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ICTWEB516 Research and apply emerging web technology trends.

Task 1

1.

A chatbot is a computer program based on the advances of machine learning and natural language processing that assists people in completing some tasks. The typical tasks that bots can help with are shopping, finding some information or ordering a service. Bots provide help in Q&A form, providing for a more human-like experience.

:From resource material

2.

Blockchain Technology (also called Distributed Ledger Technology (DLT)) is a potential vehicle to improve government services and foster more transparent government-citizen relations. The distributed tech can work to dramatically optimize business processes through more efficient and secure data sharing.

Blockchain Technology has the potential to disrupt the healthcare industry’s centralized operations, opening the door for optimized business and service delivery. The Distributed Ledger Technology (DLT) is an innovation fertile with the possibility of improved transparency, security, and efficiency.

Blockchain technology provides the ideal engine to power digital identities. While digital identities are emerging as an inevitable part of our connected world, how we secure our online information is coming under intense scrutiny.

Cryptocurrencies provide people across the globe with instant, secure, and frictionless money, and blockchains provide the permanent record storage for their transactions. Prior systems required users to trust a central authority that the monetary supply and payment transfer will not be tampered with. Blockchain technologies obsolete this method of payment transfer by providing a trustless environment so that there is no longer a need to rely on a third-party to ensure your payment transfers, thus creating a Person-to-person(Peer-to-peer) environment.

<https://www.blockchaintechnologies.com/applications/>

3.

improves your workflow inside the Customizer

can schedule the time when certain design customizations go live

send preview links to your colleagues, secure design drafts by locking them

Warn about syntax error before saving

WordPress comes with a state-of-the-art Gallery Widget

4.

Purpose of GII

You can use Gii to quickly generate models, forms, modules, CRUD, and many more.

Functions of different gii generators:

Model Generator − Generates an ActiveRecord class for the specified database table.

CRUD Generator − Generates a controller and views that implement CRUD (Create, Read, Update, Delete) operations for the specified model.

Controller Generator − Generates a new controller class with one or several controller actions and their corresponding views.

Form Generator − Generates a view script file that displays a form to collect input for the specified model class.

Module Generator − Generates the skeleton code needed by an Yii module.

Extension Generator − GenerateS the files needed by a Yii extension.

5.

Factors to be considered for selecting web development application.

1.Requirement Analysis:

The fundamental first step in every app development is requirement analysis. This is the step for defining user expectations for a new app to be built.

Requirement analysis becomes a very important step before developing an application as it conveys the expectation of users from the app. These requirements can be expected or unexpected, obvious or hidden.

It is very important to know the customer’s anticipated goals and requirements; your application development’s success depends on strong analysis and understanding of user objectives.

Q. How can you analyze?

Ask your customer about the problem and what solution they want. Get detailed requirements from them which will make you develop an application with ease. Use surveys or “one to one” sessions with real customers to get the best insights – don’t use the opinions of others in your company as your basis.

2. Design & Usability:

If you fail to crack this, your entire app is a failure. Design plays a vital role, which should be as simple as possible. Any layman should understand what is an application is made for without the help of any documentation. Designs that look simpler and organized are generally more usable. Use a color which is pleasant to your eyes. Color schemes are more important than customers realize. Different colors have the ability to evoke emotional responses, such as calm, happiness, or frustration. Bring in a usability expert!

Design should be of such standard that it’s compatible with Multiple Browsers

6

Integration tests are used to test how various parts of your application interact. They are generally used to test important workflows within our application. Test drivers and test stubs are used to assist in Integration Testing.

Task 2

1.

TypeScript is a strongly typed, object oriented, compiled language. It was designed by Anders Hejlsberg (designer of C#) at Microsoft. TypeScript is both a language and a set of tools. TypeScript is a typed superset of JavaScript compiled to JavaScript. In other words, TypeScript is JavaScript plus some additional features.

2.

Symfony can work with some of the largest open source platforms such as PHPBB, Piwik, and Drupal.

Symfony comprises of a set of PHP components, an Application Framework, a Community and a Philosophy, and all of them work in tandem to help realize a common goal on the web. These are the reasons that make Symfony an advanced framework for web development.

3.

We need to test our web application because:

* To be sure it runs on all platforms
* To be sure it functions well
* To be sure it has good performance
* To be sure its secure to use
* To be sure it can interact well with users.

4.

An assertion is a line of code that evaluates an object (or expression) for expected results. For example, an assertion can check:

* does this value = that value?
* is this object nil?
* does this line of code throw an exception?
* is the user's password greater than 5 characters?

Every test may contain one or more assertions, with no restriction as to how many assertions are allowed. Only when all the assertions are successful will the test pass.

5.

Before you install Ruby on Rails, you should check to make sure that your system has the proper prerequisites installed. These include Ruby and SQLite3.

Open up a command line prompt. On macOS open Terminal.app, on Windows choose "Run" from your Start menu and type 'cmd.exe'. Any commands prefaced with a dollar sign $ should be run in the command line. Verify that you have a current version of Ruby installed.

6.

* Use the rails command to create the basic skeleton of the application.

• Create a database on the MySQL server to hold your data.

• Conﬁgure the application to know where your database is located and the login credentials for it.

• Create Rails Active Records (Models), because they are the business objects you'll be working with in your controllers.

• Generate Migrations that simplify the creating and maintaining of database tables and columns.

• Write Controller Code to put a life in your application.

• Create Views to present your data through User Interface. us start with creating our library application.

7.

Minitest is a testing tool for Ruby that provides a complete suite of testing facilities. It also supports behaviour-driven development, mocking and benchmarking. With the release of Ruby 1.9, it was added to Ruby's standard library, which increased its popularity.

https://semaphoreci.com/community/tutorials/getting-started-with-minitest

8.

Capybara is a library written in the Ruby programming language which makes it easy to simulate how a user interacts with an application. Capybara can talk with many different drivers which execute tests through the same clean and simple interface. You can seamlessly choose between Selenium, Webkit or pure Ruby drivers. Tackle the asynchronous web with Capybara's powerful synchronization features.

Capybara automatically waits for your content to appear on the page, you never have to issue any manual sleeps.

http://www.qatestingtools.com/testing-tool/capybara

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Integration testing is a level of software testing where individual units are combined and tested as a group. The purpose of this level of testing is to expose faults in the interaction between integrated units. Integration Testing is the second level of testing performed after Unit Testing and before System Testing.

http://softwaretestingfundamentals.com/integration-testing/

10.

1. Creating usermailer

rails generate mailer UserMailer

1. Email action

class UserMailer < ActionMailer::Base

default :from => "application\_name@domain.com"

def registration\_confirmation(user)

@user = user

mail(:to => "#{user.name} <#{user.email}, :subject => "Registration Confirmation for Awesome App)

end

end

1. Email view

Hi <%= @user.name %>,

Thanks for registering! To confirm your registration click the URL below.

<%= link\_to "confirm", confirm\_email\_url(@user.confirm\_token, host: "http://lvh.me:3000")%>

https://beatscodeandlife.ghost.io/email-confirmation-in-rails/

11.

12.

Scaffolding in Ruby on Rails refers to the auto generation of a simple set of a model, views and controller usually for a single table. ... Here is how I remember it: Each scaffold is an object inside your application, that users will interact with. User can create this object, or update, or read, or delete.

13.