# REPORT JULY 13

| Date: | 13 JULY 2020 | Name: | Rakshith B |
|---|---|---|---|
| Course: | Coursera | USN: | 4AL16EC409 |
| Topic: | Mathematics for Machine Learning | Semester & Section: | 6th SEM B |
| Github Repository: | Rakshith-B | | |

**Image of the Session**
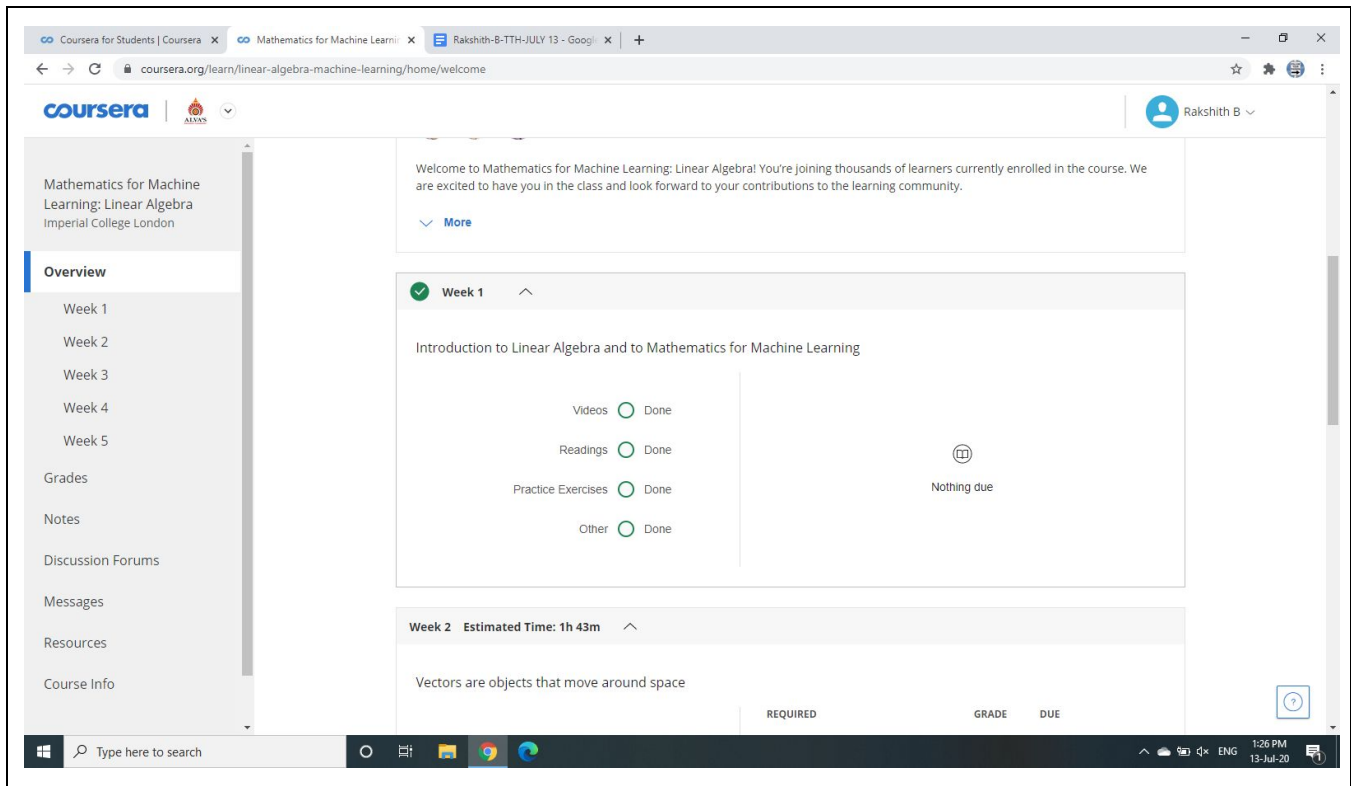


In this first module we look at how linear algebra is relevant to machine learning and data science. Then we'll wind up the module with an initial introduction to vectors. Throughout, we're focussing on developing your mathematical intuition, not of crunching through algebra or doing long pen-and-paper examples. For many of these operations, there are callable functions in Python that can do the adding up - the point is to appreciate what they do and how they work so that, when things go wrong or there are special cases, you can understand why and what to do.

Having all the freedom to study online is nice, but this might make it difficult to focus and start studying. When learning online, you should become a self-directed learner!

Here are some great tips for you, collected from this blog, on how to be successful in your online class:

1. Read the syllabus: all the important information can be found here!
2. Plan weekly study times

3. **Log on to the class at least 3 times a week**
4. **Ask questions**
5. **Make connections with your fellow learners**

# Requirements

**This course explains some of the fundamentals of Linear Algebra and translates these to the basics of Machine Learning. As a learner, you will practice with these basics and in order to do so you'll find exercises that require different types of interactivity. Alongside video lectures and quizzes, you'll also get to work with code blocks and Jupyter Notebooks. These are integrated within the course: you don't need any specific hardware or software packages to access these.**

**If you experience any difficulties whilst working on these exercises, please consult the Discussion Forum as other learners may have posted questions and answers that may help to solve your problem. Alternatively, you can visit the [Coursera Help Centre](#) for more information on the different types of assignments and how to troubleshoot problems.**

**In this video, we're going to look a bit more at the types of problems we might want to solve, and expose what Linear Algebra is and how it might help us to solve them. The first problem I might think of is one of price discovery. Say I go shopping on two occasions, and I buy apples and bananas, and the first time I buy two apples and three bananas and they cost eight Euros. And the second time I buy, say, ten apples and one banana, and the cost is 13 Euros. And the As and the Bs here, are the price of a single apple and a single banana. And what I'm going to have to do is solve these what we call simultaneous equations in order to discover the price of individual apples and bananas. Now in the general case of lots of different types of items and lots of shopping trips, then finding out the prices might be quite hard. It might be quite difficult to solve all these equations by hand. So, we might want a computer algorithm to do it for us, in the general case. Now, this is an example of a Linear Algebra problem. I have some constant linear coefficients here, these numbers 2, 10, 3, 1, that relate the input variables A and B, to the output 8 and 13, that is if I think about a vector [a,b], that describes the prices of apples and bananas. Then this gets translated into a cost, to find out how many I might want to buy, and the cost happens to be 8 on the first trip, and 13 Euros on the second trip. And I can write this down as a matrix problem where the 2, 3 is my first trip, and the 10, 1 is my second trip, and then these are then matrices, that's a matrix then, and these are vectors, and what we're going to do over the course of modules one to three, is build up, Looking at these different types of mathematical objects, and understanding what they are and how to work with them, these vectors and these matrices. And then, we'll come back and figure out how to solve this problem in the general case. Another type of problem we might be interested in is fitting an equation to some data. In fact, with neural networks and machine learning, we want the computer in effect not only to fit the equation, but to figure out what equation to use. That's a highly inexact description really of what's going on, but it gives the right sort of flavor. But let's say, we have some data like this histogram here. This looks like a population with an average and some variation here, some width. Another type of problem we might want to solve, as well as the apples and bananas problem, is how to find the optimal value of the parameters in the equation describing this line. The ones that fit the data in the histogram best. That might be really handy, then using that equation we'd have an easy portable description of the population we could carry around, without needing all**

the original data which would free us, for example, from privacy concerns. Now, we can plot how good the fit was in terms of the parameters, and that's what we'll look at in the next video. In this video, we've set up two problems in this first module on Linear Algebra. First, the problem of apples and bananas, of solving simultaneous equations. And secondly, the optimization problem of fitting some data with an equation with some fitting parameters, and these problems we'll go on to look at and motivates our work right through the course on Linear Algebra, and it's partner of multivariate calculus.

| Date:13 JULY 2020 | 06 JUNE 2020 | Name:RAKSHITH B |
|---|---|---|
| Course | Salesforce | USN:4AL16EC409 |
| Topic | Getting Started with Salesforce | Semester & Section:6 B |

# Get Started with the Salesforce Platform

## Learning Objectives

After completing this unit, you'll be able to:

- Define the Salesforce platform.
- Describe the DreamHouse scenario.
- Create a Trailhead Playground.
- Explain the difference between declarative and programmatic development.

## A Quick Introduction to Salesforce

You might think that Salesforce is just a CRM. It stores your customer data, gives you processes to nurture prospective customers, and provides ways to collaborate with people you work with. And it does all those things. But saying that Salesforce is "just a CRM" is like saying a house is just a kitchen. There's a lot more to it than that.

Salesforce comes with a lot of standard functionality, or out-of-the-box products and features that you can use to run your business. Here are some common things businesses want to do with Salesforce and the features we give you that support those activities.

| You need to: | So we give you: |
|---|---|
| Sell to prospects and customers | Leads and Opportunities to manage sales |
| Help customers after the sale | Cases and Communities for customer engagement |
| Work on the go | The customizable Salesforce mobile app |

| Collaborate with coworkers, partners, and customers | Chatter and Communities to connect your company |
| --- | --- |
| Market to your audience | Marketing Cloud to manage your customer journeys |

Depending on what your company purchases, you can get these features and more without lifting a finger. But you can almost think of these features as a model house that a real estate agent shows off. You could certainly live there, but it wouldn't be your home. It wouldn't have your art on the wall or that unusual coat rack your Aunt Tilda gave you as a housewarming gift.

That's where the Salesforce platform comes in. With the platform, you can customize and build whatever it is that makes your company unique. And when you have a business application that's unique to you, everyone is more successful.

1. Cloud Kicks—This custom sneaker company is making waves in the footwear industry. They use Salesforce to manage sales and help streamline their complicated order creation and fulfillment process.
2. Ursa Major Solar—On the cutting edge of renewable energy, Ursa Major Solar needs business software that doesn't shy away from groundbreaking technology. They use Salesforce to manage sales and customer service nationwide.
3. Get Cloudy Consulting—As one of the best cloud consulting firms in the business, Get Cloudy knows CRM. They use Salesforce to manage existing and potential clients, and they're always looking for new ways to innovate with Salesforce services.
4. DreamHouse Realty—Known for their fresh approach to real estate, DreamHouse uses Salesforce to connect their employees and improve the efficiency of home sales.

We're digging this house theme, so let's kick off our first module by looking at DreamHouse Realty. We'll use DreamHouse's Salesforce implementation to explain some of the fundamental terms, concepts, and capabilities of the Salesforce platform.

Let's learn a bit more about DreamHouse.

Michelle is the lead real estate broker at DreamHouse. She finds many potential home buyers through DreamHouse's web and mobile apps. With the apps, customers can browse available homes and make a favorites list of properties that they're interested in. They can also reach out to Michelle or other brokers directly to set up showings.

## Your First Trailhead Playground

A Trailhead Playground (TP) org is a safe environment where you can practice the skills you're learning before you take them to your real work. TPs come with all the standard app building and

customization tools required to test your app development chops. If you've ever heard of a Developer Edition (DE) org, a TP is a special type of DE.

When you sign up for Trailhead, we automatically create a TP for you. So if you haven't signed up yet, now is a great time to do so. If you're already signed in, scroll to the bottom of this page and click Launch to open your TP.

TP orgs are free and you can have up to 10 of them at a time. To create one, go to any hands-on challenge, click the down arrow next to Launch and select Create a Trailhead Playground.. If you hit your max or want to manage your TPs, you can view and delete them from your Trailhead profile. If you ever need your TP's username and password, you can access them using the instructions **here**.

Go ahead and launch your TP so we can start getting our hands dirty.

## Customize the Salesforce Platform

You already know that you can use the Salesforce platform to develop custom objects and functionality specific to your business. What you might not know is that you can do most of this development without ever writing a line of code.

Developing without code is known as declarative development. With declarative development, you use forms and drag-and-drop tools to perform powerful customization tasks. The platform also offers programmatic development, which uses things like Lightning components, Apex code, and Visualforce pages. But if you're not a programmer, you can still build some amazing things on the platform.

Let's start small. Michelle wants a way to quickly indicate whether a potential home buyer is prequalified for a home loan. To make this change, D'Angelo wants to create a prequalified checkbox on the contact object. In Salesforce-speak, we're adding a custom field to a standard object. Let's see how he does it.

1. From the gear icon (  ), click Setup to launch the setup page. We use Setup a lot, so remember this step!
2. Click the Object Manager tab.
3. Click Contact.
4. Under Fields & Relationships, click New.
5. A data type indicates what kind of information your field holds. For this field, pick Checkbox and click Next.
6. The Field Label is what you see on the Contact page. Enter Prequalified? and click Next.
7. Click Next and then Save.

**You just customized your first object. Great job!**

## AMES Revision:

**Image of the Session:**