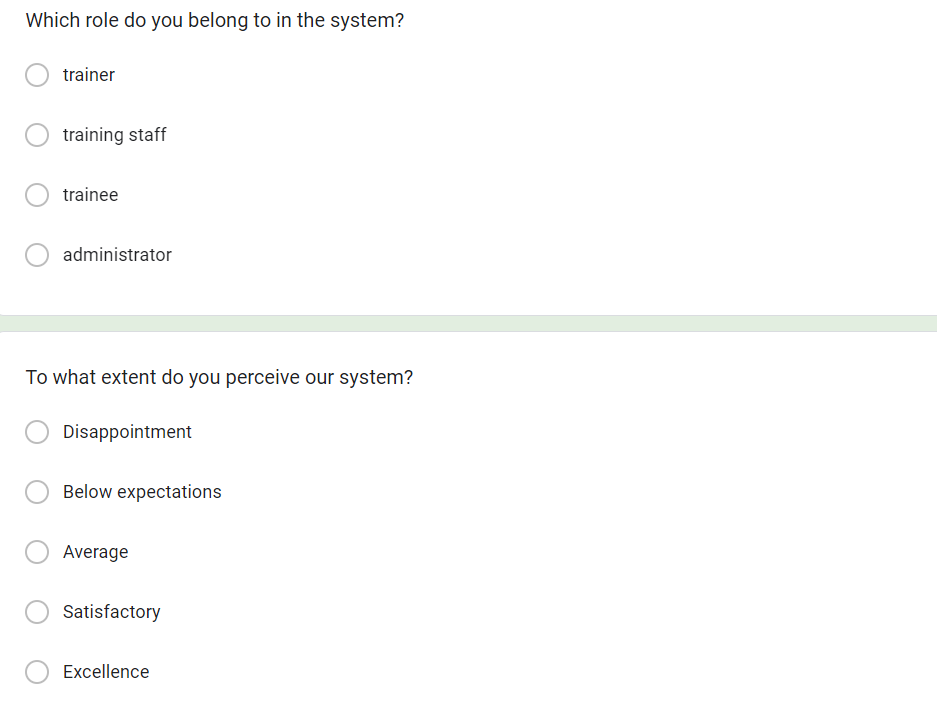


Figure 1 Question

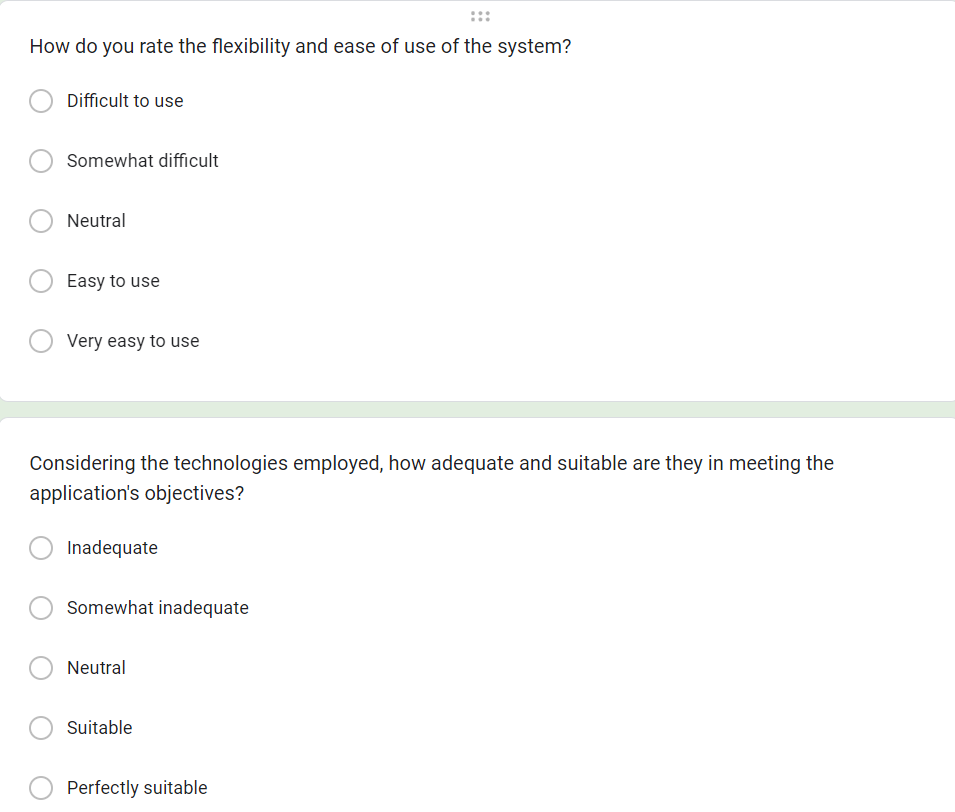


Figure 2 Question

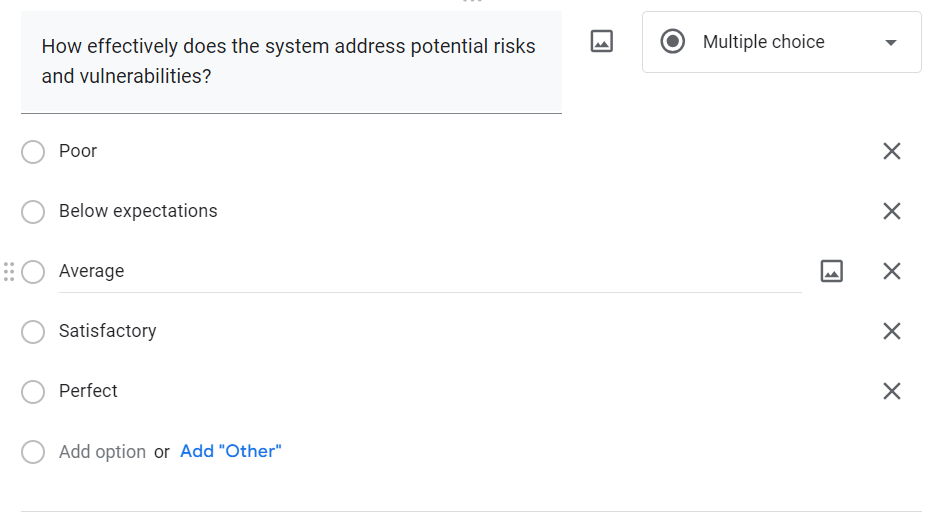


Figure 3 Question

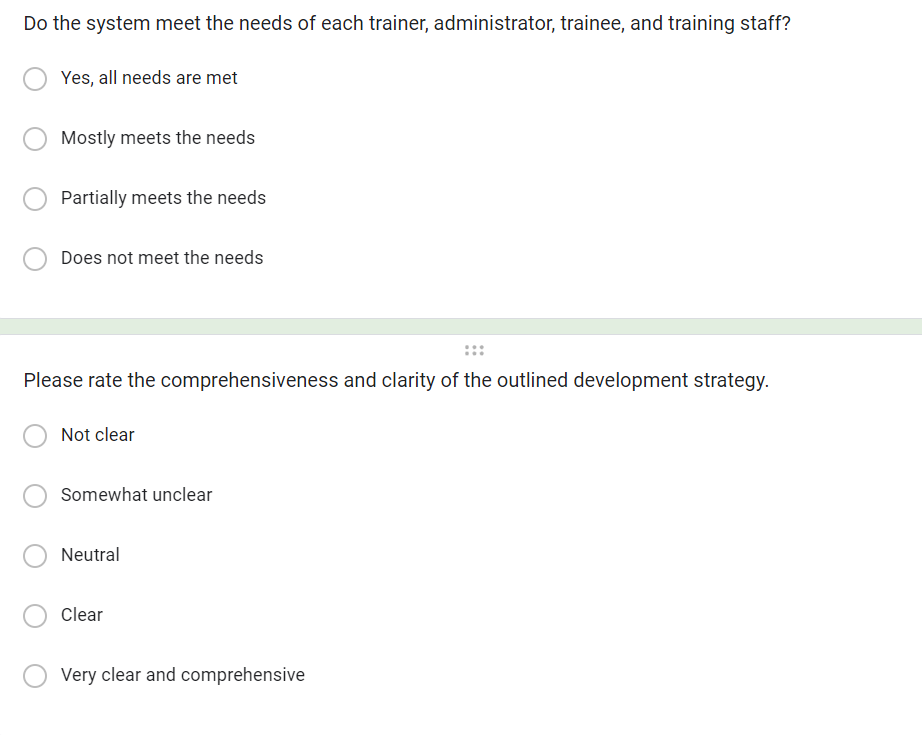


Figure 4 Question

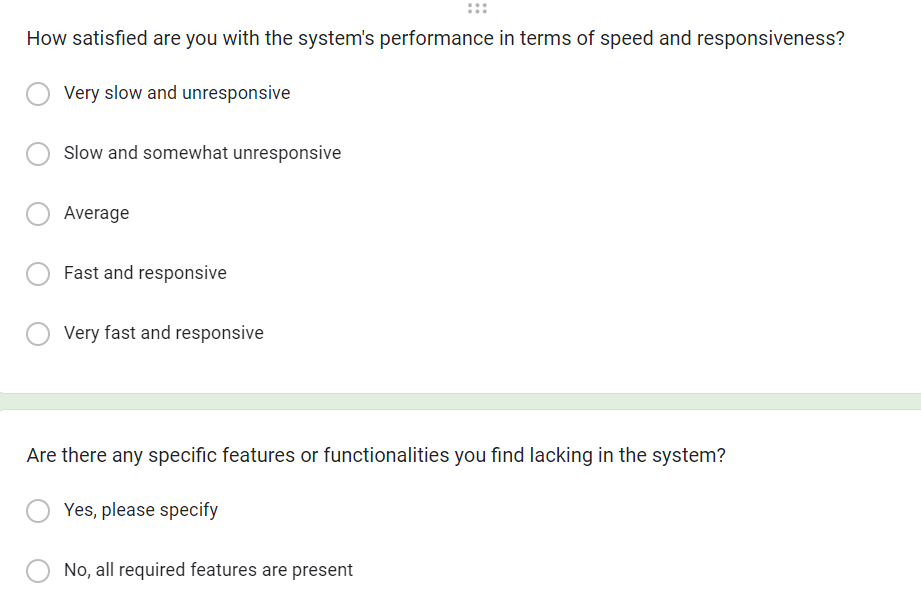


Figure 5 Question

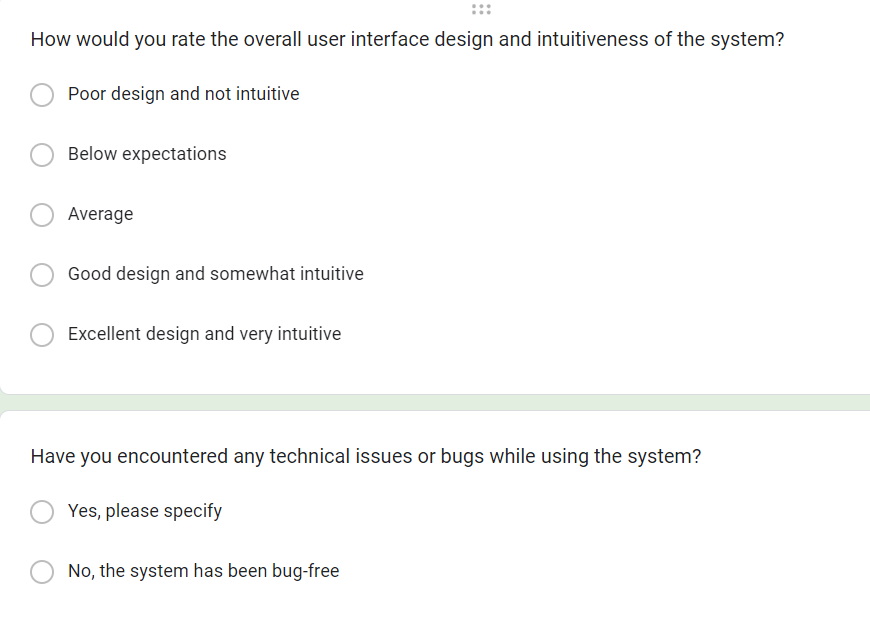


Figure 6 Question

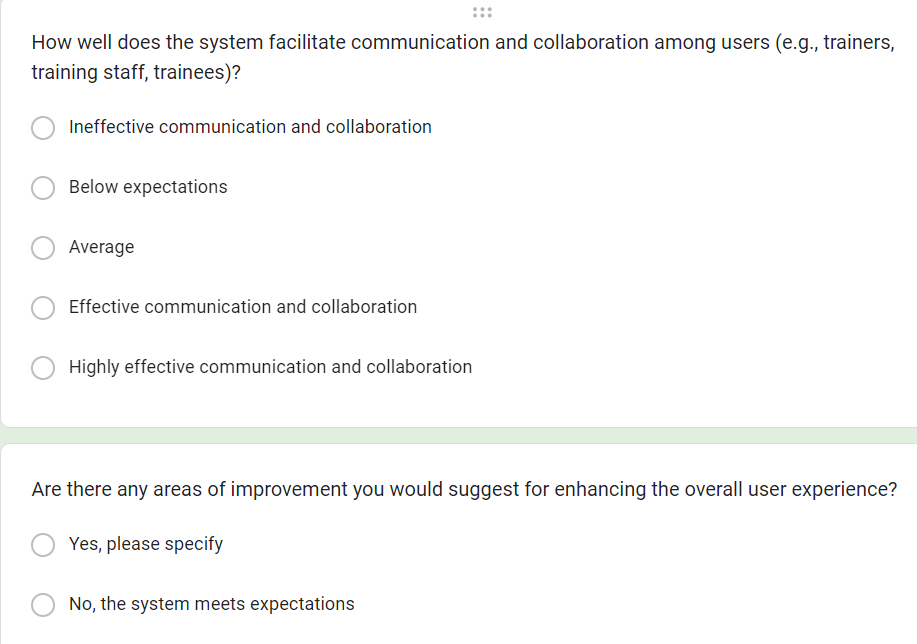


Figure 7 Question

1. The result of survey

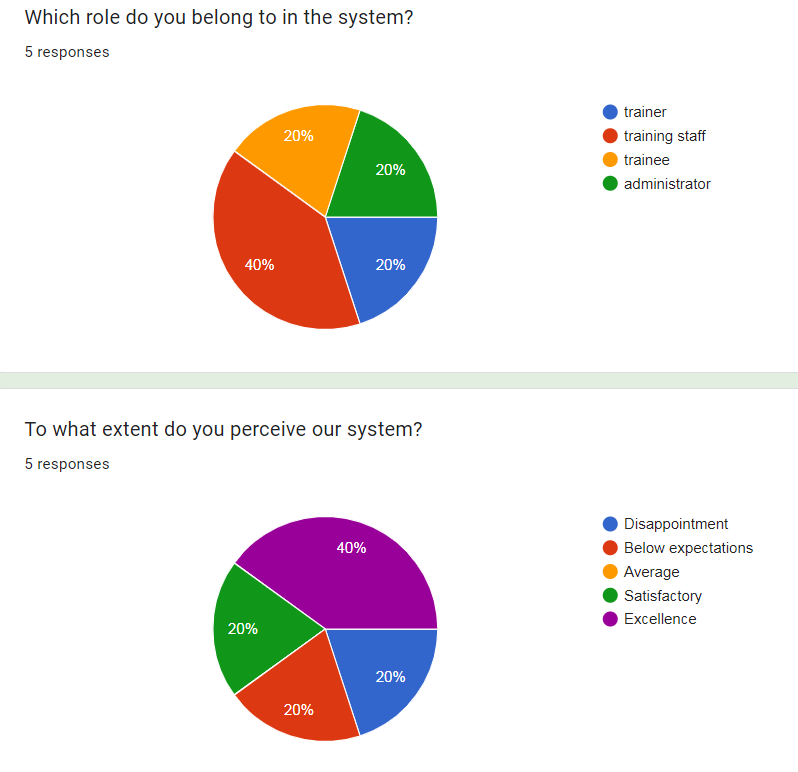


Figure 8 Result

* 1. Role Distribution:
* Training staff: 40%
* Trainer, Trainee, and Administrator (combined): 20% each

Explanation: The majority of respondents (40%) identified themselves as training staff, indicating that this role is more prevalent among those interacting with the system. The remaining 20% of respondents were distributed evenly among the other roles, suggesting a relatively balanced representation across trainer, trainee, and administrator roles.

* 1. Perception of the System:
* Excellence (5): 40%
* Below expectations (2), Average (3), Satisfactory (4): 20% each

Explanation: A significant portion of respondents (40%) perceived the system as excellent, indicating a high level of satisfaction and appreciation for its functionality and features. Conversely, the remaining 60% of respondents selected various lower ratings, suggesting differing levels of satisfaction or areas for improvement in the system's performance and usability.

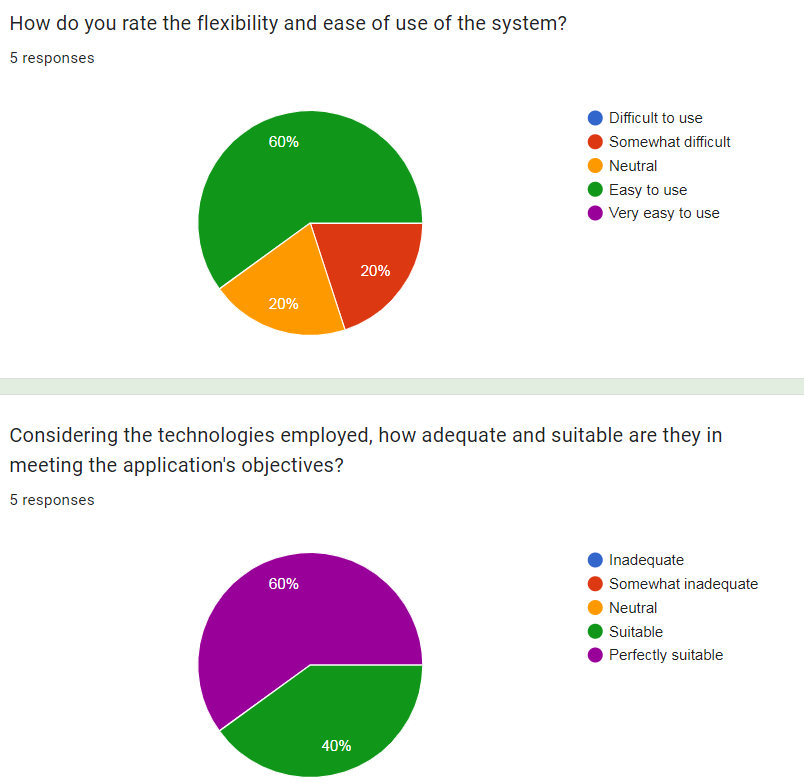


Figure 9 Result

* 1. Flexibility and Ease of Use:
* 60% of respondents chose "d) 4 - Easy to use."
* 40% of respondents split evenly between "b) 2 - Somewhat difficult" and "c) 3 - Neutral."

Explanation: The majority of respondents (60%) find the system easy to use, indicating a high level of flexibility and user-friendliness. However, there is a significant minority (40%) who find the system somewhat difficult or neutral in terms of ease of use, suggesting that there may be areas for improvement in user interface design or instructional materials to enhance usability for all users.

* 1. Suitability of Technologies:
* 60% of respondents chose "e) 5 - Perfectly suitable."
* 40% of respondents chose "d) 4 - Suitable."

Explanation: The majority of respondents (60%) believe that the technologies employed in the system are perfectly suitable for meeting the application's objectives, indicating a high level of confidence in the technological infrastructure. Additionally, 40% of respondents consider the technologies to be suitable, further supporting the notion that the system is well-equipped to fulfill its intended purposes. Overall, the high proportion of respondents selecting "Perfectly suitable" suggests a robust technological foundation supporting the system's functionalities.

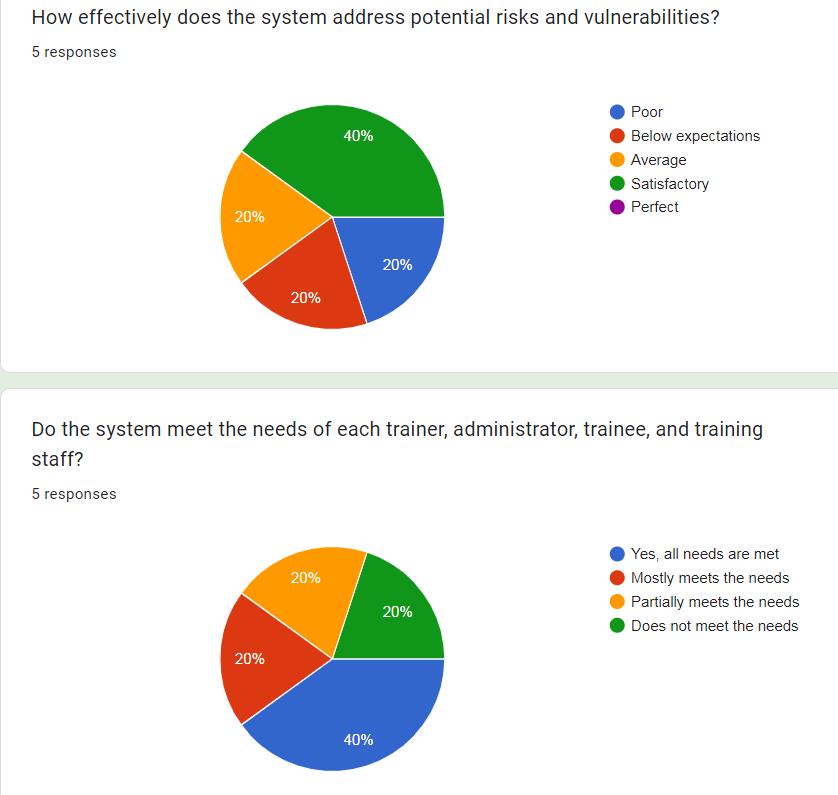


Figure 10 Result

* 1. Effectiveness in Addressing Risks and Vulnerabilities:
* 40% of respondents chose "d) 4 - Satisfactory."
* The remaining 60% of respondents split evenly between "e) 5 - Perfect," "c) 3 - Average," and "b) 2 - Below expectations."

Explanation: A significant portion of respondents (40%) consider the system's effectiveness in addressing potential risks and vulnerabilities to be satisfactory, indicating a moderate level of confidence in its security measures. However, the remaining 60% of respondents have varied perceptions, with equal proportions expressing high confidence (choosing "Perfect"), moderate confidence (choosing "Average"), and lower confidence (choosing "Below expectations") in the system's ability to mitigate risks and vulnerabilities.

* 1. Meeting the Needs of Users:
* 40% of respondents chose "a) Yes, all needs are met."
* The remaining 60% of respondents split evenly between "b) Mostly meets the needs," "c) Partially meets the needs," and "d) Does not meet the needs."

Explanation: A significant portion of respondents (40%) believe that the system meets the needs of all users, indicating a high level of satisfaction and effectiveness in catering to the diverse requirements of trainers, administrators, trainees, and training staff. However, the remaining 60% of respondents have differing perceptions, with equal proportions expressing varying degrees of satisfaction or dissatisfaction with the system's ability to meet user needs. This suggests that while the system may perform well for some users, there may be room for improvement to better address the needs of others.

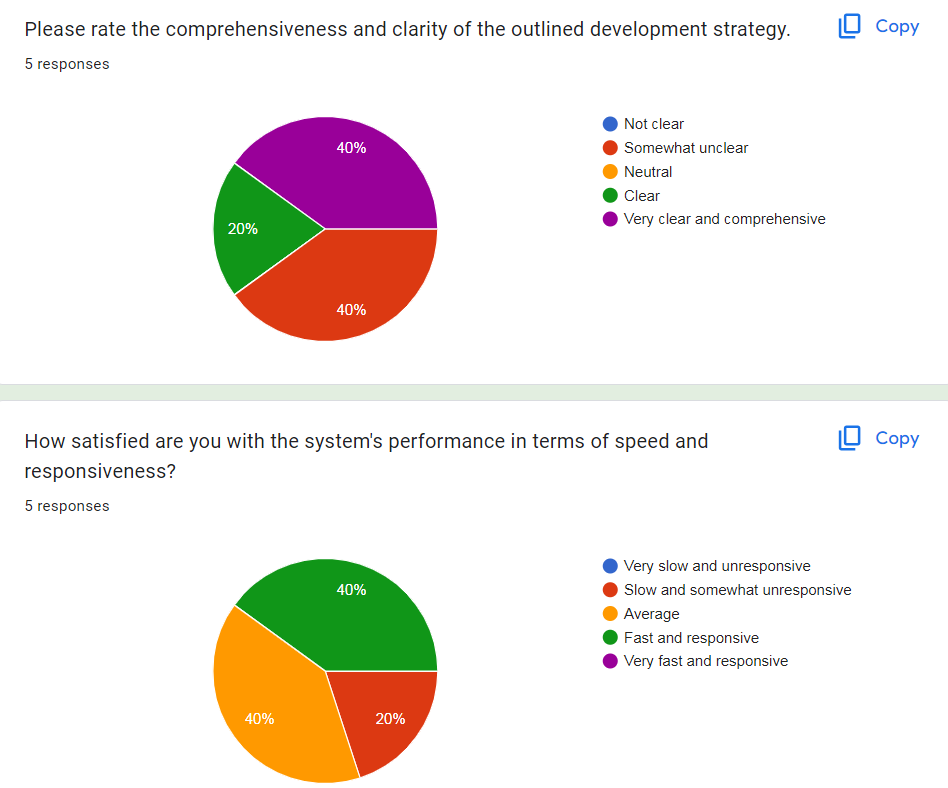


Figure 11 Result

* 1. Comprehensiveness and Clarity of Development Strategy:
* 40% of respondents chose "b) 2 - Somewhat unclear."
* 40% of respondents chose "e) 5 - Very clear and comprehensive."
* The remaining 20% of respondents chose "d) 4 - Clear."

Explanation: A significant portion of respondents (40%) perceive the outlined development strategy as somewhat unclear, suggesting that there may be areas that require further elaboration or clarification. However, an equal proportion of respondents (40%) find the development strategy to be very clear and comprehensive, indicating a high level of satisfaction with the provided information. The remaining 20% of respondents consider the strategy to be clear, indicating a moderate level of satisfaction.

* 1. System's Performance in Speed and Responsiveness:
* 40% of respondents chose "c) 3 - Average."
* 40% of respondents chose "d) 4 - Fast and responsive."
* The remaining 20% of respondents chose "b) 2 - Slow and somewhat unresponsive."

Explanation: The majority of respondents (80%) perceive the system's performance in terms of speed and responsiveness positively, with 40% rating it as average and another 40% rating it as fast and responsive. However, there is a minority (20%) who find the system to be somewhat slow and unresponsive, indicating room for improvement in this aspect of the system's performance.

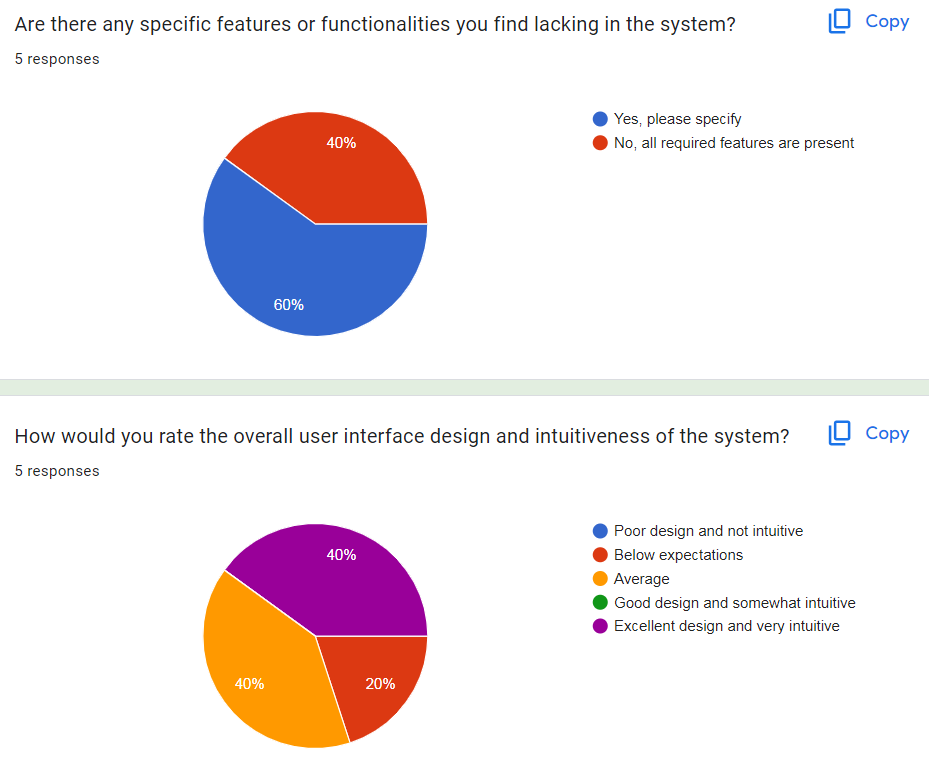


Figure 12 Result

* 1. Specific Features or Functionalities Lacking:
* 60% of respondents chose "a) Yes, please specify."
* The remaining 40% of respondents chose "b) No, all required features are present."

Explanation: A majority of respondents (60%) identified specific features or functionalities that they find lacking in the system, indicating areas for improvement or enhancement. However, 40% of respondents believe that all required features are present, suggesting a satisfactory level of completeness in the system's functionality from their perspective.

* 1. Overall User Interface Design and Intuitiveness:
* 40% of respondents chose "c) 3 - Average."
* 40% of respondents chose "e) 5 - Excellent design and very intuitive."
* The remaining 20% of respondents chose "b) 2 - Below expectations."

Explanation: The majority of respondents (80%) rated the overall user interface design and intuitiveness positively, with 40% considering it to be average and another 40% rating it as excellent and very intuitive. However, there is a minority (20%) who perceive the design to be below expectations, indicating potential areas for improvement in terms of user interface design and intuitiveness.

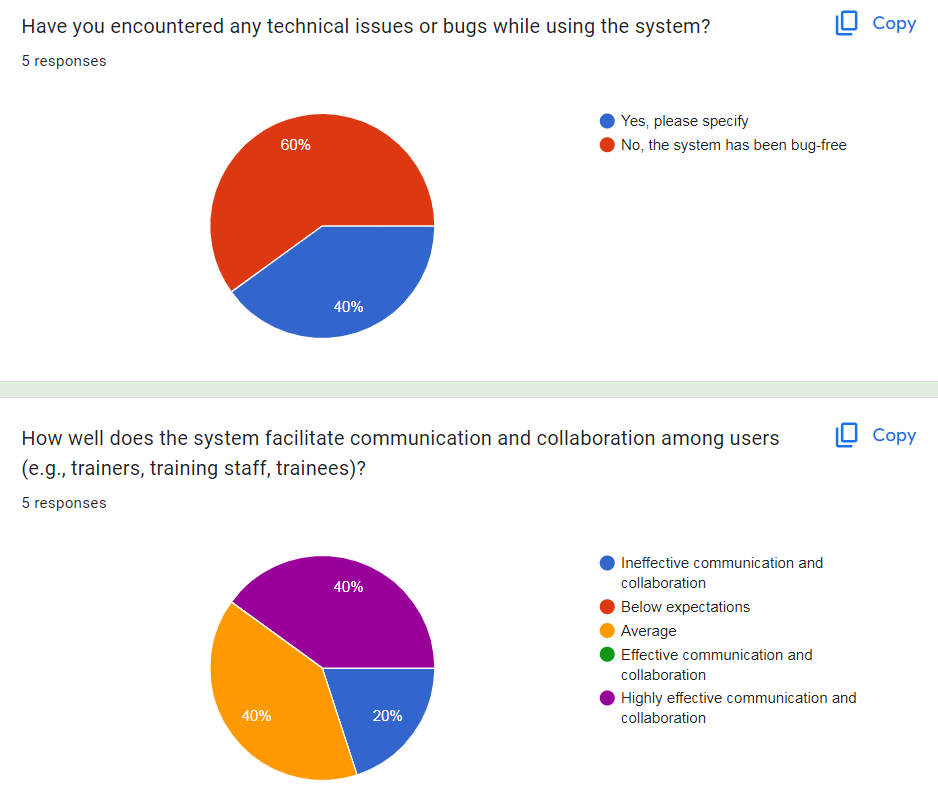


Figure 13 Result

* 1. Encountered Technical Issues or Bugs:
* 60% of respondents chose "a) Yes, please specify."
* The remaining 40% of respondents chose "b) No, the system has been bug-free."

Explanation: The majority of respondents (60%) reported encountering technical issues or bugs while using the system, indicating areas that require attention and improvement. However, 40% of respondents have not experienced any technical issues, suggesting a relatively stable and bug-free system for them.

* 1. Facilitation of Communication and Collaboration:
* 40% of respondents chose "c) 3 - Average."
* 40% of respondents chose "e) 5 - Highly effective communication and collaboration."
* The remaining 20% of respondents split evenly between "a) 1 - Ineffective communication and collaboration" and "b) 2 - Below expectations."

Explanation: The majority of respondents (80%) perceive the system to facilitate communication and collaboration effectively, with 40% considering it to be highly effective and another 40% rating it as average. However, there is a minority (20%) who have lower perceptions of the system's effectiveness in this rega

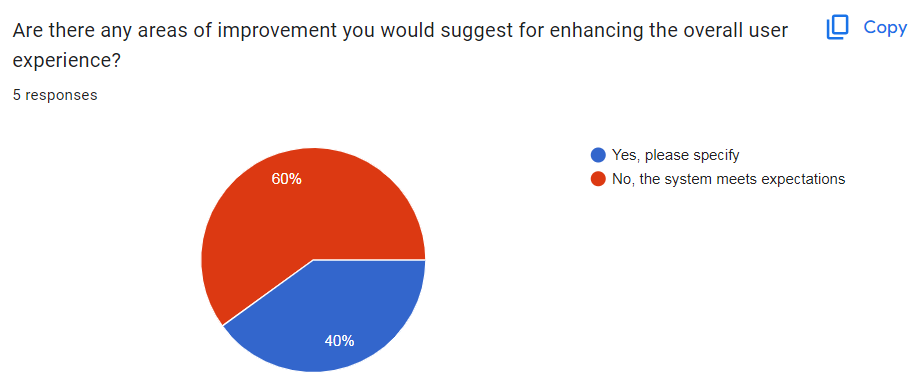


Figure 14 Result

* 1. Areas of Improvement for User Experience:
* Nearly 60% of respondents chose "b) No, the system meets expectations."
* The remaining respondents (approximately 40%) chose "a) Yes, please specify."

Explanation: The majority of respondents (nearly 60%) indicated that the system meets their expectations, suggesting overall satisfaction with the user experience. However, approximately 40% of respondents identified areas for improvement, indicating specific aspects of the system that could enhance the user experience further.

1. Feedback:

* The comprehensive survey you conducted sheds light on the overall satisfaction levels of users towards the business application. It's evident from the responses that there's a prevailing sense of contentment, with ratings predominantly falling between levels 3 to 5, indicating moderate to high satisfaction. Notably, level 2 ratings were scarce, suggesting a generally positive sentiment across the board.
* One particularly encouraging aspect is the feedback on the problem definition statement. It received consistently high ratings, primarily around level 4, implying a clear and articulate presentation of the core challenges addressed by the application. This clarity is crucial as it underpins the application's relevance and effectiveness in meeting the identified needs.
* In terms of the effectiveness of the proposed solution, the majority of responses clustered around level 4, suggesting a moderate to high level of effectiveness. While users perceive the application as providing valuable solutions, there's a consensus that further enhancements could be implemented to optimize its effectiveness and ensure it delivers the desired outcomes with utmost efficiency.
* The satisfaction expressed by users regarding the clarity and comprehensiveness of the development strategy is also noteworthy. Most responses, hovering around level 4, indicate that users perceive the strategy as well-defined and effectively communicated. However, there are areas identified for potential improvement, suggesting opportunities to elevate the strategy to an exemplary level and ensure it aligns seamlessly with the overall objectives of the application.
* Feedback on the alignment between the application's design, functionality, and user experience is largely positive, with ratings averaging around level 4. This indicates that the application effectively integrates its design elements with its functionality to create a cohesive user experience. Nevertheless, there's acknowledgment of areas where fine-tuning may be necessary to enhance usability and elevate the overall user experience to even greater heights.
* While users generally find the interface intuitive and user-friendly, as reflected in ratings ranging from 4 to 5, there's recognition of potential areas for improvement. Enhancements aimed at making the interface more user-centric and improving navigational ease could further enhance user satisfaction and overall usability.
* In summary, the survey responses paint a favorable picture of the business application, highlighting its strengths while also identifying areas for refinement and optimization. The aggregated ratings, spanning levels 3 to 5, provide valuable insights that can serve as a roadmap for further enhancing the application's capabilities and ensuring it evolves into a truly robust and user-centric solution.

P5 Develop a functional business application based on a specified business problem.

1. Code and DemoWeb:
   1. Training staff role’s .
      1. Login Training Staff.

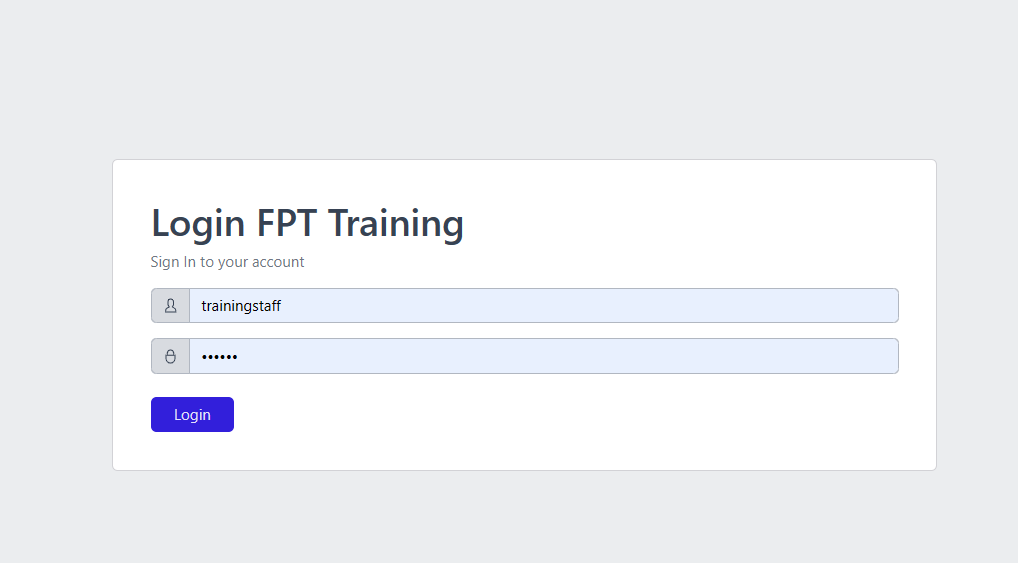


Figure 15 Login

Dashboard:

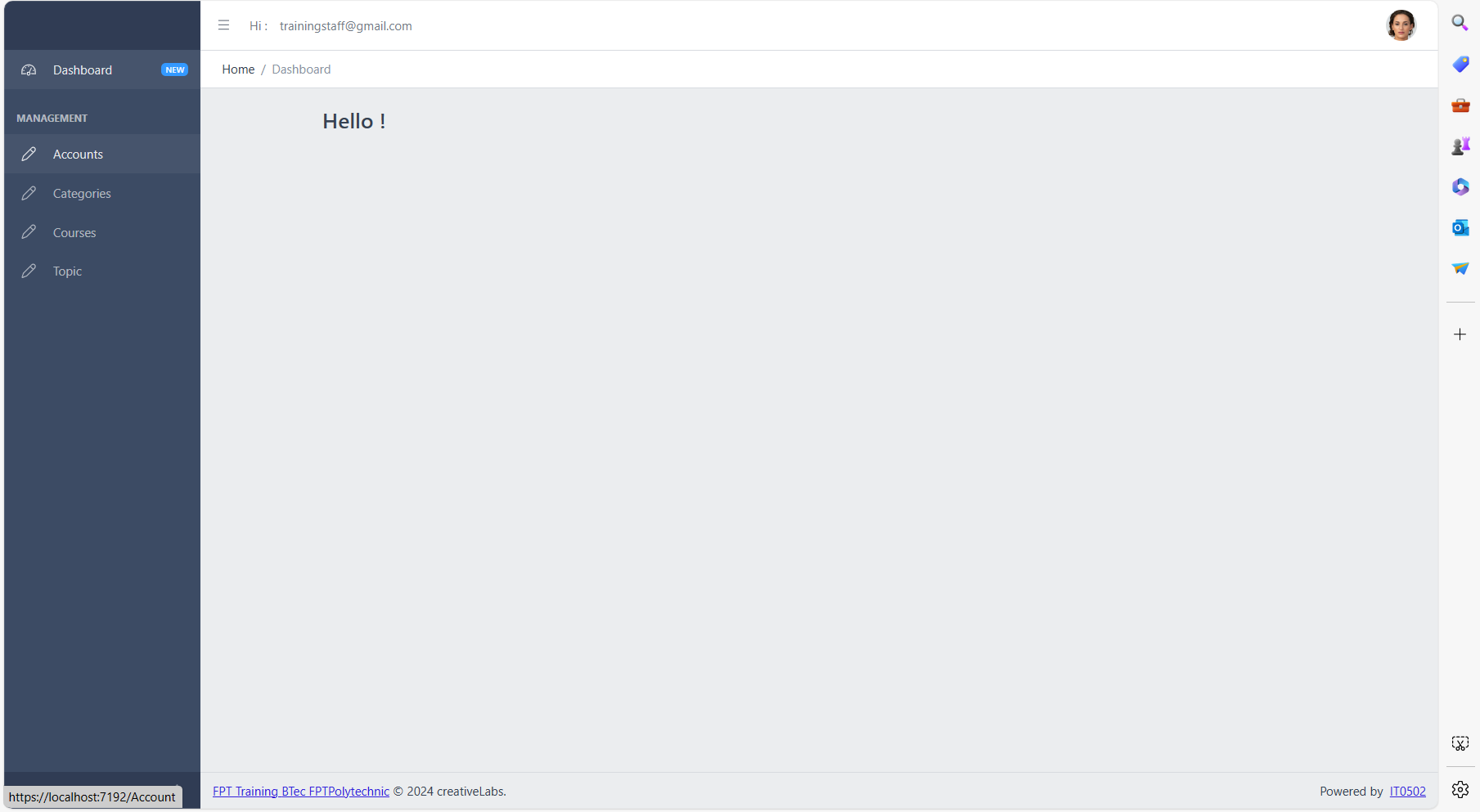


Figure 16 Dashboard Training Sfatt

* + 1. User Category management.

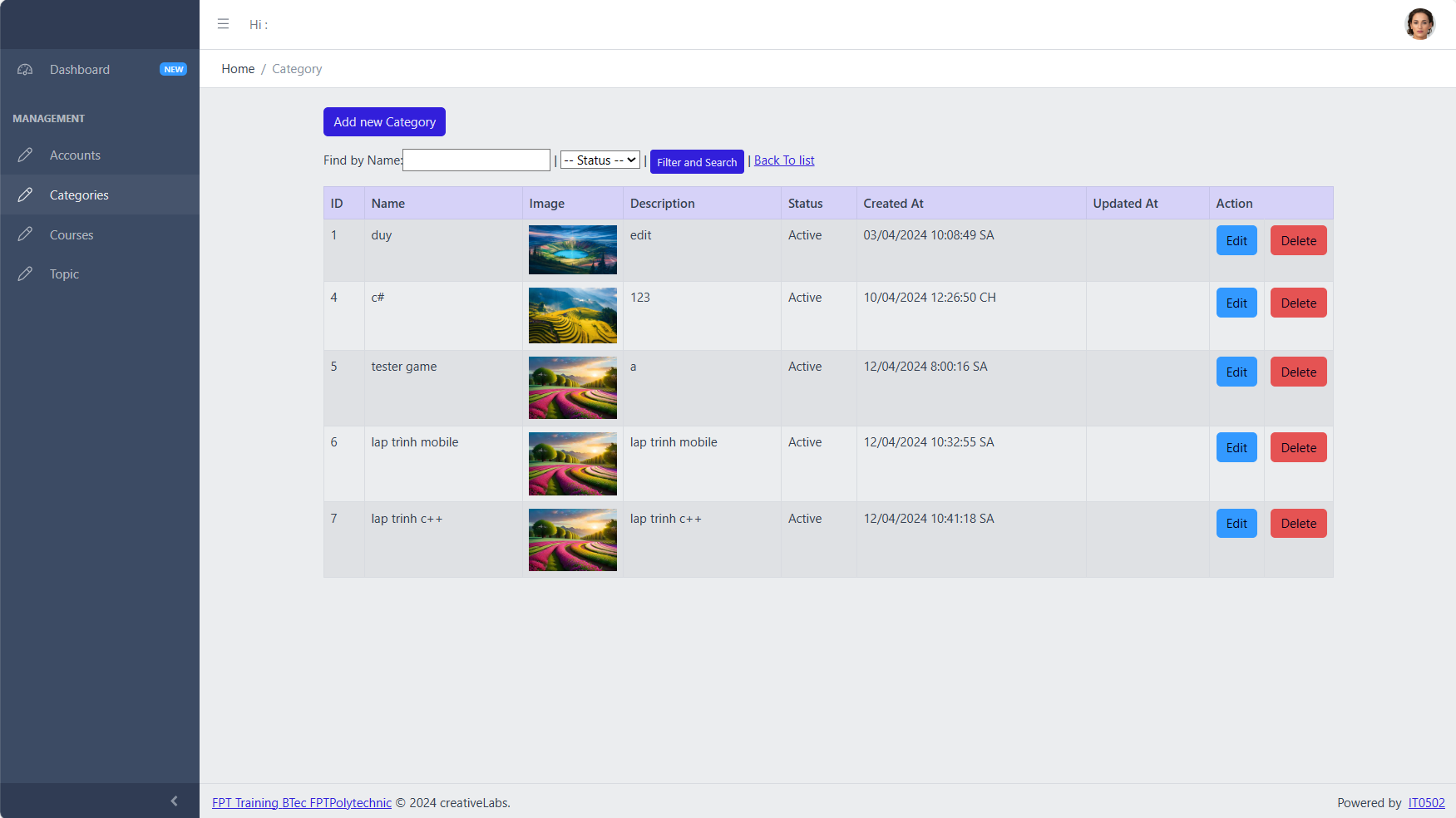


Figure 17 Index Category

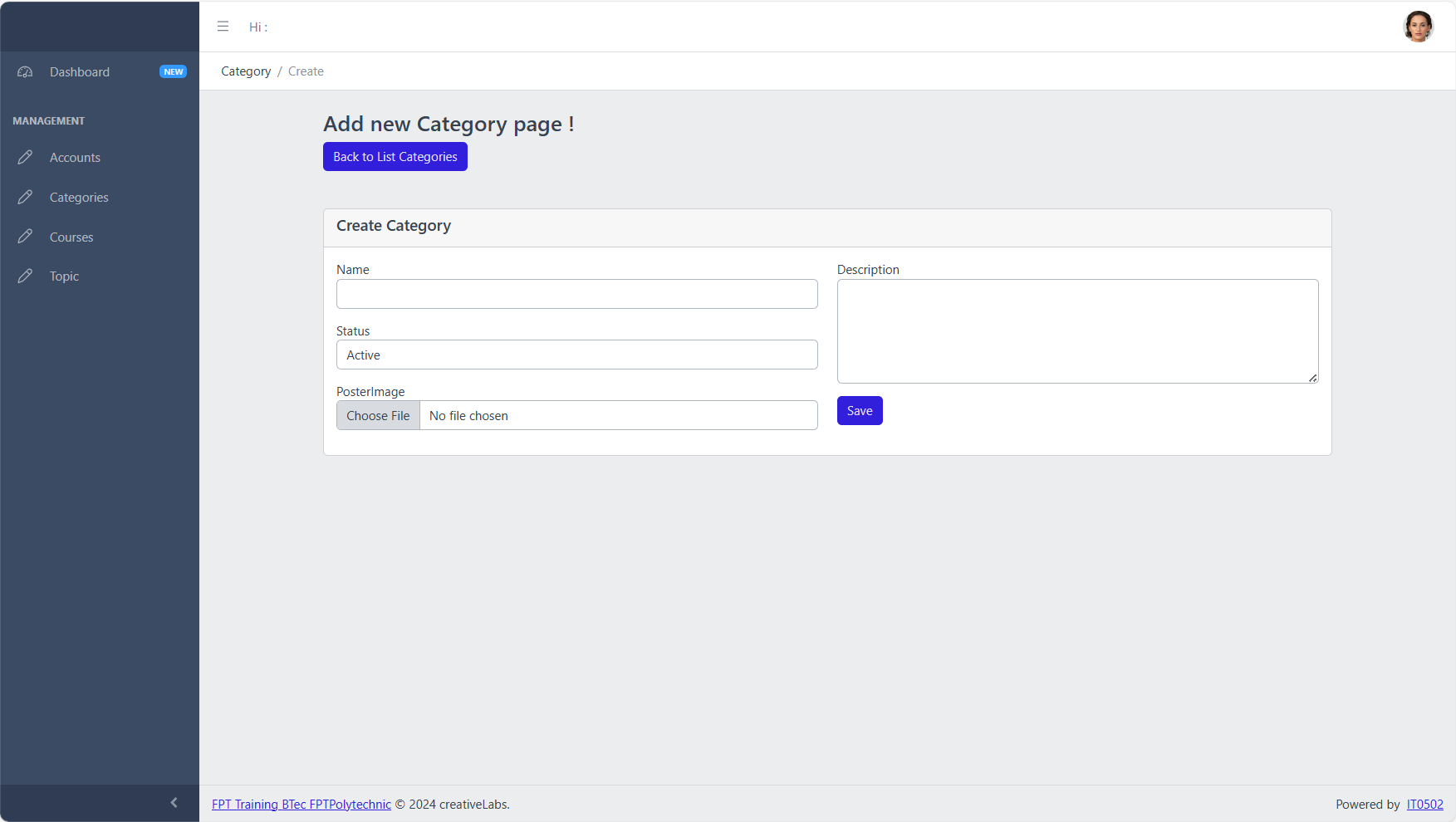


Figure 18 Add Category

* + 1. User Course management.

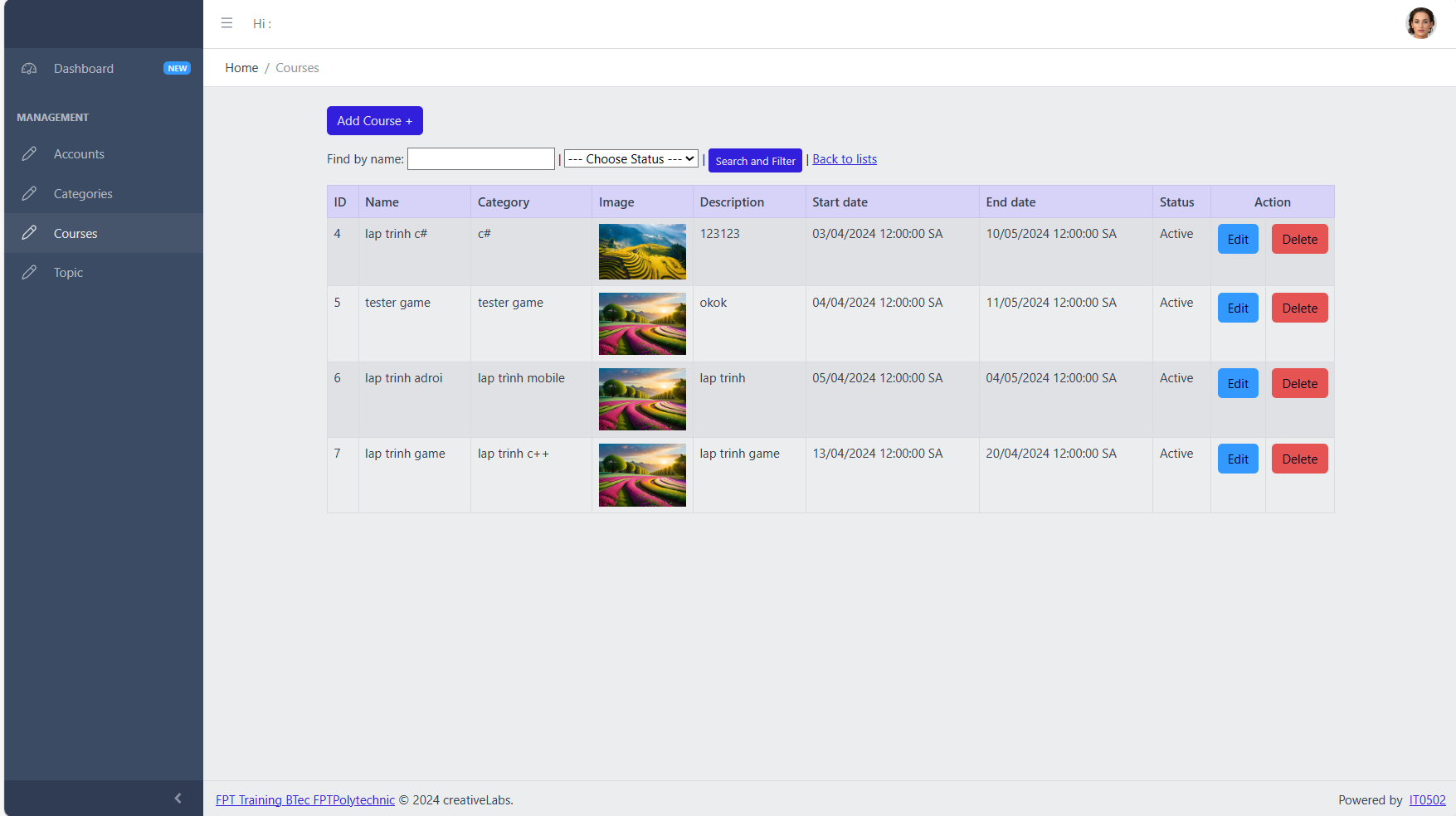


Figure 19 Index Course

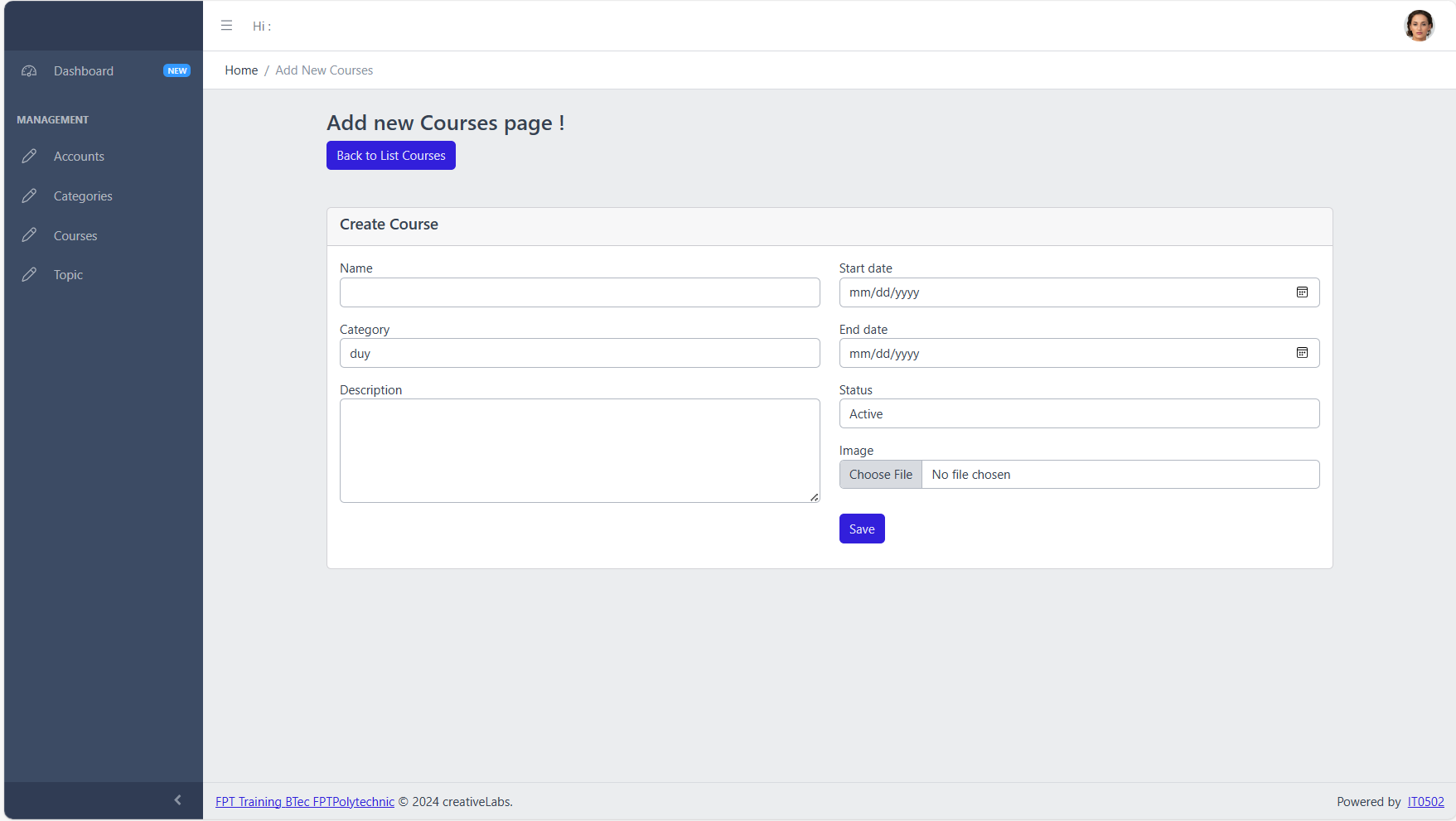


Figure 20 Add Course

* + 1. User Topic management.

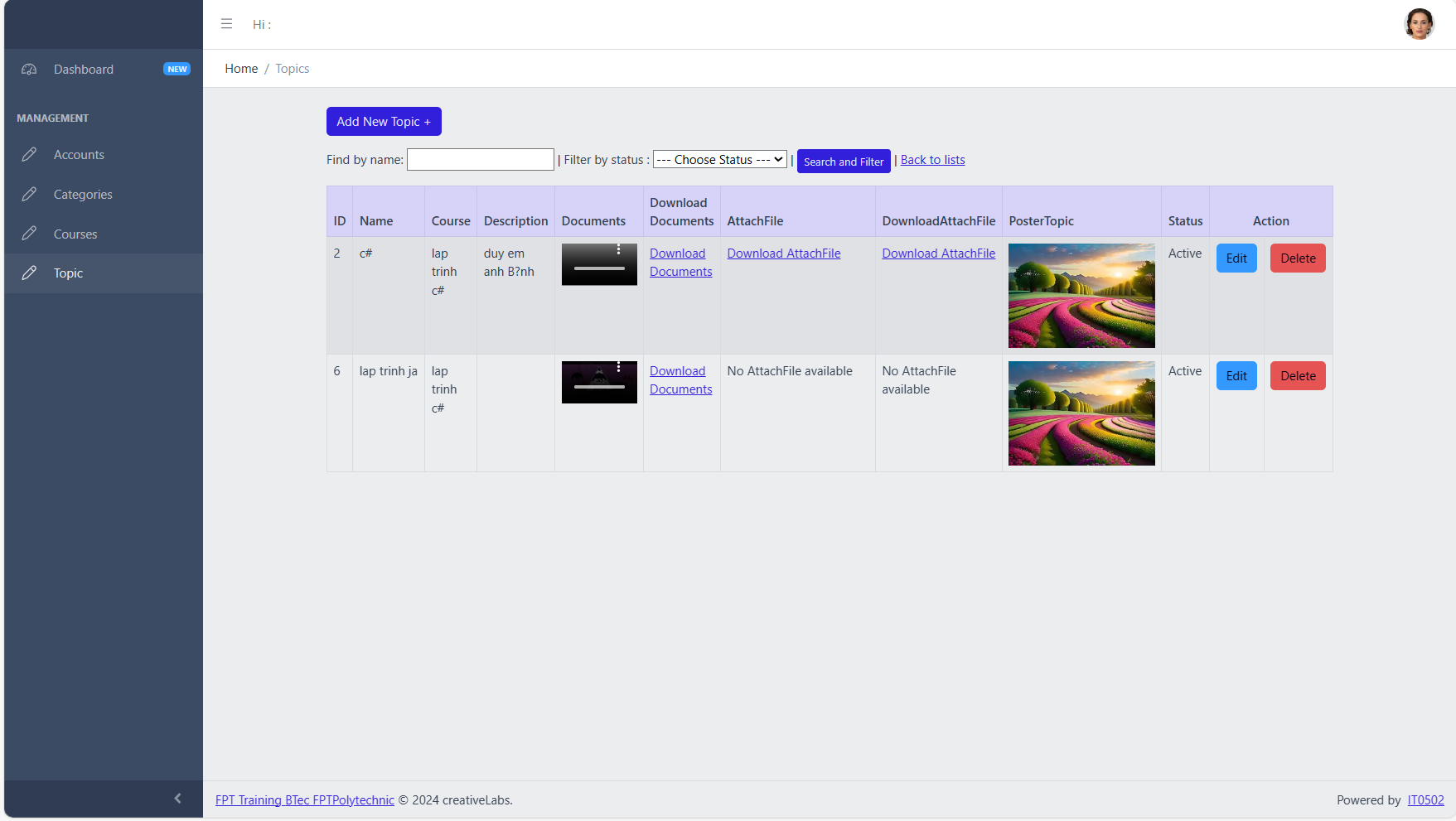


Figure 21 Index Topic

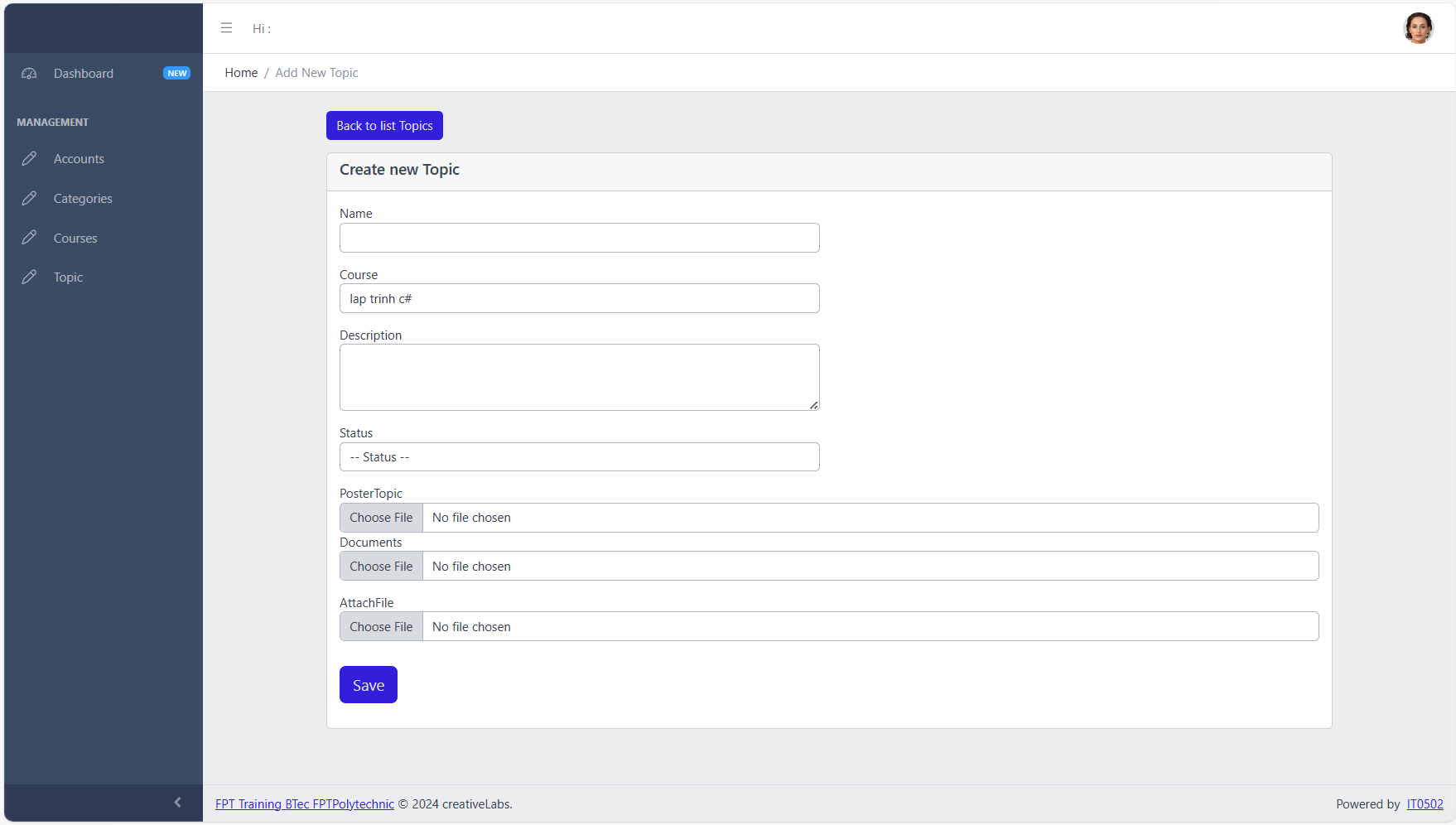


Figure 22 Add Topic

* 1. Code.
     1. Category.

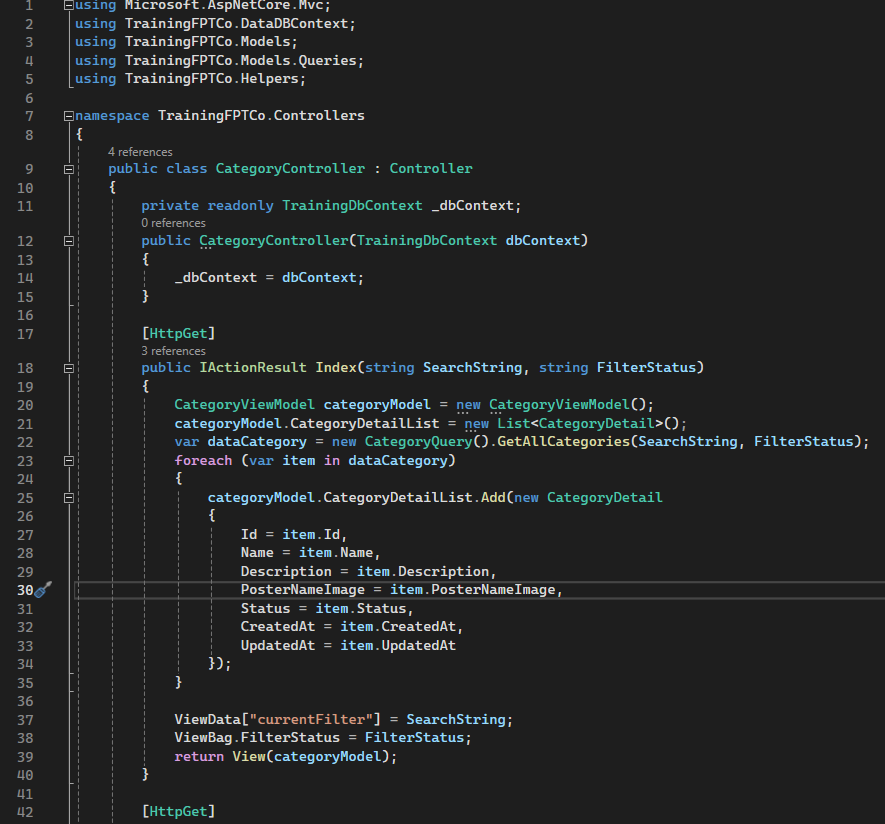


Figure 23 Category Controller

"The CategoryController class serves as a crucial component in the software application's architecture, responsible for overseeing the management and control of various operations pertaining to categories. These operations encompass a broad spectrum of tasks, including the creation, modification, and removal of categories within the application's ecosystem.

By encapsulating these functionalities within the CategoryController, the class provides a centralized point of access and coordination for all category-related activities. This architectural design fosters modularity, scalability, and maintainability, as it segregates the concerns related to category management from other components of the application.

In essence, the CategoryController acts as a guardian of category data integrity and consistency, ensuring that interactions with categories adhere to predefined rules and constraints. Through its cohesive orchestration of category-related actions, the controller plays a pivotal role in shaping the overall user experience and operational efficiency of the application.

Furthermore, the CategoryController serves as a conduit for communication between the user interface and the underlying data persistence layer. It receives input from users or external systems, processes it accordingly, and orchestrates the necessary operations to reflect changes in the category data store.

Overall, the CategoryController embodies a fundamental aspect of the application's functionality, empowering users and administrators alike to manage categories seamlessly and efficiently. Its robust design and functionality contribute significantly to the overall effectiveness and usability of the software application."

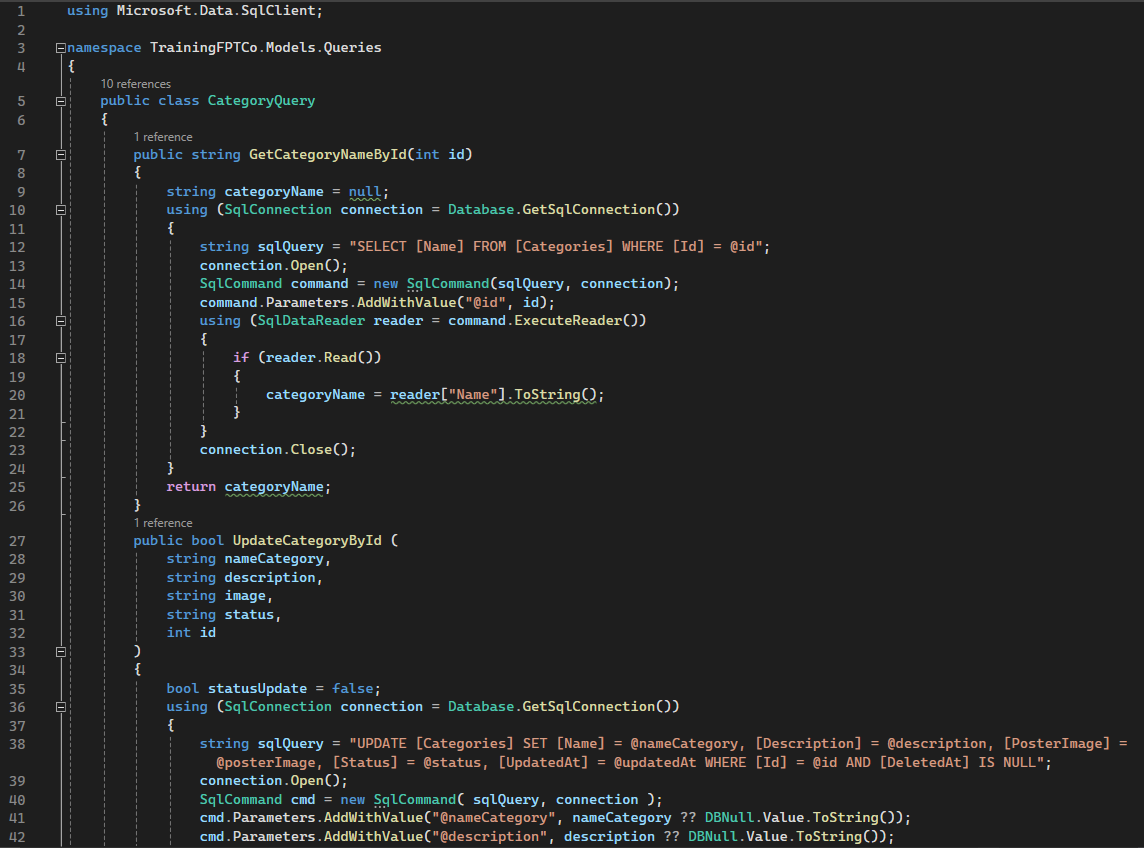


Figure 24 Category Query

The versatile 'CategoryQuery' class serves as a pivotal tool for interrogating and procuring data pertaining to categories. It facilitates an array of operations, including searching for categories, fetching detailed category information, and executing specialized category-oriented inquiries, ensuring seamless management of category-related tasks.

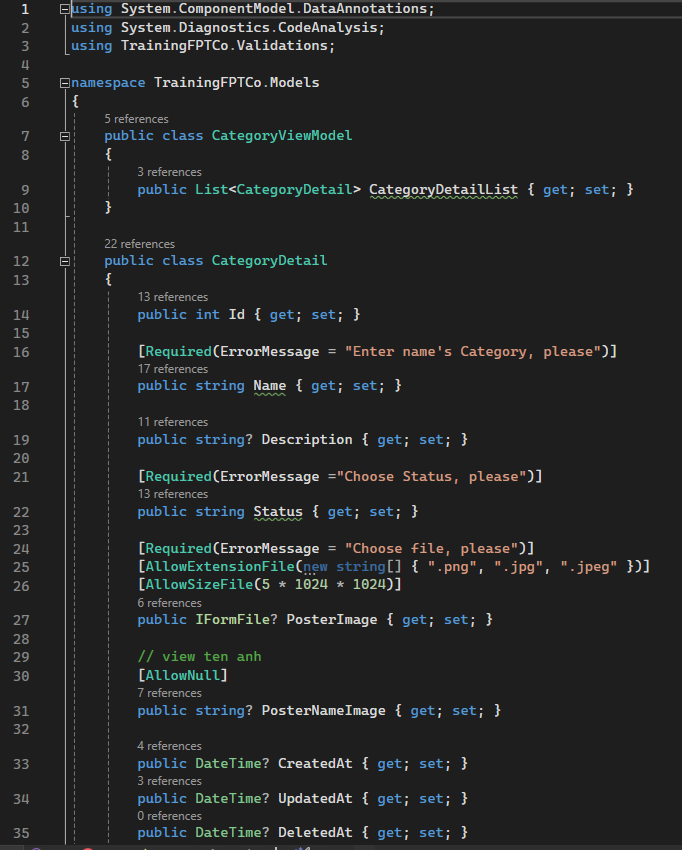


Figure 25 Category View Model

The indispensable 'CategoryViewModel' class plays a pivotal role in orchestrating the data model and business logic essential for category-centric functionalities within the application ecosystem. Acting as a cornerstone, it facilitates the creation and manipulation of a comprehensive dataset, complemented by a suite of meticulously crafted processing methods. These methods synergistically empower the user interface, facilitating seamless interaction with categories, while ensuring a rich and intuitive display of information. With its robust architecture, the 'CategoryViewModel' class encapsulates the intricacies of category management, thereby fostering an immersive and engaging user experience.

* + 1. Course.

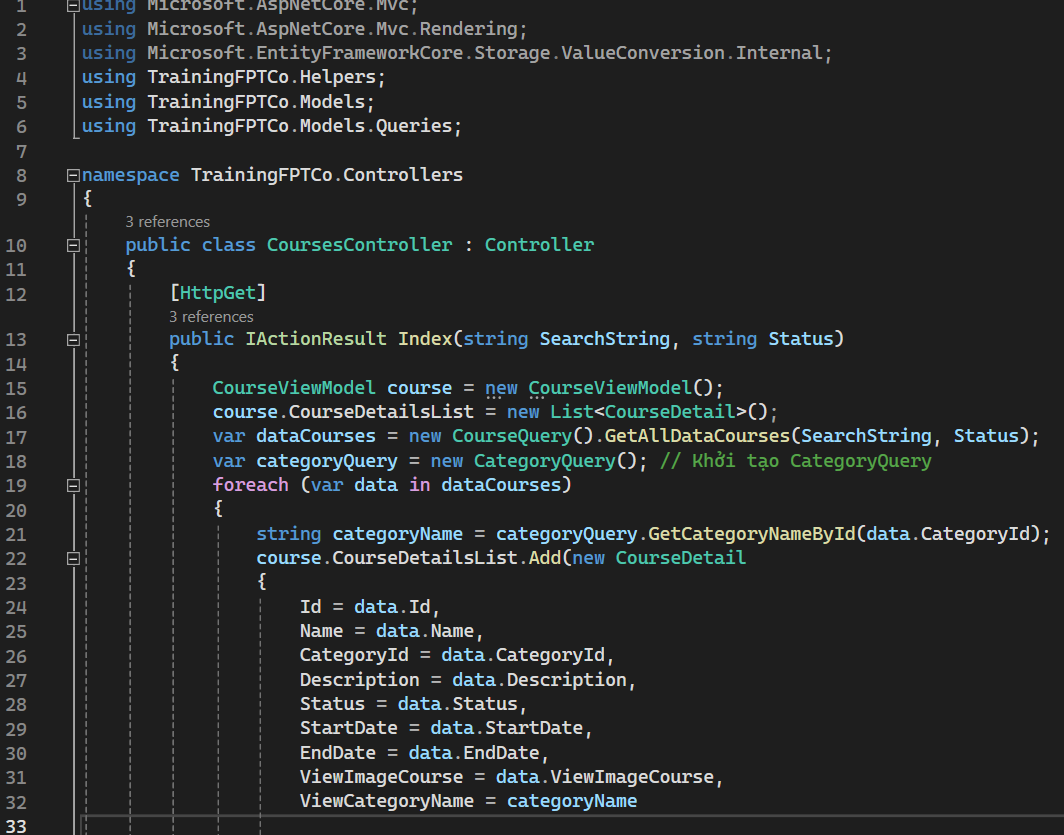


Figure 26 Couse Controller

The pivotal 'CoursesController' class serves as the linchpin for orchestrating and governing the intricate web of functionalities associated with courses within the software ecosystem. It operates as the central hub, meticulously managing the gamut of tasks related to course management, including but not limited to, the retrieval, manipulation, and deletion of course data. With unwavering diligence, the 'CoursesController' class ensures the seamless execution of these operations, navigating through the complexities inherent in course-related interactions with finesse and precision.

Embodying a holistic approach to software design, the 'CoursesController' class not only encapsulates the nuts and bolts of course management but also embodies a commitment to delivering a superlative user experience. By adhering to best practices and industry standards, it fosters a cohesive and intuitive user interface, empowering users to navigate through course-related features effortlessly.

Driven by a relentless pursuit of excellence, the 'CoursesController' class stands as a testament to the software's dedication to facilitating meaningful interactions with course content. With each interaction, it ensures that every action taken aligns seamlessly with the overarching objectives of the application, thereby enriching the user's journey through the digital landscape

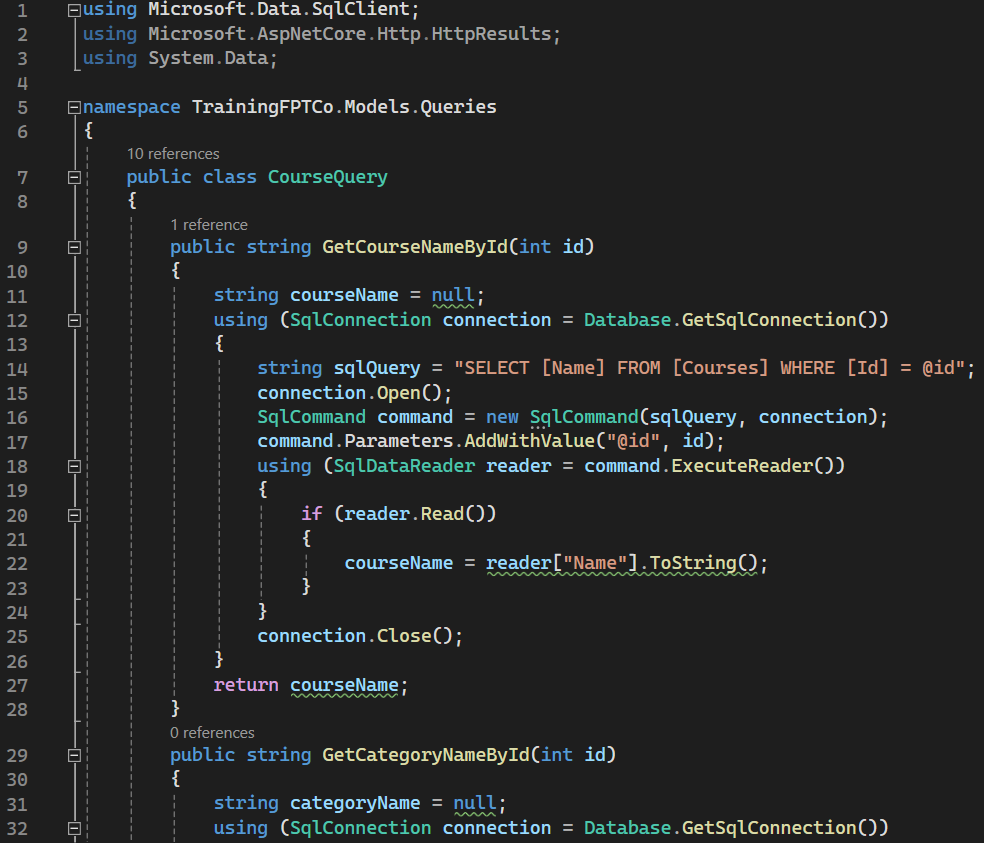


Figure 27 Course Query

The indispensable 'CourseQuery' class stands as a cornerstone in the realm of course management, dedicated to the meticulous retrieval and manipulation of course-related data within the software ecosystem. Serving as a versatile toolset, it adeptly navigates through the intricacies of course management, facilitating a myriad of essential tasks including searching for courses, extracting detailed course information, and executing specialized course-oriented queries with precision and efficiency.

At the heart of the application's functionality, the 'CourseQuery' class embodies a commitment to seamless user experience, ensuring that every interaction with course-related features is met with responsiveness and accuracy. By harnessing the power of robust querying mechanisms, it empowers users to effortlessly explore and engage with the diverse array of courses available within the system.

With its unwavering dedication to excellence, the 'CourseQuery' class encapsulates the essence of efficient data retrieval and manipulation, embodying best practices and industry standards to deliver an unparalleled user experience. Through its comprehensive suite of functionalities, it not only simplifies course management but also enriches the user's journey by providing timely and relevant access to course information, thus elevating the overall software experience to new heights.

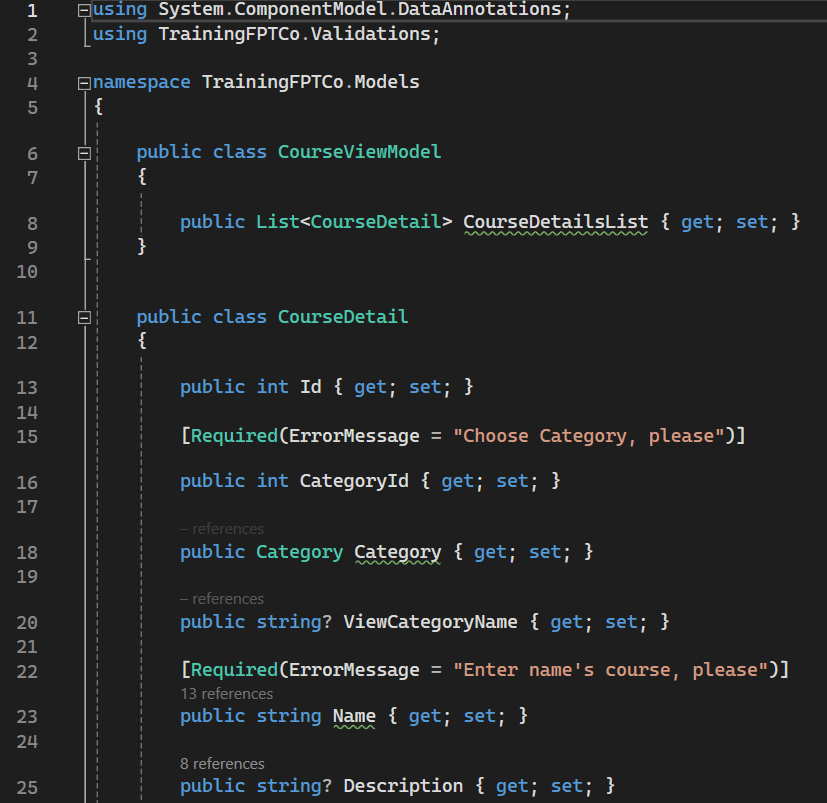


Figure 28 Course View Model

The pivotal 'CourseViewModel' class serves as the backbone of course-related functionalities within the application, embodying a robust combination of data modeling and business logic essential for seamless course management. At its core, it functions as a conduit, meticulously crafting and orchestrating a comprehensive dataset coupled with a suite of meticulously designed processing methods. These methods are strategically engineered to facilitate the seamless display of course information and empower users to interact with courses effortlessly within the user interface.

By encapsulating the intricacies of course management, the 'CourseViewModel' class ensures that every facet of the user's interaction with course-related features is meticulously orchestrated with precision and efficiency. It leverages sophisticated data modeling techniques to curate a rich and intuitive representation of course information, thereby enriching the user experience and fostering meaningful engagement with course content.

Driven by a commitment to excellence, the 'CourseViewModel' class continuously evolves to meet the dynamic demands of course management within the application landscape. Through its versatile array of processing methods and meticulously crafted data model, it empowers users to navigate through course-related functionalities with ease, ensuring a seamless and immersive experience at every turn.

In essence, the 'CourseViewModel' class stands as a testament to the application's dedication to delivering unparalleled user experience, seamlessly bridging the gap between data representation and user interaction to create a cohesive and engaging environment for exploring and engaging with course content.

* + 1. Topic.

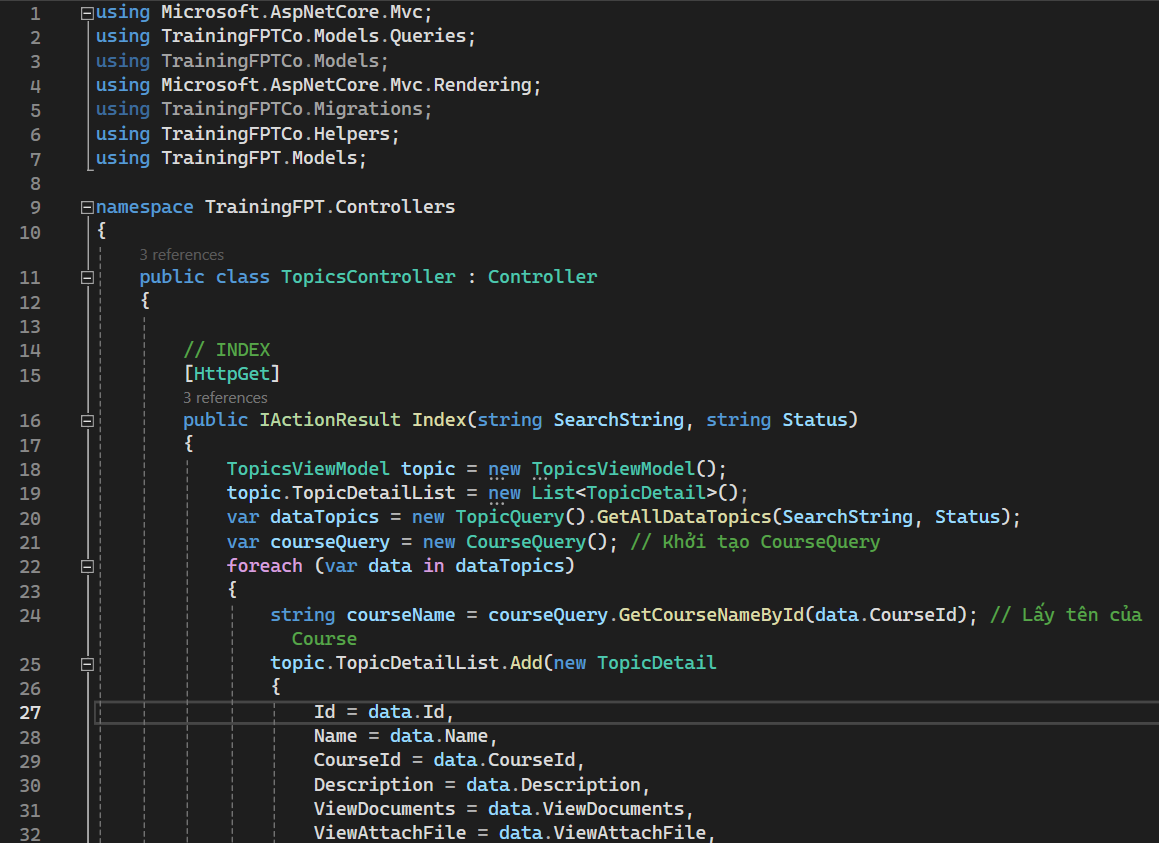


Figure 29 Topic Controller

The pivotal 'TopicController' class assumes a central role in orchestrating and governing the intricacies surrounding topic-related functionalities within software applications. As the steward of topic management, it shoulders the responsibility of creating, editing, and deleting topics with meticulous care and precision.

At its core, the 'TopicController' class serves as a linchpin, ensuring that every interaction with topics within the application landscape is met with appropriate actions and responses. By leveraging its robust set of methods and functionalities, it facilitates seamless navigation through the lifecycle of topics, from inception to modification and eventual removal.

Driven by a commitment to excellence, the 'TopicController' class embodies best practices and industry standards to deliver a superlative user experience. Through its adept management of topic-related tasks, it fosters an environment where users can engage with topics effortlessly, thereby enriching their journey through the application.

In essence, the 'TopicController' class stands as a testament to the application's dedication to effective topic management, ensuring that each interaction with topics is met with responsiveness and efficacy, ultimately contributing to a cohesive and enriching user experience.

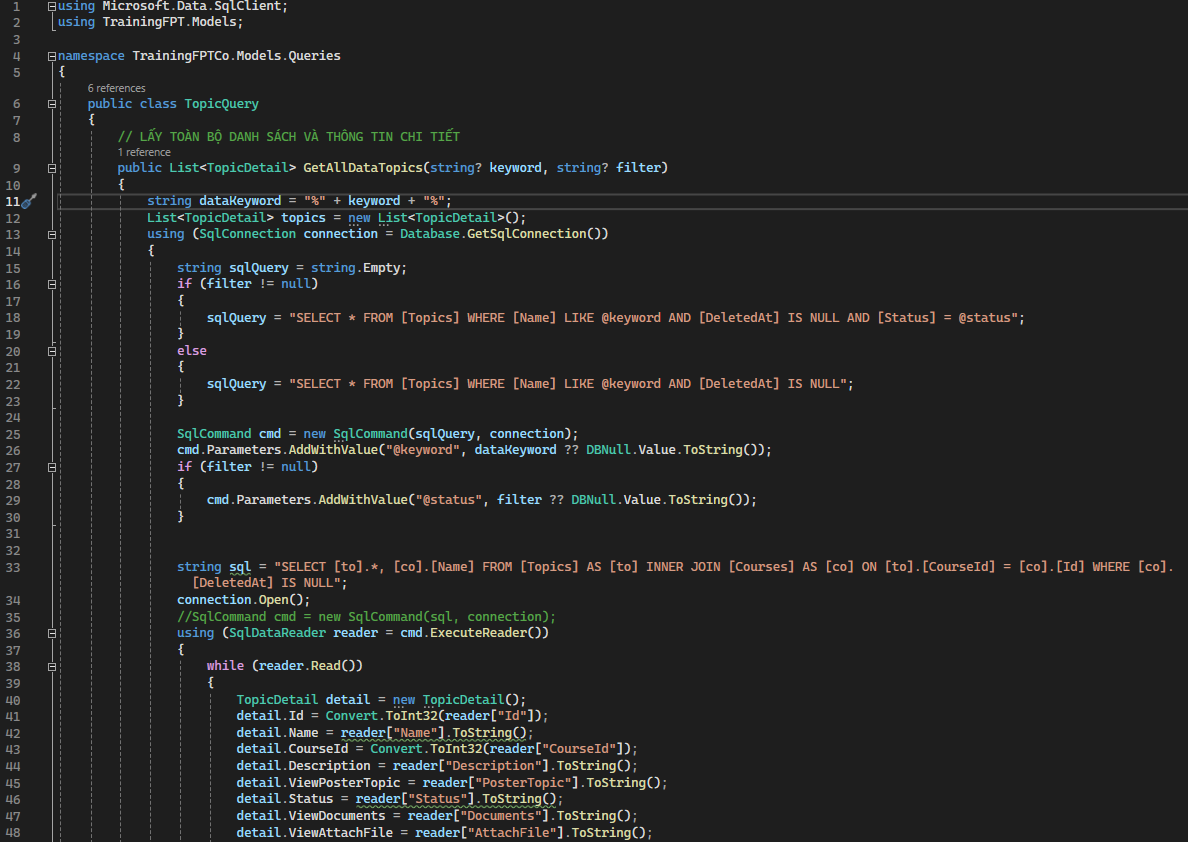


Figure 30 Topic Query

The indispensable 'TopicQuery' class serves as a foundational component in the realm of topic management within software applications. Designed to facilitate seamless access to topic-related information, it acts as a versatile toolset for querying and retrieving data pertinent to topics. Its multifaceted capabilities encompass a spectrum of essential tasks, including searching for topics, extracting detailed topic information, and executing specialized queries tailored to the intricacies of topic management.

At the heart of its functionality, the 'TopicQuery' class embodies a commitment to efficacy and precision, ensuring that every interaction with topics is met with responsiveness and accuracy. By harnessing advanced querying mechanisms, it empowers users to effortlessly explore and engage with topics, fostering a cohesive and intuitive user experience.

With its robust architecture and comprehensive feature set, the 'TopicQuery' class stands as a testament to the application's dedication to effective topic management. By encapsulating best practices and industry standards, it streamlines the process of accessing topic-related information, ultimately enriching the user's journey through the application's landscape.

In essence, the 'TopicQuery' class serves as a cornerstone in the quest for efficient topic management, empowering users to navigate through topics with ease and confidence, while ensuring that each interaction is met with timely and relevant insights.

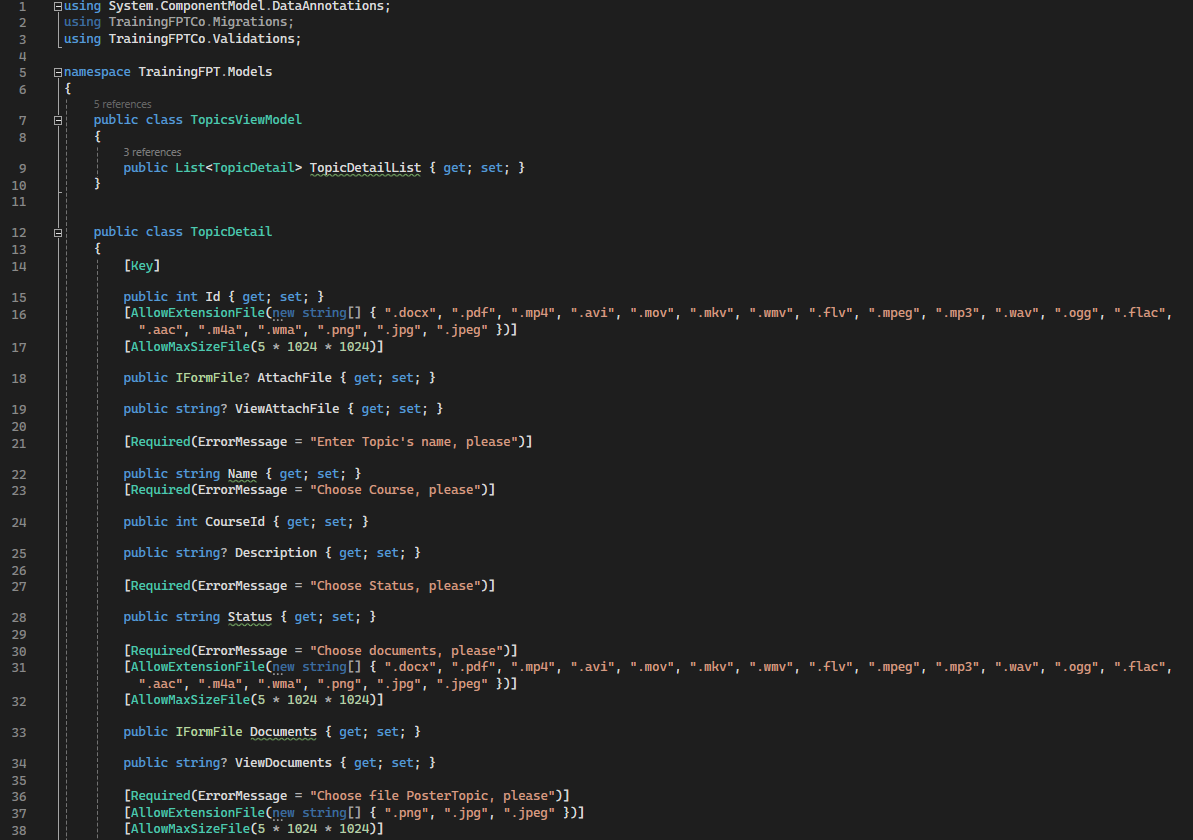


Figure 31 Topic View Model

The pivotal 'TopicViewModel' class serves as the backbone of theme-related functionalities within the application, embodying a robust combination of data modeling and business logic essential for seamless theme management. At its core, it functions as a conduit, meticulously crafting and orchestrating a comprehensive dataset coupled with a suite of meticulously designed processing methods. These methods are strategically engineered to facilitate the seamless display of theme information and empower users to interact with themes effortlessly within the user interface.

By encapsulating the intricacies of theme management, the 'TopicViewModel' class ensures that every facet of the user's interaction with theme-related features is meticulously orchestrated with precision and efficiency. It leverages sophisticated data modeling techniques to curate a rich and intuitive representation of theme information, thereby enriching the user experience and fostering meaningful engagement with theme content.

Driven by a commitment to excellence, the 'TopicViewModel' class continuously evolves to meet the dynamic demands of theme management within the application landscape. Through its versatile array of processing methods and meticulously crafted data model, it empowers users to navigate through theme-related functionalities with ease, ensuring a seamless and immersive experience at every turn.

In essence, the 'TopicViewModel' class stands as a testament to the application's dedication to delivering unparalleled user experience, seamlessly bridging the gap between data representation and user interaction to create a cohesive and engaging environment for exploring and engaging with theme content.

P6 Review the performance of your business application against the Problem Definition Statement and initial requirements.

1. Function requirements.
2. Test case
3. Test plan.
4. Viết ưu nhược điểm mình làm được trong bài code này và đưa ra những cái gì mình chưa làm được
5. Conclusion.
6. Refer.