


# Designing Embedded Systems: Handbook + LAMP Project

*By Steve McClure*

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**Designing Embedded Systems: Handbook + LAMP Project** By Steve McClure

This book reviews the Software Development and Engineering Principles involved in the Design of Embedded Computer Systems.

A LAMP (Linux Apache MySQL PHP) design for a Web-Based Home Control / Security Application is also provided (full source code included).

This book is applicable to both the seasoned Embedded Software Engineer and to the Hobbyist who just wants to learn a little bit about writing code. Information gathered by the author's 30+ years in the field is discussed as he presents what works and what does not work with regard to embedded software engineering. This will help engineers but will also be an aid in assisting those who are tasked with managing the design of an embedded application.

But what of the novice?

What of the person wanting to gain some understanding in the field of embedded software engineering?

Do they need a Computer Science or Electrical Engineering degree before they can even begin to learn how to program an embedded system?

All too many books discuss such programming from an advanced level.

Well, this book is not like that at all.

The idea is to get anyone that is interested in embedded programming to be up and running in a short period of time. The language of choice today is C or C++. For an easy entrance into this world of programming the C language was chosen for the code examples presented within this book. But what programming application should be tackled? An embedded application is a program that continually executes on a computer system and as it does so, it interacts with its environment.

A home control lighting system would be the ideal application and by the time you have finished you would know how:

• To install LAMP (Linux, Apache (Web Server), MySQL and PHP) on your PC computer
• To backup/restore your Linux hard drive
• To automatically execute your application at system startup
• To apply Java Script, MySQL and PHP to your own Web page
• To build C applications that communicate over serial ports
• To build C applications that use MySQL
• To write a complete Home Control / Security application
• To have your application send email messages with WebCam images
• To have your Home Control / Security application speak messages
• To compute and utilize sunrise and sunset times for each day of the year

Oh! And there's one added bonus. With this system you do not require any monthly monitoring fee. Since your Home Control / Security application simply sends you an email when it detects an intruder, you can immediately go home or call a friend or neighbor to check on the house. No need to fork out money each month for some 'service' charge.

They say that knowledge is power. That may be true, but to sit at home using your iPAD or iPHONE (or some other Tablet, or even a web page on one of your computers) and to bring up your Home Control web page and click on a button to turn on a light or to initiate a sequence of events for evening television viewing, well, that is really neat.

And this book presents all this information to you in an easy to read form.

The book is also written in such a way that it may be used by both small and large engineering companies. By the time you have completed its reading you will have learned that an embedded project is much more than simply writing software code. It is an entire documentation process of which code amounts to but a small percentage. The reason software generally takes a long time to develop (and costs even more to maintain) is simply because this design process is often overlooked or bypassed. For a fully documented design is required by all company departments in order for them to successfully complete their work.

So now is the time to get into some fun and start programming an embedded application!

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## Editorial Review

About the Author

The author holds a degree in Computer Science and has spent much of his life designing and engineering various embedded computer software programs for aviation, video, cellular telephone, robotic and medical applications. This knowledge he gained while working in numerous sized companies located in different countries of the world.

The author has developed software, produced technical books and is currently writing a number of SciFi / Fantasy Adventure novels. Please use the author's link for more information.

## Users Review

**From reader reviews:**

**Darlene Johnson:**

The book Designing Embedded Systems: Handbook + LAMP Project make one feel enjoy for your spare time. You may use to make your capable considerably more increase. Book can being your best friend when you getting tension or having big problem along with your subject. If you can make reading a book Designing Embedded Systems: Handbook + LAMP Project being your habit, you can get considerably more advantages, like add your capable, increase your knowledge about many or all subjects. You are able to know everything if you like available and read a book Designing Embedded Systems: Handbook + LAMP Project. Kinds of book are a lot of. It means that, science publication or encyclopedia or other folks. So , how do you think about this reserve?

**Charles Payne:**

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**Jo Melvin:**

The book untitled Designing Embedded Systems: Handbook + LAMP Project contain a lot of information on

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**Kendrick Mills:**

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