**Software Engineering Methodology For Healthcare Application Development**

**Introduction:**

The aim of the healthcare structures is to obtain the exceptional feasible assist for affected person care and to offer the gold standard clinical care. The healthcare structures must assist suitable fitness, truthful economic contribution, and first-rate services. Healthcare enterprise has swiftly grown with inside the remaining decade, specifically in growing countries. Medical software program implementation represents one of the most important destiny demanding situations in healthcare enterprise. Using healthcare facts structures will growth the range of fitness services, enhance the high-satisfactory of care and decrease the clinical errors. The use of facts structures with inside the healthcare enterprise is dramatically increasing. A efficiently implementation of healthcare software program in healthcare enterprise seems to be a tough task. Software engineering for healthcare structures is an rising discipline for software program builders and IT specialists. Software engineering methodologies are being utilized in healthcare the equal manner utilized in different industries. The nature of structures and enterprise together with healthcare structures must be taken into consideration within side the software program-improvement method. A healthcare device has houses and functions that want to be addressed, as they're one of a kind from different structures. For those reasons, we're offering a brand new software program engineering method for healthcare programs SEMHTA. This method is meant to remedy the software program-improvement troubles and demanding situations within side the healthcare domain. The important motive for growing a brand new software program engineering method for healthcare together with SEMHTA is the want for constructing a dependable and steady healthcare device with a excessive performance.

**Motivation :**

Working in healthcare can be one of the most rewarding option for software developer. You could assist physicians and hospitals in providing better service to sick patients. Here are some of roles software developers could fill in this field.

**Medical Software Engineer**

These are the engineers who expand software program packages or structures that facilitate healthcare offerings and offer new approaches to carry out scientific remedies the use of the present day technologies. Their paintings includes: Creating and handling web sites that join scientific researchers with medical experiments statistics from everywhere in the world. Developing cell manner of communique that could permit for real-time collaboration among physicians who're positioned in specific places. Providing medical doctors with statistics and fitness statistics referring to a affected person. Creating software program that does a higher process of compiling and storing affected person fitness statistics. Performing studies on an current software program`s capability and requirements, and make upgrades to the software program to growth its efficiency.

**Healthcare Information Technician**

These technicians are tasked with the every day employer and control of fitness records information. They ensure that each one the digital information the sanatorium contains is maintained to a excessive general of high-satisfactory and accuracy, and to make the information available to docs and nurses at a moment`s notice. They also are in fee of the safety of affected person facts in each paper and virtual form. The technician additionally organizes the to be had information into unique classes for smooth maintenance. These classes can range everywhere from coverage associated documentation, database registries, to the affected person's remedy history.

**Healthcare App Developer**

Medical apps are any other vicinity wherein software program builders may work into this industry. There are some of scientific necessities of sufferers and everyday human beings which are fulfilled with the aid of using apps, and a number of the regions of scientific app improvement that software program engineers paintings on are: Apps which give each day updates approximately techniques of boosting fitness and nutrients for the consumer. These apps paintings intently with medical doctors and physicians to supply the maximum correct information. Apps which join the consumer to a health center or health practitioner at a moment`s notice. Apps which hyperlink the consumer to a unique on-line network of customers with comparable scientific issues for mutual aid and counseling. Alerts and reminders that can serve to inform the customers once they want to take their medicinal drug and while it is time for his or her scientific appointments. Fitness and nutrients apps which assist everyday customers without a precise scientific issues stay a more fit lifestyles with the aid of using tracking their workout regime, calorie consumption etc.

In healthcare we are directly dealing with patient's health information So there are many things to be taken care of, a little mistake can make a huge effect on somebodies life. Another thing that we have to focus is speed. You are not supposed to keep a sick person waiting. There are some laws (eg. HIPAA) for the healthcare applications. You have to take care of them too. Healthcare applications also require data transport, So you need to integrate a very secure data transport system. Health data is generalized in the form of codes (ICD 9, ICD 10, NDC, LOINC etc ) . So you also need to keep track of all of them. We are working on this topic to more development of healthcare application.

**Outcomes:**

As software method is implemented in healthcare systems , the system is more efficient. Doctors, patients management system is more dependable. The equipment and medicines organized well. The software system provides statistics and it analyses the data. As a result ,it can easily play a great role for decision making. So this software method easily improves the healthcare system.

**Objectives :**

The research objectives of smart healthcare applications are given below:

* The Goal of our research is improved the patient care. Such as: by   improving accessibility, by making information belonging to patients, by improving patient administration procedure.
* To improve the management efficiency of healthcare.
* The main purpose of Healthcare Application is to book appointments with doctors and buy medicines online without having to travel to hospital.
* To form an integral part of a larger quality improvement program in the department.