# **Cloud Application Development**

# **Assignment 1**

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1. Application Idea **:**

**Private Web Browser**

A web browser is a browser that runs on a remote server, rather than on a local device, and allows users to access the internet through a web-based interface. This type of browser allows users to access the internet from any device with a web connection, without the need to install or update software. Additionally, a cloud web browser can provide additional features such as enhanced security, remote access, and data syncing across devices.

1. Use of cloud in this application **:**

Cloud computing can also be used in web browsers in a few different ways:

* Scalability: Cloud services allow web applications to easily scale up or down as needed, without the need for significant investments in hardware and infrastructure. This means that web applications can handle increased traffic and usage without interruption.
* Cost-effective: Cloud services provide a pay-as-you-go model, which means that web applications only pay for the resources they use, reducing the costs associated with maintaining and upgrading hardware and infrastructure.
* High availability: Cloud services provide web applications with high availability and redundancy, ensuring that they are always available to users, even in the event of a failure or outage.
* Global access: Cloud services allow web applications to be accessed from anywhere in the world, making them more accessible to users.
* Security: Cloud providers offer built-in security features and compliance with regulations, which can be difficult and expensive for web applications to implement on their own.
* Flexibility: Cloud services provide web applications with a high level of flexibility, allowing them to easily adapt to changing business needs and requirements.
* Data Backup and Recovery: Cloud services like AWS, Azure, and GCP offer automated backup and recovery options to ensure that data is secure, even in the event of a disaster.
* Cloud-based browser test: Some companies use cloud-based services to test their web application's compatibility with different web browsers, operating systems, and devices to ensure that their web application is accessible to the broadest possible audience.

1. Literature about the application :

* Daubs, Michael. (2019). Web Browsers.
* Market Research on Web Browsers. (2010). Sagar A. Agrawal
* STANDALONE APPLICATION FOR HULL VOLUME CALCULATION BASED ON SIMPSON’S RULE USING PYQT5. Alexandru PINTILIE, Paul BURLACU,Elena-Grațiela ROBE-VOINEA,Georgiana-Cătălina CRISTEA

1. Working of web browser application **:**

A cloud-based web browser would work differently than a traditional desktop web browser that runs on a user's local machine.

In a cloud-based web browser, the user would access the browser through a web interface, rather than by installing software on their local machine. The browser would run on a remote server and the user would interact with it through their web browser.

To create a cloud-based web browser using Python and QtPy, I would need to create a web server that serves the browser interface to the user and a web application that runs the browser on the server. The web application would use the QtWebEngine module from the PyQt5 library to create the browser, and the web server would handle the communication between the user and the browser application.

For example, I could use a web framework such as Flask or Django to create the web server and handle the HTTP requests and responses. The web application would handle the user's interactions with the browser, such as navigating to different websites, and the web server would handle the communication between the web application and the user's web browser.

I could also use a cloud platforms service like AWS Lambda or Google Cloud Functions to host the web application and web server so that the browser runs on a remote server and can be accessed by the user from anywhere with an internet connection.

The overall process of creating a cloud-based web browser using Python and QtPy would involve creating a web server and web application, using the QtWebEngine module from the PyQt5 library to create the browser, and hosting the web server and web application on a remote server.

1. Why the cloud is necessary for this :

A cloud-based web browser relies on the resources and infrastructure of a cloud environment to function. It runs on a remote server rather than on a user's local machine, so it requires an internet connection to access the cloud server. Without a cloud environment, a cloud-based web browser would not have the necessary resources or infrastructure to run. The browser would not be able to access the remote server where it is hosted and would not be able to function.

Additionally, a cloud-based web browser typically uses a web-based interface, which means that the user interacts with the browser through a web browser rather than through a traditional desktop application. Without an internet connection, the user would not be able to access the browser's web interface.

1. Flowchart :

