**Process Model Report**

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**Introduction:**

This report describes Team 1’s selection of a software process model for its project to develop a web application that completes twitter trend analysis based on a user inputted keyword.

**Questions and Answers:**

**1.** **What primary process model does the team plan to use?**

The team has made the decision to use the agile process model because it provides us with flexibility early on, as we continue to build on our understanding of exactly what our project will require. More specifically we would like to implement the scrum process model which is a subset of agile because the team structure of the model follows the team structure we already have in place. Many of the agile and scrum models’ strengths stem from the combination of the incremental and iterative process models into one unified model. It offers the team a an incremental approach to delivering software, but in small pieces and building on each one. The scrum process model also allows us to split the group into smaller groups and use our specific skills in the case of sprints. Although the scrum process model can be criticized for the difficulty to predict schedule and cost, we will build this into our planning by carefully scheduling our sprints, so as to avoid the pitfall that the lack of upfront requirements can create. Additionally, if the flexibility can be seen as a pro and a con, we hope to mitigate the negative effects, such as the lack of accountability, by building in that accountability ourselves and being cognisant of the weakness of the scrum model.

**2.** **What secondary process model(s) does the team plan to use?**

To complement the agile process model the team had decided to implement aspects of the spiral model and waterfall implementation. We will incorporate parts of the spiral model on a very small scale. Since in the spiral model works well with minimal requirements we will use it for the smaller parts of the overall project, creating prototypes for different functions of the project and evaluating them on their own. We will not be using the waterfall on a large scale for the entire project since with that model the activity from the preceding activity defines the next activity, but we will add in a waterfall implementation by performing verification before finishing each activity. Since we our implementing the scrum process model we will also turn to some components of the extreme programming methodology, most importantly the small frequent releases. Our goal with these secondary process models is to use their components that are beneficial to our project in hopes that it will add to principles of the agile model.

**3.** **What project or team characteristics led to this decision?**

The small size of our team, and the flexibility of scheduling. As well, we were motivated by the piece-wise nature of the agile process, so we do not have to have a working prototype early on. It allows the team to work in smaller groups on separate aspects of our project. The quick turnaround motivated the use of the Agile process, as we must having a working piece of software done as soon as possible. Using this system, we can play to each other’s strengths and mitigate our weaknesses, allowing those with experience in an area to develop that section while others can work on an area more within their range. Our project does not have clearly defined requirements from the beginning, so the “define as you go” aspect of Agile is extremely useful.

**4.** **Were any other alternatives considered and rejected? If so, why?**

We originally considered the spiral process model, however it is unlikely that we will have a working prototype as quickly as the spiral process recommends. The spiral model also promotes a unified group working on the one prototype and then evolving it while we are looking to work on different aspects of our project in small groups and then coming together at the end with a finalized product. This allows us to work more efficiently and utilizing everyone’s talents instead of one person doing the brunt of the work. The last reason we ended up not choosing the spiral model is because it involves a lot of double checking and risk analysis for larger projects which we did not feel was necessary with our smaller project dealing mostly in trend analysis. The risk for our project is minimal and as such there is little need to analyze that risk.

We also considered using a waterfall model because it allows us to continuously evolve and change our idea. The biggest problem is the waterfall model is very specific in regards to only starting one portion of the project when the past section has been completed. This would not allow us to work in small groups separating the workload and allowing us to work on different sections. Another disadvantage of the Waterfall phase is that it is very difficult to go back and change the product when in the testing phase. Because of unpredictability and our learning as we go approach to the twitter API we will need to go back and change the product once we have begun testing.

**5.** **State the actual sequence of activities to be performed.**

The team has a multitude of skills which in many ways do not combine well. In order to share skills for both efficiency, expanded knowledge base and foundation and better teamwork, the team will setup workshops for skills based on preliminary project expectations.

The team will also meet realistically regularly outside work time to improve synergy on assignments.

Towards the project, the team will first compile a list of user stories to outline requirements for user expectations. The team will then split the projects based on skills into small groups. These groups will be focused on data gathering with the API, analysing the user input to make api requests, and building/designing the web platform. The team will then combine all the parts for a working web-app and then check acceptance with user expectations. The team will then return to groups and iterate pulling it together until the user stories are fully satisfied. Any final designing will then be carried out up to a final release.