**CSC3003S Capstone Project — Stage One**

Goals (Scope) [21 Marks]

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| Project Abbreviation and Name | **GFM: An enhanced Grammatical Framework minibar** |
| Client/Supervisor + email | **Zola Mahlaza, zola.mahlaza@uct.ac.za** |
| Tutor + email | **Hamza Amir, amrham001@myuct.ac.za** |
| Date | **04 August** **2023** |
| Team Members | Student Number, First and Last Name, email |
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| Overall purpose and stakeholders [5] | The project's main purpose is to develop an enhanced version of the cloud-based editor: Grammatical Framework Minibar. The grammatical framework Minibar is an implementation of FridgePoetry, a GF web application, developed by Hallgreen, Enache and Ranta. The application’s current primary functionality is to author and translate user/random text as per a specific controlled natural language using a chosen grammar file. The translation of the input text is then displayed. The core purpose of the project is to efficiently enhance Minibar by implementing the following requirements as stipulated by the client. These requirements serve as the primary features of the application.   1. **Offline functionality:** The enhanced version is to run locally, operate without any internet access and should not be part of an integrated development environment. 2. **The ability to upload their own grammar files:** Users of the enhanced system need to be able to upload their own grammar files to use when authoring text. 3. **Translate multiple sentences:** The current Minibar allows the user to translate a single sentence at a time. Once a user inputs a period, they are unable to translate another sentence. This new feature would allow users to translate multiple sentences at a time (i.e., the ability to translate paragraphs) 4. **Easy deletion of words:** Users need a simpler way of deleting words in the textbox instead of relying on the provided deletion buttons. Additionally, with the third feature being incorporated, this requirement expands to allowing easy deletion for all sentences in the case of translating multiple sentences. 5. **Predictive typing:** The user’s historical information is to be used for predictive typing. This means that as a user inputs their phrase in the minibar, the suggest next words need to be ordered based on the user’s history with the most recently used words being ordered first.   In addition to the above requirements, the project team aims to improve the usability and user experience of the application, while remaining in line with the given requirements by applying principles of design to improve aspects of the application using tools such as Norman’s 7 Principles of Design. This will allow for an improved and more user-friendly interface. These additional improvements are the secondary features of the application.  Continuously, the project’s core goal is to efficiently fulfil all client requirements by achieving a realistic balance between the predetermined scope, budget, and time of the project.  The stakeholders for this project have been identified as follows:   1. **Zola Mahlaza, Client:** Mr Mahlaza is the project team’s client. He has defined the problem at hand and provided his expected requirements and is a primary stakeholder in the project. 2. **Hamza Amir, Supervisor/Mentor:** Mr Amir has a supervisory role in the project as he mentors the project team and provides necessary guidance and assistance depending on the needs of the project team. He is a primary stakeholder in the business. 3. **Users:** These are the individuals who will use and interact with the enhanced Minibar application. Users/customers are secondary stakeholders of the project.    1. **Students/Researchers** interested in Grammatical Frameworks    2. Individuals who would like to translate text using their own controlled natural language grammars    3. People interested in learning different languages |
| SMART Goals [5] | **Functions and Features:**  1. Operation without internet  2. Swappable grammars  3. Multiple sentences  4. Easy word deletion  5. Predictive typing  **Goals:**  **Critical Goals**   1. Implement all the client’s requirements (fully functional) and produce an enhanced Minibar application within the given project timeline 2. Submit project deliverables on time and implement feedback given 3. Regularly interact with the project mentor for project checkups and guidance or assistance when needed 4. Ensure regular and consistent communication between team members through regular and fruitful meetings and make use of online platforms such as WhatsApp and Teams to keep in touch remotely.   **Additional Goals**   1. Modify existing features of the application to improve user experience and ensure that the app is in line with Norman’s 7 Principles of User Design (e.g., incorporation of better error messages) 2. Produce clear and well documented code through the use of indentation, comments, well named variables, methods and classes. |
| Inputs, outputs and performance [5] | **Input**:   1. Grammar files (.pgf) that the user chooses to upload to use custom for authoring. 2. Text/word selection to be translated   **Output**:   1. Translation of inputted/selected text 2. Text Prediction   **Performance**:   1. Efficient production of translation when user uploads their own authoring file. |
| Resources and Constraints [3] | **Challenge Factor:** Not being familiar with the coding language of the existing software. Time needs to be spent either trying to understand the code and implementing it in another language or learning the language to further enhance the existing software.  **Constraints**:   * our minibar will be implemented to work on either Linux Windows. * Scheduling meeting times that are convenient for everyone in the team. |
| Feasibility [3] | The proposed scope is feasible with regards to the client requirements, the provided resources and the given time frame. |

**APPENDIX A: Purpose and Goal of the Project**

The project's main purpose is to develop an enhanced version of the cloud-based editor: Grammatical Framework Minibar. The grammatical framework Minibar is an implementation of FridgePoetry, a GF web application, developed by Hallgreen, Enache and Ranta. The application’s current primary functionality is to author and translate user/random text as per a specific controlled natural language using a chosen grammar file. The translation of the input text is then displayed. The core purpose of the project is to efficiently enhance Minibar by implementing the following requirements as stipulated by the client. These requirements serve as the primary features of the application.

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2. **The ability to upload their own grammar files:** Users of the enhanced system need to be able to upload their own grammar files to use when authoring text.
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In addition to the above requirements, the project team aims to improve the usability and user experience of the application, while remaining in line with the given requirements by applying principles of design to improve aspects of the application using tools such as Norman’s 7 Principles of Design. This will allow for an improved and more user-friendly interface. These additional improvements are the secondary features of the application.

Continuously, the project’s core goal is to efficiently and fully fulfil all the client’s requirements by achieving a realistic balance between the predetermined scope, budget and time of the project.

The stakeholders for this project have been identified as follows:

1. **Zola** **Mahlaza, Client:** Mr Mahlaza is the project team’s client. He has defined the problem at hand and provided his expected requirements and is a primary stakeholder in the project.
2. **Hamza Amir, Supervisor/Mentor:** Mr Amir has a supervisory role in the project as he mentors the project team and provides necessary guidance and assistance depending on the needs of the project team. He is a primary stakeholder in the business.
3. **Users:** These are the individuals who will use and interact with the enhanced Minibar application. Users/customers are secondary stakeholders of the project.
   1. **Students/Researchers** interested in Grammatical Frameworks
   2. Individuals who would like to translate text using their own controlled natural language grammars
   3. People interested in learning different languages

**APPENDIX A: SMART GOALS**

**Template-ish:** Our goal is to [quantifiable objective] by [timeframe or deadline]. [Key players or teams] will accomplish this goal by [what steps you’ll take to achieve the goal]. Accomplishing this goal will [result or benefit].

1. **Implement all the client’s requirements (fully functional) and produce an enhanced Minibar application within the given project timeline**

**Goal Statement**: Our goal is to produce an enhanced minibar application by the 22nd of September by implementing all the client’s requirements. To do this, we will analyse the source code and modify it so that it incorporates the required features. Accomplishing this goal will ensure that we produce a working application to our client that meets all their requirements.

* Specific
  + produce enhanced minibar application.
* Measurable
  + implement all client requirements (fully functionally)
* Achievable
  + This will be done by understanding the existing functionality of the minibar and so that it incorporates the required features.
* Realistic
  + This will ensure that we produce a working application to our client that meets all their requirements.
* Time:
  + 22nd of September

1. **Submit project deliverables on time and implement feedback given.**

**Goal Statement**: Our goal is to submit project deliverables weekly/biweekly according to the time allocated for each deliverable and implement feedback given. To do this, we will use a Gantt Chart that allows us to keep track of all the tasks we need to do for a given sprint. We will also update the specific document a day after feedback has been given. This will ensure that we keep an updated version of our documents and product.

* Specific
  + Submit project deliverables by the given deadline dates while implementing the feedback that is given to us.
* Measurable:
  + To ensure this, we will make use of a Gantt chart to track the progress we are making and look at the deadlines we have for the next iteration.
* Achievable
  + By ensuring that we update our documents and code as soon as we get feedback.
* Realistic
  + This will ensure that we keep our product within the scope, and we keep an updated version of our documents and product.
* Time:
  + weekly/biweekly.

1. **Regularly interact with the project mentor for project checkups and guidance or assistance when needed**

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1. **Ensure regular and consistent communication between team members through regular and fruitful meetings and make use of online platforms such as WhatsApp and Teams to keep in touch remotely.**

**Goal Statement**: Our goal is to ensure effective communication between the project team members throughout the project life. To achieve this, team members will primarily use WhatsApp (through a group chat that each member will regularly keep track of) and a Teams channel to allow easy video meetings and tracking of work (mainly documentation) that the team is collaborating on. Effective communication will allow us to produce quality work in line with the client requirements and to fulfil tasks as per the planned schedule.

* Specific
  + Team members to communicate regularly and efficiently through the means available
* Measurable
  + The team is scheduled to meet/complete tasks every day at specific times. Daily communication over WhatsApp for members to give progress and keep each other updated
* Achievable
  + The platforms used (WhatsApp and Teams) are used daily in the team members’ lives so communication is seamless
* Relevant
  + The project success is dependent on good communication between team members
* Time-bound
  + Throughout the entire life of the project

1. **Modify existing features of the application to improve user experience and ensure that the app is in line with Norman’s 7 Principles of User Design (e.g., incorporation of better error messages)**

**Goal Statement**: Our goal is to improve the usability of the app by modifying existing features using principles of design by the time of app deployment. To achieve this, team members will identify usability faults and cater to these using principles of design. Modifying and improving existing features will not only improve usability but will positively impact the quality of the application.

* Specific
  + Modify/improve features/functionalities of the app outside of the client requirements to improve its usability and quality
* Measurable
  + These modifications need to occur by time of app deployment, they need to maintain the functionality of the app and should not deviate from the client’s requirements.
* Achievable
  + Team members are well aware of the principles of design and with the given time period and the non-complex modifications (e.g. adding error messages) required to improve usability, the goal is achievable.
* Relevant
  + Usability affects the application’s quality
* Time-bound
  + Until the final product or application is deployed

1. **Produce clear and well documented code using indentation, comments, well named variables, methods and classes.**

**Goal Statement**: Our goal is to ensure that the application source code is clearly documented and structured. This will be achieved by following conventions of naming element, indentation and code structure. This is important as well produced and structured code will be clearer to understand and this will enable easier collaboration between pproject team members.

* Specific
  + Application source code needs to clearly produce and well documented.
* Measurable
  + Consistent code reviews to check each other’s code quality
* Achievable
  + Team members able to review each other and offer constructive feedback
* Relevant
  + Good code quality allows for easy collaboration between members and is simpler to understand and modify if necessary
* Time-bound
  + Throughout the entire life of the product