Lesson Proper for Week 1

What is Application Development?

I. INTRODUCTION:

We begin this module by developing a motivation for learning about what is Application Development. The Application development is the process of designing, building, and implementing software applications. It can be done by massive organizations with large teams working on projects, or by a single freelance developer.

II. OBJECTIVES:

At the end of this module, you should be able to:

1. Identify what are Application Development and the Application Developer.

2. Understand the types of Application Development.

3. Describe the roles of Application Developer

IV. LESSON PROPER

Application development defines the process of how the application is made, and generally follows a standard methodology. There are lots of factors that go into how application development is done. You must consider the size of the project, how specific the requirements are, how much the customer will want to change things, how large the development team is, how experienced the development team is, and the deadline for the project. Application development is closely linked with the software development life-cycle (SDLC).

Types of Applications

A. How they're built

1. Native application is when a mobile application developer writes their code as a native, web or hybrid application - and these terms can also describe desktop applications. The developer codes to run on specific hardware, such as a camera or GPS, and in the same programming language as the underlying OS. For example, the Photos application on Mac OS X is written in Objective-Cthe same language that Mac OS X uses.

2. Web application via a web browser, such as Google Chrome. A developer can write web applications in several languages, including JavaScript, CSS and HTML, but they cannot access the hardware on which the application is installed.

3. Hybrid applications have APIs that can access device resources, similar to a native application, but are typically written in languages such as HTML and CSS. Additionally, developers often code mobile applications to work on a specific device platform

B. Categories by licensing style

1. Proprietary software programs, such as Adobe Photoshop, are applications that are owned under copyright. End users can buy or license proprietary applications through the vendor providing the software. They cannot modify these applications; they can only add functionality to them via third-party add-ons.

2. Open source applications, such as WordPress, provide the source code for end users and developers to use and modify. Software companies and individual developers typically make open source applications freely available under a generic or public license, such as GNU.

B. For which market they are used.

1. Vertical application typically serves a specific industry or departmental need, such as a medical billing system. 2. Horizontal application, such as a word processor or web browser, applies to a wide range of industries.

Application Developer

An application developer creates and tests applications designed for electronic computing devices. He or she will typically specialize in a development area such as mobile phone applications, for example. An application developer is a critical part of technical and/or project management teams responsible for ensuring user needs are met through the deployment and updates of software.

Roles and Responsibilities of Application Developers

Application developers have a number of responsibilities that fall on their shoulders. These have to do with managing the application lifecycle, knowledge of certain principles in coding, support and collaboration efforts.

1. Coding and Design

It stands to reason that a very basic tenant of application development is an in-depth knowledge of coding and application design principles. Depending on the specialization, application developers need to know the right programming language to code for the operating system they are designing for. Typical programming languages include:

- Java / JavaScript
- C++

- Python; and
- PHP

2. Application Management

Among the most robust responsibilities of an application developer is application management. As the name implies, a soft skill that application developers must present is an organized ability to manage the application lifecycle, and people involved in the process, to ensure smooth deployment and post deployment modifications.

- **Understanding the Application Deployment Lifecycle**

The application deployment lifecycle typically involves the following key stages: Initial Planning > Design > Development > Testing > Deployment > Support.

In each phase, an application developer is required to have specific knowledge and abilities to propel the phase into completion. These include activities around collaboration and project management. More specifically:

- Planning and Design – This stage requires specific input from both a project management and collaborative perspective. On the side of project management, the application developer must gather requirements that are based on the analysis of empirical data. For instance, the application developer should have access to end-user data that suggests what kind of issues the software sets out to solve. Armed with this information, they should have the analytical soft skills to deduce requirements. On the side of communication and collaboration is program design. This refers to building the architecture of the software and is generally spearheaded by the developer though he or she must incorporate input from other key stakeholders on the team.
- Development and Testing – This is where the fun begins! Based on the design requirements gathered in the previous step, the developers will begin the iterative steps of coding, testing and revising. As a leader in communication, the software developer must also work collaboratively with a panel of end-users to ensure quality assurance. Development and testing are the longest phases in the lifecycle.
- Deployment and Support – When the project is complete and tested, it will be deployed. At this point, the software developer has completed the major phases of the lifecycle, and the project management focus shifts to customer support. At the same time, the developer must collaborate with other senior members of the IT department to assure asset management line items are being completed

3. Troubleshooting and Debugging Applications

Troubleshooting is a term that defines the systematic way in which application developers must be able to identify, categorize, parse out and articulate problems that occur in applications. Troubles Troubleshooting takes place during the testing phase of the lifecycle and requires developers to collaborate with end-users at a high level to identify problems in the system. Debugging should be thought of as a subset of troubleshooting which refers to the actual process of removing identified issues on a case-by-case basis. Both of these techniques are required of savvy developers.

4. Monitoring, Updates and Security

As mentioned above, an application developer's job doesn't end at deployment. Instead, once the application is rolled out, he or she must shift into a mode where they are prepared to monitor and release updates to the edition as needed. This is necessary for the application to run smoothly, and to reduce security risks. Application developers must also understand security protocols that protect users from external threats, and stay on the

cutting edge of the changing field of technology and cybersecurity. For instance, as more and more applications begin to explore the many uses of blockchain, application developers using will need to stay abreast of the many risks associated with this disruptive technology.

5. Server Engineering and Admin Responsibilities

An application developer for an enterprise organization may also be tasked with server engineering functions. This includes becoming familiar with the programming languages required to code database software and backend platform technology, networking servers, performing network tests, lofty experience with cloud servers, using cloud platforms like AWS and more. In these instances, application developers may be required to not only code aspects of the server environment but admin platforms that are required for critical systems to function.

6. End User Support and Training

As a critical part of the deployment cycle, application developers are required to manage all elements of training and support. This could mean collaborating with other team members to develop training videos, infographics or tutorials, conducting phone training and support, or live troubleshooting of issues. This includes ensuring updates are pushed out to keep the programs running smoothly, and all security measures are met, as well as debugging issues as they arise.

7. **Project Management, Collaboration, Communication**

All of the above-mentioned responsibilities, require an in-depth understanding and practical, foundational knowledge of project management, collaboration and communication. These skills, both hard and soft, are evident throughout the application lifecycle and continue to be relevant after deployment is complete.

EXERCISE 1

A student unintentionally enters a wrong user-id causing temporary halt entering in the student information system. What is the necessary steps or codes could be implemented to handle this situation ?

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EXERCISE 2

Your school would like to create simple registration system to help students enrolled in the college. What are the simple instructions would you give to help students during enrollment?

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Courses

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2nd Semester Enrollment

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