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**Emoji Translator**

Project Plan

Application Description - as of Week 3

This application will be developed as a standalone desktop application with multiple features, everything being centred on translating and efficiently inputting emojis. It will act primarily as a message composer, which allows the user to write messages and at the same time making sure emojis are used properly, by showing the text description and an enlarged image of the emoji.

The main features of the application should be:

* A emoji recognition mechanism that automatically translates an English word into an emoji. The user should have control whether this feature is enabled, and to what extent, i.e. allowing users to choose from several suggested emojis. This is part of the “composer” feature.
* A translation mechanism that shows the text description of an emoji when one is being input. Also, the possibility for an enlarged version of the emoji should be included in the user options.
* A Text-To-Speech option intended for people with poor eyesight.

Additional features:

* A login interface, for a customized experience. Every user could store the most preferred emojis. Also the application could itself efficiently determine what the user uses most.
* An implemented machine learning algorithm that aims to discover what an emoji actually means and to remove ambiguity to some extent. This will most likely need a bigger number of messages to be copied into the application.

Technologies to be used:

* *Python*, as the main programming language
* *Pycharm*, as the development tool
* *wxPython* as the GUI Interface. This may be changed, depending on the performance.

Project Aim

* There are 3 levels on which this project will be based:

1. *The visual level* - Making sure users can distinguish and understand (to some extent) the emoji visual representations.
2. *The translation level* - Emojis have associated text representation, so the users should easily see them when an emoji is used. The inverse operation should also be possible, for example: when someone writes ‘smile’, the smiling face emoji could/should replace that word.
3. *The actual meaning level* - people are always wondering what others actually meant with a certain emoji. Different cultures have different meaning for the same emoji, so the aim of this level is to successfully find the actual meaning given the background of the reader/writer.

The Plan

***First Semester*** - starting 24th of September

*Week 1*

* Meet the project supervisor and discuss initial ideas.
* Research and think about possible application ideas to choose from:
  + What should the platform be? i.e. what OS, mobile?
  + What should the programming language(s) be?
  + What is the target audience? Is it everyone with access to Social Media?

*Week 2*

* Continue research and decide what the shape of the application should be.
* Based on this decision, start researching about the necessary frameworks, technologies and languages required to develop the application.
* Familiarize myself with the Unicode encoding/decoding, used by emojis.

*Week 3*

* Develop a standalone mini-application, that (kind of) translates an emoji into its text description as soon as it is typed:
  + Probably done in Python.
  + Very basic GUI that automatically describes the emoji using text.
  + May also do the inverse action, i.e. translate text into emojis.
  + Useful for getting used to the encoding of emojis.
  + This will act as a skeleton for the main application, should it certainly be a standalone one.
* Continue looking for possible solutions to build an browser extension to messaging apps.

*Week 4*

* Start development of the main application, taking into consideration the requirements set in the previous weeks.

*Week 5*

* Continue development.
* Research about what is needed for enlarging the target audience, specifically for disabled people.
* Start the 5-minute presentation preparation.

Week 6 is Reading Week. Continue development and work on the 5-minute presentation.

* **DELIVERABLE**: 5-minute presentation of the application (10%)

! 27th November 2018 - Week 10

*Weeks 7-10*

* Work on the Lightning Talk. And also give the talk!
* Continue development.
* Start testing the application with fake data and also possibly on real life situations.

*Weeks 11-12*

* Continue writing test cases and solving any issues that arise.

*Christmas Break - 4 weeks:*

* Keep testing and improving the application.
* Research about any additional features that would be useful for the end-users.
* Start thinking about the context of introducing Machine Learning algorithms to improve emojis’ usage.

*First Semester Exams -* 14–25 January 2019

***Second Semester*** - starting 27th of January

*Week 1*

* Use this week as safeguard in case some things go wrong and development/research is delayed by unforeseen issues.

*Week 2*

* Research about Machine Learning text mining techniques and how they can be used to help improve the user’s experience with emojis.
* Implement any new features that have been planned during the previous weeks.

*Week 3*

* Keep on testing and fixing and issues.
* Continue research about text mining techniques. Also read about how real-time data can be obtained to be able to train/test the model.
* Once research is complete, move on the development stage. This may also happen in W2 or W4, depending on the progress at the time.

*Week 4-5-6*

* Develop the text mining technique(s) that was/were studied in the previous weeks.
* The detailed plan during there 3 weeks is unknown as it depends on the findings from previous weeks and also on the development progress.
* Also, the product evaluation should begin at this point. This will probably involve end-users from different backgrounds using a version of the application.
* **DELIVERABLE**: Presentation of results (15%)

6th -20th March 2019 (Weeks six to eight of second semester)

*Week 7-8*

* Finalize any pending issues and apply final improvements where necessary.

**ALL PRACTICAL/IMPLEMENTATION WORK ON PROJECT STOPS AND WORK SUBMISSION DEADLINE -** *5pm on* ***22nd March 2019*** *(End of eight week of second semester)*

* **DELIVERABLES:** Final Report and Screencast submission deadline

5pm on 30th April 2019 (Tuesday of eleventh week of second semester)

* + Report - 30%
  + Screencast - 15%

- make tab font bigger.

- option for real size emoji - 16x16?