**Server-side and Client-side programming You are to research and retrieve information about a range of server-side environments used to create dynamically generated web sites and evaluate them according to the following.**

**1. Compare and contrast the roles of Server-side programming and Client-side programming.**

* **What is their purpose,**
* **What are their functions,**
* **Why do they differ from each other?**

The Purpose of Server-side programming (also known as back-end development) is a development type involving programs running on the server. It generally involves tasks that interact with the server, away from the eyes of users, for example, managing web server data and processing request messages sent by clients (like web browsers), then replying with a HTTP response message indicating the success or failure of the request.

Client-side programming, sometimes known as front-end development, focuses on the visual elements of a page, including interface, functionality, and anything that might affect a user’s experience on the page. This type of development involves programs that run on the user’s device.

The functions of server-side development include:

* Coding dynamic websites
* Developing web applications
* Connecting websites to databases
* Implementing content management systems
* Making sure programs retrieve information properly
* Ensuring systems are safe from hackers
* Restoring and backing up files

The functions of client-side development include:

* Creating website layouts
* Designing user interfaces
* Adding form validation
* Reviewing the performance of websites
* Adding visual design elements like colours and fonts
* Making website features more functional
* Resolving any issues that users encounter on a site

(Indeed, 2025)

**2. Compare and contrast security and permissions of Server-side programming and Client-side programming. How do each work and why are they different?**

Client-side programming’s code is generally less secure than server-sides code. This is due to users being able to view, and to an extent modify, the code, leading to potential exploits of vulnerabilities. Thus, the security of client sides code relies on features like input validation, and other browser security features.

Server-Side security is inherently more secure than Client-side due to Server-Sides codes operating in a controlled environment. Security methods implemented in Server-side includes user authentication, access authorization, input sanitization, encryption, and protection against vulnerabilities and attacks like SQL Injection.   
  
Where the two differ is largely rooted in the fact that client-side code runs on the user’s browser, whereas the server-side runs on a protected environment.

**3. Outline the following features of server side programming - Framework, Language, Security mechanisms, for the following Server Side Frameworks. Django, Asp.net, Laravel.**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Django | Asp.net core | Laravel |
| Framework | high-level Python web framework | open-source modular web-application framework | PHP web application framework |
| Language | Python | C# | PHP |
| Security Mechanics | Input sanitization, XSS protection, CSRF Protection, SQLI protection, Clickjack protection | Authentication, Authorization, Enforced HTTPS | CSRF Protection, HTTP Basic Authentication, strong passwords with hashing, encryption |

**Part 2**

Practical Assessment brief Create an ASP.net core website using Razor Pages, and an API and a Database back end.

**Create the Project**

1. Create a new APS.Net Core Project with Identity.

**Create the Models**

1. Create a new Folder called Models.
2. In there Make 2 new classes Cast, and Movie. Follow the structure in the screenshot.
3. Make all the fields nullable, and the ID as Guids

A screenshot of a computer program

AI-generated content may be incorrect.

**Generate the Database and scaffold the CRUD**

1. Create a Migration, and then create the Database
2. Create 2 new folders under Pages folder, and scaffold CRUD for both the classes into them.
3. Find the Database and move it into your project folder. Reconnect it again in SQL Server Management Studio (SSMS)

A screenshot of a computer

AI-generated content may be incorrect.

**Project Index Page**

1. The Project Index Page is the one on the right in red (it can be confusing)
2. Create links on the Project Index Page to go to the Index pages of the Cast and the Movies. Make a nice title etc as well.

A close up of a sign

AI-generated content may be incorrect.

**Add data to your Tables**

1. Add 3 movies to your Movies table, (Copy the data from the https://www.themoviedb.org )
2. Add some Cast members for your Movies in the Cast table.
3. Make the Movie field in the Cast table show the Name of the movie, as shown and NOT the Guid. Display the name of the Movie on the Create and Edit pages as well.

**Make the Cast appear in the Details page of the movie**

13. Now that you have sample movie, and sample cast, in the Movie Details backend inject in the Cast where they match the Movie Id.

14. Show the Cast members on the Details Page.

**Using an API**

15. Using the NuGet Package Manager find TheMovieDbWrapper and install it in your project. This gives us tools to easily use the API. Go to https://github.com/nCubed/TheMovieDbWrapper and read how to use the system and install it. (I’ll give you this, it took me a while) The Movie database is a typical learning environment to work with API’s

16. Go to https://www.themoviedb.org/ and create an account. ***(note: tutor instructed me to use open movie database instead)***

17. Go to Settings / API and copy the API Read Access Token (v4 auth)

18 In your Program.cs file, (or Startup.cs for Pre-Core 6) register the project

19. Add it after var app = builder.Build();

**Now you need to work out how to extract the movies and the data you need.**

Using your API in the Details page of the Movies that you added to your Database. 20. Add in the API code to show the image where it matches the Title of the movie.

21. Include the Cast and their screen name for that movie.

A screenshot of a computer

AI-generated content may be incorrect.

22. On the Project Index page, add in the Top Rated Movies from the API Use Bootstrap Cards to format them

According to my research, open movie database doesn’t support a list of popular movies. A screenshot of a computer

AI-generated content may be incorrect.

**References:**

Indeed. (2025).Client-Side vs. Server-Side: What's the Difference?

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