How to proposal (CS 290_Web Development)

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Starting "How-To Guide" research project, we need to know what API is. API is an abbreviation of Application Programming Interface. API helps developers to make an application faster providing software components. Software libraries are similar with API when it comes to this feature. API can be used for various software including web-based application, mobile application, and database system. This research project will address on API based on web environment.

In my How-To Guide, Computer Vision API from Windows Cognitive Services will be introduced. Microsoft Cognitive Services is a service included in Microsoft Azure, which can make an application more intelligent. They are cross platform so Cognitive service API can be used in various platforms. As you can see from the name of the API, Microsoft Cognitive Services APIs are composed of APIs in vision, speech, language, etc. APIs in vision include Computer Vision API, Emotion API, and other sub APIs.

Computer Vision API which will be discussed in my How-To Guide research project mainly analyze an requested input image. The server returns analyzed result about visual content found in an image in JSON form. It returns description about the data(mainly picture) and tags with confidence(accuracy), image format, image dimensions, and other features. Even though the data should be in specific formats like JPEG, PNG, GIF, BMP, less than 4MB, and greater than 50x50, it works with high accuracy resulting in various information about the data sent to the server.

In the research project, I will firstly discuss about what API is and How can we use the API(Computer Vision API from Windows Cognitive Services) correctly. There are some basic set ups required to use the API and specific ways to call some specific APIs. How to obtain a API key will be discussed also. There are several different APIs in Computer Vision API. To provide better and more specific 'how to guide' about API, I decided to focus on few APIs. The usage of Analyze image API and Get Thumbnail API will be discussed. The first API is used to analyze an image requested to the server. Analyze image is the feature which return valid visual features like categories, tags, description, faces, imageType, Color, and Adult in a form of JSON(JavaScript Object Notation). For example, Adult feature lets the user to detects whether the picture(requested data) is too vulgar to be presented. It can be used to prevent inappropriate images being posted on the website. The second one(Thumbnail API) can be used to make a specific-sized thumbnail using the picture selected by the user.

A third-party library called Bootstrap for UI to make a website quicker and more aesthetic will be used to make a website for How To guide. Bootstrap is one of the most popular HTML, CSS, and JavaScript frameworks which allows people to develop responsive web sites easily and fast. To use Bootstrap, knowledge on HTML and CSS is necessary because it is the frameworkof HTML and CSS. To use API, JavaScript(also jQuery; JavaScript library) will be needed. Responses from the server using this API will be in form of JSON(JavaScript Object Notation). Concrete knowledge how web server and client works will be needed, also. Most of skills were already covered in the class before, Research project on How to use MS Cognitive Services Computer Vision APIs can be processed without a huge hurdle.