DAILY ASSESSMENT FORMAT

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| **Date:** | **15/07/2020** | **Name:** | **Nayanashree K S** |
| **Course:** | **Coursera** | **USN:** | **4AL16EC042** |
| **Topic:** | **Mathematics of machine learning-Linear algebra** | **Semester & Section:** | **8 A** |
| **Github Repository:** | **Nayana\_online** |  |  |

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| **FORENOON SESSION DETAILS** |
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| **Report**  Numerical Linear Algebra The application of linear algebra in computers is often called numerical linear algebra. “numerical” linear algebra is really applied linear algebra. — Page ix, Numerical Linear Algebra, 1997. It is more than just the implementation of linear algebra operations in code libraries; it also includes the careful handling of the problems of applied mathematics, such as working with the limited floating point precision of digital computers. Computers are good at performing linear algebra calculations, and much of the dependence on Graphical Processing Units (GPUs) by modern machine learning methods such as deep learning is because of their ability to compute linear algebra operations fast.  Linear Algebra and Statistics 4 Efficient implementations of vector and matrix operations were originally implemented in the FORTRAN programming language in the 1970s and 1980s and a lot of code, or code ported from those implementations, underlies much of the linear algebra performed using modern programming languages, such as Python. Three popular open source numerical linear algebra libraries that implement these functions are:  Linear Algebra Package, or LAPACK.   Basic Linear Algebra Subprograms, or BLAS (a standard for linear algebra libraries).  Automatically Tuned Linear Algebra Software, or ATLAS. Often, when you are calculating linear algebra operations directly or indirectly via higher order algorithms, your code is very likely dipping down to use one of these, or similar linear algebra libraries. The name of one of more of these underlying libraries may be familiar to you if you have installed or compiled any of Python’s numerical libraries such as SciPy and NumPy.  Linear Algebra and Statistics Linear algebra is a valuable tool in other branches of mathematics, especially statistics. Usually students studying statistics are expected to have seen at least one semester of linear algebra (or applied algebra) at the undergraduate level. — Page xv, Linear Algebra and Matrix Analysis for Statistics, 2014. The impact of linear algebra is important to consider, given the foundational relationship both fields have with the field of applied machine learning. Some clear fingerprints of linear algebra on statistics and statistical methods include:  Use of vector and matrix notation, especially with multivariate statistics.  Solutions to least squares and weighted least squares, such as for linear regression.  Estimates of mean and variance of data matrices.  The covariance matrix that plays a key role in multinomial Gaussian distributions.  Principal component analysis for data reduction that draws many of these elements together. As you can see, modern statistics and data analysis, at least as far as the interests of a machine learning practitioner are concerned, depend on the understanding and tools of linear algebra. 1.5. Applications of Linear Algebra 5 1.5 Applications of Linear Algebra As linear algebra is the mathematics of data, the tools of linear algebra are used in many domains. In his classical book on the topic titled Introduction to Linear Algebra, Gilbert Strang provides a chapter dedicated to the applications of linear algebra. In it, he demonstrates specific mathematical tools rooted in linear algebra. Briefly they are:   Matrices in Engineering, such as a line of springs.   Graphs and Networks, such as analyzing networks.   Markov Matrices, Population, and Economics, such as population growth.   Linear Programming, the simplex optimization method.   Fourier Series: Linear Algebra for functions, used widely in signal processing.   Linear Algebra for statistics and probability, such as least squares for regression.   Computer Graphics, such as the various translation, rescaling and rotation of images.  Another interesting application of linear algebra is that it is the type of mathematics used by Albert Einstein in parts of his theory of relativity. Specifically tensors and tensor calculus. He also introduced a new type of linear algebra notation to physics called Einstein notation, or the Einstein summation convention. |

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| **Date:** | **15/7/2020** | **Name:** | **Nayanashree K S** | |
| **Course:** | **Salesforce** | **USN:** | **4al16ec042** | |
| **Topic:** | **Salesforce platform basics** | **Semester & Section:** | **8 A** | |
| **AFTERNOON SESSION DETAILS** | | | |
| **Report** **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. Stories of Salesforce Throughout Trailhead, you are introduced to a lot of companies and characters that are using Salesforce in different ways. Let’s meet some of the players.  These four companies appear throughout Trailhead to help you learn about our services.   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.  Michelle, the lead broker at DreamHouse.  D’Angelo is DreamHouse’s Salesforce administrator. Using the Salesforce platform, he’s building a suite of custom functionality to support Michelle and her team. Michelle can use this custom functionality to edit and view information about the properties she’s selling, as well as keep track of her potential buyers.  D'Angelo, the Salesforce Admin at DreamHouse.  Remember, Salesforce comes with standard functionality for tracking common sales objects like accounts, contacts, and leads. But DreamHouse is a realty firm, so it has needs specific to its industry and business model. Throughout this module, we work with D’Angelo to see how the Salesforce platform can meet those needs. Get to Know Our Terms Perhaps you noticed a strange word in that last paragraph: objects. **Object** is one of many important terms you’ll learn as you get to know Salesforce.  First, it’s important to understand what a **database** is in the context of Salesforce. When we talk about the database, think of a giant spreadsheet. When you put information into Salesforce, it gets stored in the database so you can access it again later. It’s stored in a very specific way so you’re always accessing the information you need.  Let’s take a look at a page from the DreamHouse app to define some of its important elements and how they relate to the database.  A labeled property record.   1. An **app** in Salesforce is a set of objects, fields, and other functionality that supports a business process. You can see which app you’re using and switch between apps using the App Launcher ( App Launcher icon). 2. **Objects** are tables in the Salesforce database that store a particular kind of information. There are **standard objects** like Accounts and Contacts and **custom objects** like the Property object you see in the graphic. 3. **Records** are rows in object database tables. Records are the actual data associated with an object. Here, the 211 Charles Street property is a record. 4. **Fields** are columns in object database tables. Both standard and custom objects have fields. On our Property object, we have fields like Address and Price.   Another important term that’s hard to capture in a picture is **org**. Org is short for organization, and it refers to a specific instance of Salesforce. The image here is taken from DreamHouse’s org. Your company can have one or multiple orgs.  That’s a lot of new stuff to tackle. If you don’t get it all right away, don’t worry. As you continue to learn about Salesforce, the terminology will start to come naturally. | | | |