Analysis of User Sentiments in App Reviews
Coding Guide V4

Thank you for helping us with our study! Your show the task (called coding task) is to read user reviews from the Apple and Google Play app stores and to answer a few questions about them. This guide describes the instructions, which you should follow carefully in order to successfully conduct this task. Together with this guide you received the CADO tool, which you will use for the coding. We recommend to print this guide and use it as a reference.

Your task is to read app reviews that are assigned to you in the CADO tool one by one. For each review you will:

A. **Classify the Review**, i.e. indicate whether it contains a bug report, feature request, feedback about a feature.
B. **Identify App Features** that are mentioned in the review.
C. **Assess Sentiments** associated to each feature.

You will evaluate reviews for 3 iOS apps: AngryBirds, Evernote, TripAdvisor and 3 Android apps: PicsArt, Pinterest and Whatsapp. Before starting this task, please read the descriptions of these apps available on the following links.

- AngryBirds:  
- Evernote:  
- TripAdvisor:  
- PicsArt:  
- Pinterest:  
- Whatsapp:  

Then, follow the next steps:

1. Start the CADO tool and log-in with the credentials provided to you.
2. Fetch your coding assignments from the server as shown in figure 1. You can see then the total number of your review assignments.
3. Press the “Start with coding” button.
A review will be presented to you as shown on Figure 2. Read the review text, which includes the title and comment of the user. Make sure that you read all the text. If the review is not in English, just skip it!

### A. Classify the Review

Classify the review by indicating whether the review includes a feedback about a feature, a bug report, or a feature request, following the these instructions:

**Feedback about a feature:** the user explicitly refers to a specific existing feature of the app in the review. He might report his satisfaction, dissatisfaction with that feature, describe his experience with the feature, or simply describe what the feature does and not or how it works. Examples:
- "I love uploading pictures with the app"
- "The share link makes it so much easier to collaborate with colleagues"
- "Syncing files takes a horrible amount of time"

**Bug report:** The user reports a problem, such as a faulty behavior of the app or of a specific feature. Examples:
- "Uploading is not working with the iOS6"
- "Everytime I launch the app, it crashes"
- "After the new update, my mobile freezes after I've been using the app for a few minutes"
- "I lost all my phone contacts. Great, thank you!"

**Feature request:** The user asks for a missing feature, a missing functionality, a missing content, or a feature that should be implemented or improved. Examples:
- "It would be great if we could copy and paste text"
- "The app is slow when I am on the road. Would be nice to improve this"
- "I wish you could add a link that would allow me to share the information with my facebook friends"

You can choose more than one option for each review. In case the review includes other types of information, please write what it is. This is optional.
B. Identify App Features

Please identify all app features that are mentioned in the review. Please identify both existing app features and wished or requested features. A feature can be a description of specific app functionality visible to the user (e.g. uploading files, sending email, adding friends, follow, unfollow etc.). A feature can also be a specific screen of the app, a general quality of the app (such as time needed to load, encryption, size of storage, file types, a license, or a price) as well as specific technical characteristics (a certain technology or a specific version of a technology, e.g. a network protocol, HTML5, etc.).

Some examples from user review sentences containing features (underlined) are the following:

- **Syncing does not occur.** Files are at least a month old. If the free service is this bad then I would not trust the pay service at all.
- **This application does not work; do not waste your time on it.** First of all it will not let me **use my email** I have had 5 years, says it is taken (?). Second, "technical support" and "Contact Us" are non-existent.
- **Dropbox is great for storing files, but HORRIBLE for streaming stored music.**
- What’s up? Just updated drop box and it’s crashing every time I login!
- **Why would I be able to upload video but not download** (Note: Please add word video to the feature description) it to another device?
- Needs the ability to move **download** (Note: Please add word file to feature description) and rename files.
- **I use this app daily.** Love the **graphics.** Love the **simplicity and usability**...
You can add a feature by marking the words describing the feature in the text and right clicking on it. You can also copy/paste the text or simply type the feature in the feature description text field. In case you decide to type please use the same vocabulary used in the review text and do not make your own abstractions from the text. For example, in the sentence:

- There is a lack of OpenDocument format support for saving my notes.

Do not write as a feature label: compatible format support, but rather choose as feature label: OpenDocument format support

**NOTE.** Some features can also be described by several words, which might be continuous or not. In this case please add all the words into the text field for the feature description. Please write only one feature on each text field. For example, if the review includes:

- Synch my notes, photos and documents easily.

Add of the following features into the text field:

- Synch notes
- Synch photos
- Synch documents

**C. Assess Sentiments**

Give a sentiment score for each feature that is mentioned in the review and that you have identified. Note: this score does not have to be the same as the star rating in the review. There are 5 scores which range from very negative to very positive:

**Very negative:** The review text is very negative about the feature typically using superlatives and verbose description. In this case the user might use words like “hate” or “scrap”. They can also get insulting. Examples:
- I hate the upload functionality from Dropbox
- Also you can't rename files. What the heck?

**Negative features:** The review text is rather negative but not extreme. Examples:
- Don't like the upload functionality from Dropbox
- The app is useless until you fix the syncing problem

**Neutral:** The review text is neutral (neither positive nor negative)
- Dropbox lets me upload my files
- Need to be able to link my documents.

**Positive:** The review text is rather positive but not very enthusiastic. Examples:
- I like that dropbox lets me upload my files.
- Now the app works as expected.

**Very positive:** The review text is very positive, usually using words like “love”, “great” or superlatives like “best”, “most”. Examples:
- I love that dropbox lets me upload my files!
• Best app ever!
• If you do not own this app, your life must be so much tougher.

**NOTE:** In case a feature is mentioned more than one time in a review, added as often as it is mentioned and assign it a sentiment for each time it appears in the review.

In order to continue evaluating the next review, press the “Next” button. If you wish to quit the evaluation session click the “Finish” button. The next time you start the tool your session will start where you left it the last time you were using the tool.

Once you finish all your assignments please upload your work to the server “Push my codings”.

**Note on hotkeys:** There are some hotkeys implemented in CADO. In case you want to classify a review, use the numbers “1” (feedback about feature), “2” (bug report), “3” (feature request) and 4 (other). If you want to add a feature type “a”. You need to be situated in the user review text box to be able to use the hotkeys (see Figure 2).

If you have any questions about the evaluation, please contact us via mail at: emitza.guzman@mytum.de or skype: emitza_guzman