31 March Assignment

June 21, 2023

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[ ]: Q1. What are the key steps involved in building an end-to-end web application,
     ↪from development to
     deployment on the cloud?
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[ ]: Building an end-to-end web application from development to deployment on the
     ↪cloud involves several steps. Here are some key steps:

     1.Design the application as a collection of services.
     2.Decouple the data.
     3.Consider communications between application components.
     4.Model and design for performance and scaling.
     5.Make security systemic within the application.
     6.Choose between IaaS, PaaS, and SaaS.
     7.Scale your application.
     8.Consider application state.
     9.Choose a database for cloud-enabled applications.
     10.Consider multiple geographies.
     11.Create and use REST-based web services.
     12.Implement continuous delivery and integration.
     13.Avoid vendor lock-in.

     These steps can be further broken down into more detailed sub-steps depending
     ↪on the specific requirements of your application.
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[ ]: Q2. Explain the difference between traditional web hosting and cloud hosting.
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[ ]: The main difference between traditional web hosting and cloud hosting is that
     ↪traditional web hosting uses a single server or a group of
     servers located in a single location to host websites. In contrast, cloud
     ↪hosting uses a network of servers in different locations to host
     websites.
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Cloud hosting offers greater scalability and flexibility than traditional
↪hosting. With cloud hosting, you can easily scale up or down
your resources as per your website's needs. In contrast, traditional hosting
↪provides fewer features at a lower price point.

Another difference is data control. With traditional web hosting, you have to
↪share the server with other users, so you have less control
over it. In contrast, with cloud hosting, you have more control over your data.

Both cloud hosting and traditional hosting can be secure, but cloud hosting is
↪generally considered more secure.

Cloud hosting can be more expensive than traditional hosting.
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Q3. How do you choose the right cloud provider for your application deployment,
↪and what factors
should you consider?
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Choosing the right cloud provider for your application deployment can be a
↪daunting task. Here are some factors you should consider when
choosing a cloud deployment model:

1.Your organization's size and needs: If you're a small or medium-sized
↪business, a public cloud may be a good option. If you're a large
  organization with complex needs, a private cloud may be a better choice.
2.Your security and compliance requirements: If you need to meet strict
↪security or compliance requirements, a private cloud may be the
  best option.
3.Your budget: Public clouds are typically the most affordable option.
4.Your existing team's experience and expertise: The key decision to select a
↪cloud service provider is based on your existing team's
  experience and expertise. And it may not be just one cloud. It can be
↪multiple. Most fortune 500 companies use more than one cloud service
    provider. In addition, large corporations use clouds based on their
↪offerings.
5.Support: Choose a cloud service provider who offers 24/7 support.
↪Professional help during the migration and deployment is a must.
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Q4. How do you design and build a responsive user interface for your web
↪application, and what are
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some best practices to follow?
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Designing and building a responsive user interface for your web application is
 ↪an important aspect of web development.
Here are some best practices to follow:

1.Apply design patterns to maximize ease of use for users in their contexts and
 ↪quicken their familiarity.
2.Aim for accessibility with font sizes/styles.
3.Use contrast and background effectively.
4.Consider learning about typographic scales to harmonize body copy and
 ↪headlines.
5.Eliminate friction.
6.Design for thumbs.
7.Take advantage of mobile devices' native hardware.
8.Make layouts fluid/adaptive by default.
9.Don't forget about landscape orientation.
10Use flexible measurements such as percentages and ems instead of fixed pixels.
11.Design for different screen sizes and orientations.
12.Prioritize content and use white space and typography to improve readability.
13.Build flexible layouts with CSS Grid and Flexbox.
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Q5. How do you integrate the machine learning model with the user interface for
 ↪the Algerian Forest Fires
project(which we discussed in class), and what APIs or libraries can you use
 ↪for this purpose?
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There are several ways to integrate machine learning models with user
 ↪interfaces. One way is to use Flask, a Python web framework,
to create a web application that can interact with the machine learning model.
The Flask app can be hosted on Heroku.
Another way is to use TensorFlow JS, which allows running machine learning
 ↪programs entirely client-side in the browser.

As for libraries, you can use Sklearn for pre-processing and model building.
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