

## Software Engineering Case Based Learning Exercise

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You are part of the Software Engineering team at All Is Well (AIW) Pharmacy Incorporation. AIW wants to set-up an online medical store to sell a wide range of medicines. You and your team need to select the technology stack for developing the online store. Selecting the right technology stack for the given requirements is critical as it naturally has several serious consequences on the business. A choice of the wrong technology can have an adverse impact on the business. You need to decide the server and client side frameworks to use. You also need to make decisions on the programming language, database, web-server and server operating system to use. For example, should you use Ruby, Python, C# or PHP programming language? Should you use Ruby on Rails, Django or .NET framework? All Is Well want their website to be responsive and expect it to be accessed by their customers using a variety of devices such as tablets, desktops, laptops and mobile phones. They expect that 50%-60% of their traffic will come from mobile devices. AIW is looking for a solution which makes it easy for them to scale and grow gradually. The user base of the website is wide: young and old, rural as well as urban. The company does not want to own any IT infrastructure and wants to use an external cloud computing platform. An important requirement is to support all the popular browsers like Internet Explorer, Mozilla Firefox and Google Chrome. The application will receive both structured and unstructured data. The application should have its own login/authentication mechanism as well as single sign-in using social media platforms like Google+ and Facebook. Since AIW is in the domain of healthcare, data security and sensitivity is vital. Also, they intend to provide a wide variety of online payment options for their customers including credit cards, debit cards, net banking etc., but not cash on delivery. Figuring out the best technology option for the payment system is another vital decision. AIW has the prime focus toward customer satisfaction. Hence, they require an efficient and prominent customer feedback and help feature enabled through both email and telecommunication assistance. As fast medicine delivery is critical to a customer's health, providing a feature to track the medicine delivery status is much desired, which will require a decent API that can interact with the courier services portal.

*Questions:*

*Q1: What are the various parameters that will form the basis for the selection of appropriate technologies or frameworks?*

*Q2: Identify various requirement conflicts and ambiguities, along with assumptions and major constraints that may potentially impact the selection of a technology stack.*

*Q3. Enlist the pros and cons of good and bad technology selection decisions with respect to the selection parameters.*

*Q4: Justify the selection of a particular technology stack with respect to the basic SE design principles.*