# Improving medical data collection and processing using Web technology.

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## Introduction

Attention is drawn here to the growing gap between access to contemporary and medical information. Paper based medical documentation and it's processing are rapidly becoming obsolete. Hospitals are investing in Medical Information Technology which though useful for administration, falls far short of the degree of sophistication required for adequate medical care. This contrasts starkly with the achievements in computing hardware and programming that are part of daily life. This difference is steadily increasing but little is being done to address it. Medical personnel are essential for developing such sophisticated systems. Through lack of interest, time, motivation, or ignorance, even through denial of the necessity, only tiny minority of them have become involved or have much knowledge or experience.

## Methods

Financial constraints are not a limiting factor for learning software development. This is specially the case with Open Source(OS) software which can be used free of charge by all. OS offers educational opportunities, operating systems, programming languages, and applications and that are mature and universal, and, excellently maintained and developed.

## Learning

There is vast Internet community support with tutorials, forums, and documentation for OpenSource. Advanced educational material, such as audiovisual aids (web casts and Pod casts) and interactive tutors help to popularize them.

## Development

For programming with OS applications, a wide variety of technology is available. The many databases include Mysql, Postgres, and Sqlite. Scripting Languages (Ruby, JavaScript, Perl) offer simpler programming for the less experienced. Programming aids allow earlier completion of applications. Dedicated text editors (TextMate, Sublime) assist the writing of code. Frameworks such as Rails guide this learning. Using conventions they simplify program writing and shorten the time to completion of an application. Using Test Driven Development, software is examined during in its primary stages to speed secure correct completion. Web software repositories (Github), for public and private use, facilitate software access and team contribution.Web presentation and design are also catered for. Account must be taken of how the information is being displayed on the viewing port (browser, telephone). Integrated Development Environments (IDE) allow application production coordinated collections of programming tools (NetBeans, Eclipse).

**Deployment, staging, and use.**

Deployment (making the application available on a web server) and staging, are the following steps in making a Web application available. Finally, public can access information deployed on a dedicated computer, a leased computer (hosting) or even on a computer in the home of the programmer. Web Hosting is at present inexpensive, and flexible (Heroku, Webbynode, Amazon). Besides the Web application itself, copies of the complete operating system on which it runs can be hosted. With the Cloud Computing of Amazon (S3 storage, Elastic Cloud), infrastructure use is billed on data storage and transfer. Storage can be rapidly acquired or released, making it ideal for low budget projects. Amazon Cloud Computing use is simple rapid and Web browser based. Statistical information on the performance of the project can be made available through services such as New Relic.

**Results Discussion**

Inexpensive technology is available for developing sophisticated software. It has as yet been sparsely applied in medical practice. It remains to be seen if and when the medical professionals realize this short-coming.