

# StackQ AI

Submitted By: Guide:

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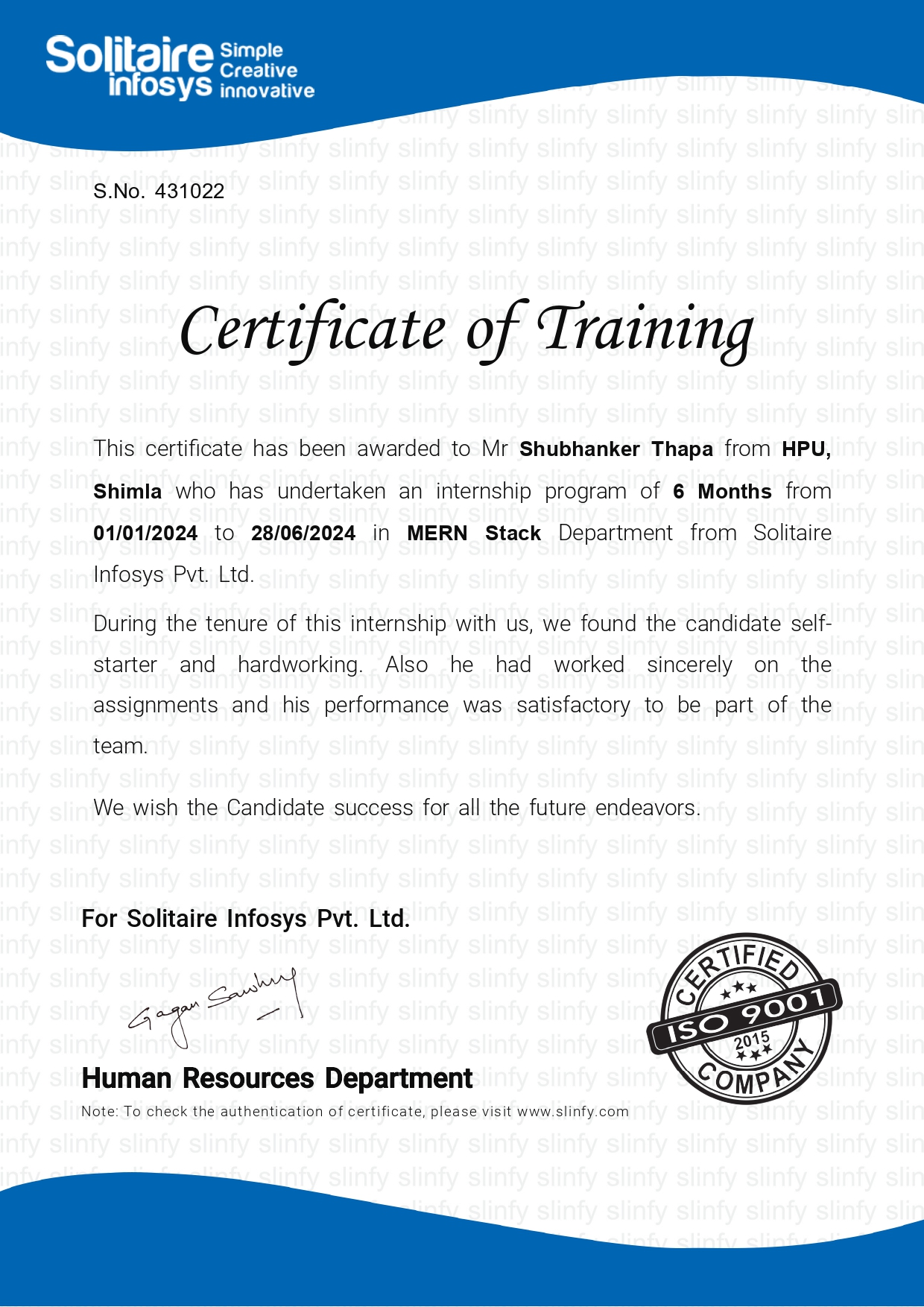
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Table of Contents

# Certificate from Solitaire Infosys



# Declaration from the Student

I hereby declare that the above information about the duration of the training and the certificate provided by the company on the completion of the training are correct and not falsified on the basis of any gains.

# Acknowledgement

I acknowledge Solitaire Infosys 6 months training has allowed me and guided me to be able to develop this project within the required time frame.

# Abstract

# Introduction about Solitaire Infosys

Solitaire Infosystems Pvt. Ltd. is an acclaimed IT service provider contributing its part in the development of many businesses around the globe. We socialize with our clients to get a superior cognizance of their business and requirements and help them in fabricating websites and applications for their business. Founded in 2011 by a dynamic duo with the same aim and zeal, we have come a long way in satisfying our clients.  
We are serving our clients with the world-class services for more than seven years now. The clients are delivered with the best IT solutions after we have developed a great understanding of their business and requirements. Our team works on the client projects like its own and that is the reason why we hold the edge in the league.  
With every project that we deliver, we deliver our respect, creativity, quality, transparency, and teamwork to our clients. We have the experience, expertise, and capabilities to enable organizations to accelerate their service processes in every possible way. We are known for our excellent customer satisfaction, cost-effectiveness, and innovative skills that are unparalleled.

# Features of Operating System

Windows Operating System (OS) is a graphical user interface (GUI) based operating system developed by Microsoft Corporation. It is designed to provide users with a user-friendly interface to interact with their computers. The first version of the Windows Operating System was introduced in 1985, and since then, it has undergone many updates and upgrades. Windows Operating System is compatible with a wide range of hardware and software applications, making it a popular choice for both personal and business computing. It has a built-in security system to protect the computer from malware and viruses and provides a comprehensive file management system that makes it easy for users to organize and access their files. Windows Operating System also allows users to run multiple applications simultaneously, making it easy to work on multiple tasks at the same time.

Features of Windows Operating System

Here are some features of the Windows Operating System:

1. **Control Panel:** The control Panel is a centralized location within Windows where users can manage various system settings, including security and privacy, display, hardware and sound, and programs. It provides users with access to a range of tools and settings, making it easy to customize the Windows experience.
2. **Internet Browser:** An Internet Browser is a software application that allows users to access and browse the Internet. Windows provides a built-in internet browser called Microsoft Edge, which includes features such as tabbed browsing, search suggestions, and web notes.
3. **File Explorer:** File Explorer is a file management tool that allows users to browse, open, and manage files and folders on their computers. It provides a user-friendly interface for users to view and manage files and includes features such as search, copy, move, and delete.
4. **Taskbar:** Taskbar is a horizontal bar that appears at the bottom of the Windows desktop. It provides quick access to frequently used applications and displays open windows and programs. The taskbar also includes system icons such as volume, network, and battery status.
5. **Microsoft Paint:** Microsoft Paint is a graphics editing software that allows users to create and edit images. It provides users with basic drawing tools such as a pencil, brush, and eraser, and allows users to add shapes, text, and images to their designs.
6. **Start Menu:** Start Menu is a menu that appears when users click the Start button on the Windows taskbar. It provides access to frequently used applications, settings, and files, and includes a search bar that allows users to quickly find files and applications.
7. **Task Manager:** Task Manager is a system tool that allows users to view and manage running applications and processes. It provides users with information about CPU and memory usage and allows users to end unresponsive programs and processes.
8. **Disk Cleanup:** Disk Cleanup is a system tool that allows users to free up space on their hard drives by removing unnecessary files and data. It scans the system for temporary files, cache, and other unnecessary data, and provides users with the option to remove them.
9. **Cortana:** Cortana is a virtual assistant software that allows users to interact with their computers using voice commands. It provides users with access to information, and reminders, and can perform tasks such as sending emails and setting reminders.

# Features of Backend tools

### Node JS:

### Single-Threaded but Highly Scalable

Node.js operates on a single-threaded event loop. Unlike traditional servers that spawn multiple threads to handle concurrent connections, Node.js uses a single thread to handle all requests. This approach minimizes overhead and improves performance.

### Scalability

The event loop allows Node.js to handle thousands of connections simultaneously with minimal resource consumption. The single-threaded model, combined with asynchronous I/O operations, enables developers to build highly scalable applications.

### Fast Performance

Node.js is built on the V8 JavaScript engine, which is known for its high performance. V8 compiles JavaScript directly to machine code, making execution extremely fast.

### Real-Time Applications

The speed of Node.js is particularly beneficial for real-time applications such as chat applications, gaming servers, and collaboration tools. Its ability to handle a high volume of short-lived connections makes it ideal for these use cases.

### Rich Ecosystem and NPM

Node.js has a rich ecosystem of modules and libraries available through the Node Package Manager (NPM). With over a million packages, NPM provides solutions for almost every conceivable problem, significantly speeding up the development process.

### Community Support

The active and vibrant community contributes to a constantly growing collection of modules, ensuring that developers have access to the latest tools and best practices.

### Cross-Platform Compatibility

Node.js is cross-platform, meaning it can run on various operating systems such as Windows, macOS, and Linux. This versatility allows developers to write code once and run it anywhere, reducing the complexity of deploying applications across different environments.

### Microservices and APIs

Node.js is well-suited for developing microservices and APIs due to its lightweight and efficient nature. Microservices architectures benefit from Node.js’s ability to handle many small services that communicate with each other seamlessly.

### RESTful APIs

Creating RESTful APIs with Node.js is straightforward, thanks to frameworks like Express.js. These APIs can serve as the backbone of modern web applications, facilitating communication between various services.

### Real-Time Communication

Node.js excels in real-time communication, making it a preferred choice for applications requiring live updates. Technologies like WebSockets are inherently supported, allowing for two-way communication between the server and clients.

### Use Cases

Real-time analytics, online gaming, and collaborative tools are prime examples of applications that leverage Node.js for instant data exchange.

### JSON Support

Node.js handles JSON with ease, both in its native modules and in the ecosystem. Since JSON is the standard format for data exchange in web applications, this feature simplifies the development of APIs and interaction with databases.

### Strong Corporate Backing

Node.js enjoys strong corporate backing from companies like Joyent (its original creator), IBM, Microsoft, and others. This support ensures continuous development, improvement, and long-term stability of the platform.

### Flask