**Project Management Methodology. Assignment 2. Due August 5th (2.30pm) 2020. 10%**

**Individual Work – One single submission-one overall document two tasks!**

Topic: Statement of Work (SOW) Materials to be enclosed: MS Word document.

Your team got an engagement on a small project delivery. Your client is a Government Contractor & Security Clearance was needed for your team to engage on this project. However, you discover that you have issues with the testing part of your project. To resolve the issue, as a Project Manager, you are hiring a sub-contractor to perform testing.

Create an SOW. The security clearance level for the sub-contractor cannot be immediately verified. Complete answer to both tasks no more than 10 pages(10) pages MAX. Reference page is not included in the 10 pages. Pages with pictures and illustrations are included in the 10 pages. One submission attempt. So please take time to review your work before submission.

**These are your tasks for Assignment 2:**

* **Task 1 -** Determine which part(s) of your testing activity you are going to assign to the subcontractor. It can be **one or more** of the following:
* Develop test cases
* Perform functional testing
* Perform performance testing
* Perform security testing

**Justify your decision** for the tasks you have assigned to the subcontractor. You would by extension need to demonstrate knowledge of these different types of *testing* in the process. Your answer should demonstrate evidence of research and your sources need to be quoted. **(Say why you assigned these task(s))?**

* **Task 2** - Develop a customized SOW for the work that you are going to assign to the subcontractor. **Costs not needed.**

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| **Submissions:** |  |
| **Please submit one (1) MS Word document for these *two* tasks.** | |

* An MS Word document for your response to task 1 (first part of the document) and a completed - SOW for task 2
* **This process will allow for easier submission via BB as you will be submitting just one word document.**

1. Part I

Due to some unresolved issues and to follow the project timeline, our group has decided to use a sub-contractor to help us carry the project's testing process. There are various testing parts requirements and our team cannot have a sub-contractor to do all of the work due to quality control issues and work requirements. Before sending the application to the sub-contractor, our team have to analyze and identify some test cases that users will most likely to experience in the application and have it check as the top priority and mandatory. The rest can be count as an option and improve afterward.

Below is the list of testing and tasks and why our group decided it would be more efficient to have sub-contractor involve on this:

1. **Perform Function Testing**: This would be the crucial of the application. Functional Testing is expected to take a lot of time for testers to detect any application issue or problem, including hidden onces that are usually hard to detect. Functional Testing is one of the parts that customers will assess when they receive the application, including both front-end and back-end. Front-end must have a visually appealing, smooth and logical layout that relates to back-end works. In another word, every single interaction users make should receive an appropriate response from the server, or back-end. There are four aspects that our team want the sub-contractor to test on:
2. **Mainline Function**: Testing the main functionality of the system, including how back-end and database response to a particular request.
3. **Basic Usability:** Testing the UI and perform a particular task that a typical user would do, include circumstances when the user becomes comfortable finding a specific task and navigate around the application. This will check using requirement guidelines organized by our teams and approved by the project stakeholder and sponsor.
4. **Accessbility:** How convenient and user-friendly for users to access the application.
5. **Error Condition:** Test for error message display consistently includes if the context of the message is understood to the user, the error message is displayed correctly as to where needed, and the tone is not to harsh to the user.

Each of the aspects above will take at least one day for test and detect problems. In some of the case, testing one aspect can identify an issue for another aspect. As this is the central part of the application and project testing, it should be considered carefully. Once each of the aspects testings is completed, we will take the feedback, make any changes where necessary, and give it back for further testing, as some changes could solve a problem in other aspects.

1. **Perform Performance Testing**: This is an extended part of Functional Testing, where our team need a hand from the sub-contractor to help our team test on the overall performance of the application. Performance Testing includes essential evaluation such as speed and usability to advance assessment, such as resource usage and system reliability. The application should work regardless on any PC (if it is designed to use on Desktop) or any mobile (if the application is determined to use on the Mobile platform). This part usually not included in the customer requirement but contain in the customer expectation and often not considered until the customer request so. Just as Functional Testing, Performance Testing also consists of multiple testing aspects, such as:
2. **Load Testing**: determine the limitation between customer access and system handling. This is related to Mainline Testing described in Functional Testing. It is determined how slow the system will respond when multiple requests occur at the same time.
3. **Stress Testing**: determine the limitation of the application before it needs a fix or maintenance to go back to service. This will put the server to work at about 90-95% its limit and calculate how long it can handle before shutting down.
4. **Endurance Testing**: how long the application can sustain until it requires a break-point check or maintenance.
5. **Spike Testing**: this testing is acting as somebody trying to “hack” the system and see how much it can handle before shutting down. Once in a while, the testing will suddenly send a large amount of connection and request to see if the server can handle it.
6. **Volume Testing**: this will test how the system responds to a request when there is a sudden change in the database. In modern system nowadays, unless the database is enormous (more than a million record), it shouldn’t take the server too long to respond to a request.
7. **Scalability Testing**: determine the future scalability of the system to support increasing demand in the future. The business company prefers to keep their old software and have it scalable to handle larger requests and connections than building new software for it, although the new software could bring a better performance.

Each of the aspects above is crucial to the application because it determines the application reliability. These aspects are considered the final check-point for the application and will take a certain time to test it. Like Function Testing, once our group receives feedback, we will carefully determine the solution, apply the change where necessary, and send it back to the sub-contractor for further testing.

Functional Testing and Performance Testing are closely related to each other. They can also be tested at the same time. By having a sub-contractor to check our application on these aspects and have our team to fix and correct the error, this would help us to save times and money, but at the same time also allow us to maintain the quality of the work and understand any issue exist and to improve it and still able to satisfy the required standard.

As per Security Testing, our company will take care and determine this issue on our own. This is a sensitive part of any application and must be well-care before any incident could happen. If the sub-contractor know about our application too much, especially security aspect, the application might be unsecure and there is higher chance that the application is getting an attack.

1. Part II

# Statement of Work

# This Statement Of Work (SOW) is made pursuant to current agreements between Seneca College (as known as sub-contractor) and Khai Phan Corp, (as known as the main company). All commitments made under this SOW are commitments to perform obligations under the applicable Service Schedule(s) and the Agreement.

# INTRODUCTION

Khai Phan Corp. is hiring Seneca College as a sub-contractor with a role of a tester. Seneca College will receive the program and perform a necessary test determined by Khai Phan Corp, and provide any necessary feedback and recommendations.

# PURPOSE/BACKGROUND

Seneca College will provide Khai Phan Corp, with security assistance, in the form of professional services, to deliver secure coding guidelines that will help Khai Phan Corp, in the program provided. Khai Phan Corp, will be responsible for any necessary changes and send back to Seneca College for further testing.

# PROJECT OBJECTIVE

Seneca College is responsible to provide any necessary feedback, recommendation and result of testing to Khai Phan Corp,. Khai Phan Corp, will responsible to take any feedback, recommendation and result to apply and provide any changes where necessary and give the new adjustment to Seneca College for further testing and problems detect.

# SCOPE OF WORK

The professional services shall be delivered relative to following activities:

* 1. Secure coding guidelines for the following programming technologies:

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| --- | --- | --- |
| * Java | * HTML/HTML5 | |
| * Kotlin | * CSS | |
| * Angular | |  |

* 1. The guidelines will contain the following:
* Remove any unnecessary code to avoid memory leak and memory usage.
* Cross-check logical work.
* Perform Functional Testing and Performance Testing (separate details will be included).
* Identified use-case (separate details will be include).
  1. Secure System Development Lifecycle (SDLC) review:
* Provide any necessary Planning, Analysis and Design details to Seneca College as part of identify the flaws and issues. Some problem and/or issue might need to trace back to the beginning, which is when the Planning began.
  1. Knowledge transfer:
* Upon completion of the first draft, Contractor will conduct a discussion with the Company development team. This discussion will work as a knowledge transfer session, as well as the clarification of some particular items.
* This session will include understand of requirement, confirmation of details for functional and performance testing, understand use-case flows and application behaviour

# DELIVERY AND COMMUNICATION

* Testing tasks will be conducted online.
* Any common/informal communication can be done via Whatsapp group chat or similar method.
* Any information communication or tasks affect/related can be communicate via Email.
* File transfer can be done via any Cloud Drive that efficient for both company.
* Google Word Doc is recommended for any change notified and record keeping.

# TASKS, MILESTONES AND CHARGES

Costing for this project has been provided on a time-spent basis, with $xx.00 CAD per-hour basic rate. Company will also pay applicable provincial/federal taxes.

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| **Services** | **Deliverable** | **Delivery date** | **Hours** | **Cost** |
| Outsource Testing application to Seneca College (including Knowledge Transer) | Email and Cloud Drive | Sep 1st, 2020 – Sep 1st, 2020 | 10 | $250,00 |
| Seneca College perform comprehensive Functional Testing (Mainline Functional + Basic Usability) | - | Sep 2nd,2020 -Sep 2nd, 2020 | 10 | $250,00 |
| Receive and review feedback from Seneca College. Modify parts where necessary (2) | Email and Google Drive Word | Sep 3rd, 2020 – Sep 4th, 2020 | (20) | - |
| Seneca College perform comprehensive Functional Testing (Accesibility + Error Condition) | - | Sep 3rd. 2020 – Sep 3rd, 2020 | 10 | $250,00 |
| Receive and review feedback from Seneca College. Modify parts where necessary (4) | Email and Google Drive Word | Sep 4th, 2020 – Sep 7th, 2020 | (20) | - |
| Revise and review any new changes. Seneca College perform last comprehensive testing on Functional (3) + (5) | Email and Cloud Drive | Sep 8th, 2020 – Sep 8th, 2020 | 10 | $250,00 |
| Receive and review feedback from Seneca College. Modify parts where necessary (6) | Email and Google Drive Word | Sep 9th, 2020 – Sep 10th, 2020 | (20) | - |
| Seneca College perform comprehensive Performance Testing (Load + Stress + Spike + Endurance Testing) | - | Sep 9th, 2020 – Sep 11th, 2020 | 30 | $750,00 |
| Receive and review feedback from Seneca College. Modify parts where necessary (8) | Email and Google Drive Word | Sep 14th, 2020 – Sep 16th, 2020 | (30) | - |
| Seneca College perform comprehensive Performance Testing (Volume and Scalability Testing) | - | Sep 17th, 2020 – Sep 17th, 2020 | 10 | $250,00 |
| Receive and review feedback from Seneca College. Modify parts where necessary (10) | Email and Google Drive Word | Sep 18th, 2020 –Sep 18th, 2020 | (20) | - |
| Revise and review any new changes. Seneca College perform last comprehensive testing on Functional (7) + (9) + (11) | Email and Cloud Drive | Sep 21th, 2020 – Sep 22th, 2020 | 20 | $500,00 |
| Receive and review feedback from Seneca College. Modify parts where necessary (6) | Email and Google Drive Word | Sep 23th, 2020 – Sep 24th, 2020 | (20) | - |
| Final Revision and total testing for application (include Functional and Performance) | Email and Cloud Drive | Sep 25th, 2020 – Sep 28th, 2020 | 20 | $500,00 |
| Khai Phan’s Corp approval and confirm completion | Email and Cloud Drive, Google Drive Word | Sep 29th, 2020 – Sep 29th, 2020 | (5) | - |
| Testing Project Completeion | - | - | - | - |
| Total | | 12 days | 120 | $3000,00 |
| Above prices do not include applicable taxes or expenses | | | | |

* Yellow Highlight indicate process taken by Khai Phan Corp, no Delivery Date, Hour and Cost will be count toward the total Delivery Date, Hour and Cost for Seneca College.
* Contractor is available to commence project activity in the week of August 15th, 2020 (pending acceptance of this proposal).

# Payment Schedule

The Services will be billed upon completion of the work. This will be a one time payment as the sub-contractor doesn’t allow multiple payment. One the work has been evaluate, satisfied and confirmed by Khai Phan Corp, the payment will be issue in 15 days from the confirmation date.

# Agreement

**Company (Khai Phan Corp,)**

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| --- | --- |
| **Name**: | Khai Phan Thanh |
| **Signature**: | K.P |
| **Title**: | Project Manager |
| **Dated**: | August 5th, 2020 |

**Contractor (Seneca College)**

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| --- | --- |
| **Name**: | Ben Torres |
| **Signature**: | B.T |
| **Title**: | Manager, Supervisor |
| **Dated**: | August 6th, 2020 |

1. References (APA6)

Landau, P. (2020, July 02). Statement of Work: Definition & Examples. Retrieved August 03, 2020,

from <https://www.projectmanager.com/blog/statement-work-definition-examples>

Performance Testing Tutorial: What is, Types, Metrics & Example. (n.d.). Retrieved August 03, 2020,

from <https://www.guru99.com/performance-testing.html>

What is Functional Testing? Types & Examples (Complete Tutorial). (n.d.). Retrieved August 03,

2020, from <https://www.guru99.com/functional-testing.html>