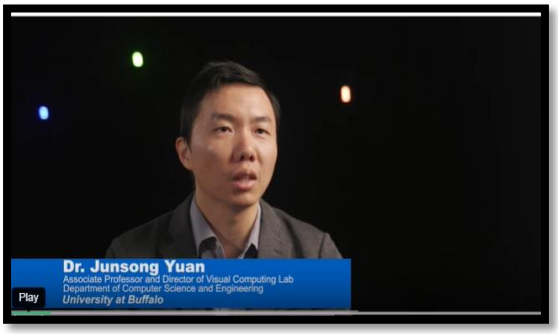
DAILY ASSESSMENT

Date:	**13/07/2020**	**Name:**	**Davis S. Patel**
Course:	**Computer Vision Basics**	**USN:**	**4AL16EC045**
Topic:	**Week 1**	**Semester & Section:**	**8th - A**
GitHub Repository:	**Davis**		

FORENOON SESSION DETAILS
Image of session



REPORT -

Computer Vision, often abbreviated as CV, is defined as a field of study that seeks to develop techniques to help computers “see” and understand the content of digital images such as photographs and videos.

The problem of computer vision appears simple because it is trivially solved by people, even very young children. Nevertheless, it largely remains an unsolved problem based both on the limited understanding of biological vision and because of the complexity of vision perception in a dynamic and nearly infinitely varying physical world.

Smartphones have cameras, and taking a photo or video and sharing it has never been easier, resulting in the incredible growth of modern social networks like Instagram.

YouTube might be the second largest search engine and hundreds of hours of video are uploaded every minute and billions of videos are watched every day.

The internet is comprised of text and images. It is relatively straightforward to index and search text, but in order to index and search images, algorithms need to know what the images contain. For the longest time, the content of images and video has remained opaque, best described using the Meta descriptions provided by the person that uploaded them.

To get the most out of image data, we need computers to “*see*” an image and understand the content.

This is a trivial problem for a human, even young children.

- A person can describe the content of a photograph they have seen once.
- A person can summarize a video that they have only seen once.
- A person can recognize a face that they have only seen once before.

We require at least the same capabilities from computers in order to unlock our images and videos.

Computer vision is a field of study focused on the problem of helping computers to see.

"At an abstract level, the goal of computer vision problems is to use the observed image data to infer something about the world."

It is a multidisciplinary field that could broadly be called a subfield of artificial intelligence and machine learning, which may involve the use of specialized methods and make use of general learning algorithms.

The goal of computer vision is to understand the content of digital images. Typically, this involves developing methods that attempt to reproduce the capability of human vision. Understanding the content of digital images may involve extracting a description from the image, which may be an object, a text description, a three-dimensional model, and so on. Computer vision is the automated extraction of information from images. Information can mean anything from 3D models, camera position, object detection and recognition to grouping and searching image content.

Computer vision is distinct from image processing. Image is the process of creating a new image from an existing image, typically simplifying or enhancing the content in some way. It is a type of digital signal processing and is not concerned with understanding the content of an image.

A given computer vision system may require image processing to be applied to raw input, e.g. pre-processing images.

Examples of image processing include:

- Normalizing photometric properties of the image, such as brightness or color.
- Cropping the bounds of the image, such as centering an object in a photograph.
- Removing digital noise from an image, such as digital artifacts from low light levels.

Applications of Computer Vision

- **Medical Imaging:** Computer vision helps in MRI reconstruction, automatic pathology, diagnosis, and machine aided surgeries and more.
- **AR/VR:** Object occlusion (dense depth estimation), outside-in tracking, and inside-out tracking for virtual and augmented reality.
- **Smartphones:** All the photo filters (including animation filters on social media), QR code scanners, panorama construction, Computational photography, face detectors, image detectors (Google Lens, Night Sight) that you use are computer vision applications.
- **Internet:** Image search, geolocalisation, image captioning, Ariel imaging for maps, video categorization and more.

Computer Vision Challenges - Computer vision might have emerged as one of the top fields of machine learning, but there are still several obstacles in its way of becoming a leading technology. Human vision is a complicated and highly effective system which is difficult to replicate through technology. However, that's not to say that computer vision will not improve in the future.

Challenges we face in Computer Vision

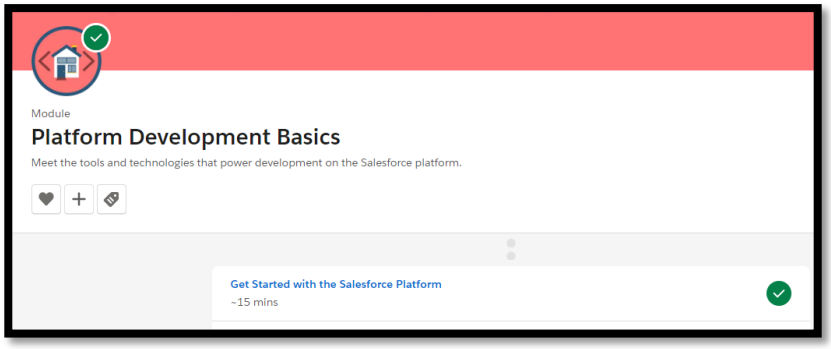
- **Reasoning Issue:** Modern neural network-based algorithms are complex system whose functioning's are often obscure. In situations like these, it becomes tough to find the logic behind any task. This lack of reasoning creates a real challenge for computer vision experts who try to define any attribute in an image or video.
- **Privacy and Ethics**: Vision powered surveillance is a serious threat to privacy in a lot of countries. It exposes people to unauthorized use of data. Face recognition and detection is prohibited in some countries because of these problems.
- **Fake Content:** Like all other technologies, computer vision in the wrong hands can lead to dangerous problems. Anybody with access to powerful data centers is capable of creating fake images, videos or text content.

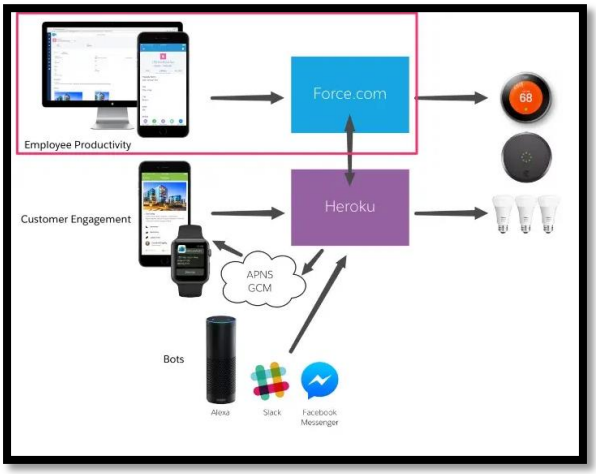
DAILY ASSESSMENT

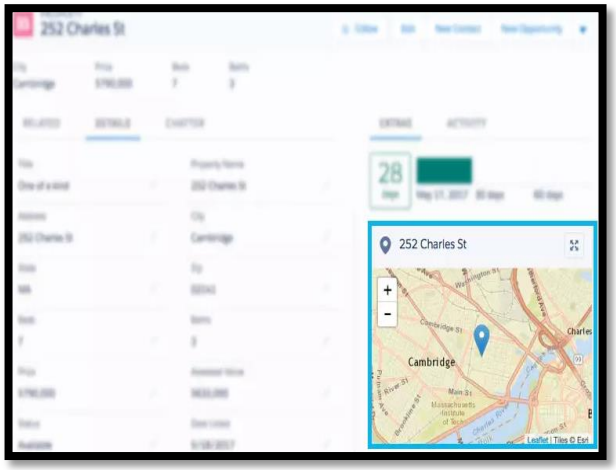
Date:	**13/07/2020**	**Name:**	**Davis S. Patel**
Course:	**Salesforce Developer**	**USN:**	**4AL16EC045**
Topic:	**Platform Development Basic**	**Semester & Section:**	**8th - A**
GitHub Repository:	**Davis**		

AFTERNOON SESSION DETAILS

Image of Session







REPORT –

At Salesforce, group our services by clouds. There's Sales Cloud for CRM, Service Cloud for customer support, and a handful of other clouds that help companies support their business functions. And while each of these clouds serves a unique purpose, there's one thing they all have in common: the power of the Salesforce platform.

Like any platform, the Salesforce platform is a group of technologies that supports the development of other technologies on top of it. What makes it unique is that the platform supports not only all the Salesforce clouds, but it also supports custom functionality built by our customers and partners. This functionality ranges from simple page layouts to full-scale applications.

The Dream House App

Let's float a scenario. Throughout the rest of this module, we use this scenario to explore the many exciting tools and technologies that the Salesforce platform provides.

We're a developer for Dream House Realty, a company that aggregates real estate listings to better connect homebuyers and real estate agents. Your boss asks you to build a new system to track real estate listings. Your internal employees will use it to track and communicate about properties. Your partner real estate brokers will use it to access information about customers. And your customers will view properties and contact brokers for viewings.

Building an app like this one from scratch isn't an easy thing to do. Taking on this project in real life can involve a long, complicated list of functional requirements and the implementation of special integrations for your company's business data. Working by yourself, it can take you months to get something out the door.

What's Inside Dream House?

The Dream House app is an example of what's typically referred to as an internal employee productivity app. It's built using various parts of the Salesforce platform. This diagram gives an

overview of the system landscape of the Dream House application set. It includes Heroku services and other connected devices, but let's focus on the core platform piece for the time being.

What's Inside DreamHouse?

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No-Code and Low-Code Development

The no-code and low-code development capabilities that the Salesforce platform provides means that you, as a developer, can move faster. If you're the only person at your company developing on Salesforce, you can use the platform's many declarative tools to build more in less time. If you're working on a team with non-coders, you can leave the declarative development tasks to them while you double down on more code-intensive projects.

Lightning Components

The Lightning Component framework is a user interface development framework for desktop and mobile. As its name suggests, it's a component-based approach to UI development. Using prebuilt and custom Lightning components, you can quickly develop sleek and consistent UIs for your apps

The Developer Console is the Salesforce integrated development environment (IDE) that you can use to develop, debug, and test code in your org. Right now, it contains the code for the property map you just saw. We're not going to dig into the code at the moment—there's another module for that. But take a few seconds to notice some of its key attributes. It's XML markup. It contains both Aura-specific and static HTML tags. It uses a <namespace:tagName> convention for its tags, each represents a smaller, or child, component.

On the right side of the Developer Console, you also see some additional assets that are part of this component's bundle. If you click on **CONTROLLER**, for example, you see some JavaScript.

Lightning components use client-side JavaScript controllers and server-side Apex controllers. You can create and access those controllers, as well as other assets like component style sheets, from the bundle menu.

Another great thing about Lightning components is that they're mobile-ready. When you create apps for the Salesforce mobile app, you don't have to worry about the way Lightning components display. You can just add them to the app and let the platform handle the rest.

IoT

Depending on your industry, integrating Salesforce with the Internet of Things (IoT) may or may not be a necessity. However, with smart devices on the rise, it's not a bad idea to get familiar with developing with IoT in mind.

For example, when DreamHouse real estate agents prepare to show a house to a potential buyer, there are things they always do, such as unlock the doors to the house, turn on the lights, and make sure the temperature is just right.

Using a combination of Visualforce or Lightning components, micro services hosted on Heroku, and the IoT interfaces from smart locks, lights, and thermostats, you can build IoT control right on the platform.IoT has many other applications. For any company with a connected hardware component, Salesforce's IoT capabilities give you an easy way to collect, manage, and analyze data about devices. It also helps you do things like monitor the performance status of your customers' devices and define business logic that supports customer engagement.

Bots

Chatbots are typically used in external customer service. But you can also build them right into your Salesforce org to help your employees navigate their data.Let's think about DreamHouse again. Say a family gets in touch with a real estate agent and tells her they want to purchase a three bedroom home in the Boston area. To find appropriate homes for this family, the real estate agent can take advantage of bots. Back in our DreamHouse org, we can see a bot in action.From the AppLauncher, select DreamHouse.