As a software development professional, you will run into all kind of projects and situations within those projects. This assignment is designed to present you with a fictitious situation and ask you to recommend an approach to software development for that situation.

**Here is the situation:**

Georgia school of Arts has been the choice for higher education in the state. The college has been serving the state for last 50 years. College has mostly operated using manual processes and state has been expecting the college to match the other colleges in the country in terms of automation. College leadership also sees great benefit by automation as it hopes to keep tuition in check and provide better service to student and faculty.

**The college wants to automate most of its processes in next 5 years**. College do not have budget to shorten the timeframe and wants to do this automation mostly in-house with hired consultants when needed.

The **IT department has lot to learn in terms technology to build this system**. Also, **college leadership has some idea on what to build but not sure what exactly are college needs in terms of automatio**n. College has formed **a group from various departments of college that will help define and drive the development**. This group will work closely with IT department on this effort.

College wants to reap the benefit of automation as it is being built and **use feedback from system users to guide future automation efforts.**

The automation will start with processes that impact the students for e.g. admissions, class registration, grading, learning management system etc. Some of the **key things identified for this software are the privacy and security concerns**. College wants to make sure that **systems can't be hacked and only the right people have access to the info**.

To start with, the team working on this project consists of 5 developers, 3 QA and a Team Lead. Organization

had signed a contract with a local company to provided additional resources when needed.

**QUESTION 1**

What software development methodology would you suggest for this situation and why?

**Characteristics**

**+ Vague Requirements – *“Also, college leadership has some idea on what to build but not sure what exactly are college needs in terms of automation”***

**+ New Technology - *"The IT department has lot to learn in terms technology to build this system."***

+ **Need to deliver value early - *"College wants to reap the benefit of automation as it is being built and use feedback from system users to guide future automation efforts"***

+ **Clients or Business available to work closely with development team - *"College has formed a group from various departments of college that will help define and drive the development. This group will work closely with IT department on this effort."***

**Select a model**

+ The right model -- Agile Model

+ The right model and right variation of it which could be scrum in this case.

+ The right model and specify the right logic behind the selection:

Need to iterate due to 1) Unknown needs 2) Unknown Technology 3) Need to deliver value earlier. Since business is available to collaborate closely with development team, it validates one of the assumption before using agile methods

**V2**

The **user needs are not clear** as it has been said "Also, college leadership has some idea on what to build but not sure what exactly are college needs in terms of automation" ,we need to **deliver value earlier** as it has been said "Need to deliver value early" and **the technology is unknown** as it has been said "The IT department has lot to learn in terms technology to build this system." so we’ll need an **iterative model.** We also know that the business is available to collaborate with the development team. For a project of these characteristics we should use an agile approach. We will use Scrum.

**QUESTION 2**

For the selected model, take us through a simulated / fictitious journey on how this project will be done all the way from requirements to deployment. You are free to make up characters as you feel appropriate to fit your story.

**V1**

Due to time and money constraints, the college has some thoughts on what they need and want from the project; the time range they are looking for execution is known, so a plan and body of work may be established in advance. When it comes to model selection, being Agile will allow the team to be flexible, change methods, and design while working with the 5 developers, QAs, and, if needed, the local company supplying more resources.

To keep the link between the components vital, software coupling will need to be tight. If any inheritance is done from the existing architecture, the cohesion is also maintained.

When it comes to testing, more resources should be deployed and used; they may test the various components for feedback, detect faults, and stress test for security issues and hackable chances. This will check and push the operation/maintenance development, allowing for adjustments if necessary.

In this case, being adaptable and iterative will be crucial. As there is an idea, but it isn't filled out, initial versions may need to be developed, tested, feedback obtained, and the version revised again; this is where the additional resource might be useful and helpful.

**V2**

We will first gather the requirements. We know that they may change but we will start working with the requirements the colleague has defined at this moment. Based on the user needs we will create the user stories and put them in order of priority (the most important on the top) on the product backlog. The duration of the sprints will be 4 weeks. We’ll hold the first sprint planning meeting and choose the user stories we’re going to work on based on the duration chosen and the skills of the team. Every day we’ll hold a meeting in which every member of the team will tell what was done the day before, what will be done the current day and inform about any obstacle. At the end of each sprint we will hold a sprint review meeting to demonstrate the work completed and get feedback from the client. This is one of the requirements described on the situation: “College wants to reap the benefit of automation as it is being built and use feedback from system users to guide future automation efforts”. On the sprint retrospective meetings we will analyze the performance of the team, and identify what we could do best to implement improvements on the next sprint. This cycle (sprint) will be repeated until we finish the Project.