Project Proposal: Lowdown

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Executive Summary

How well do you really know your friends? Lowdown seeks to answer that question in a social, lighthearted manner. Lowdown is a quiz application that allows users to take intuitively-generated quizzes in order to gauge their knowledge about a specific friend or acquaintance. Lowdown works by analyzing a friend's statuses, posts, and pictures, and generating a quiz tailored specifically to that friend's profile. Sample questions include: "What would I say," "What is my favorite color shirt to wear," and "Where is my favorite place to visit," among others. After taking the quiz, users then have the option to share their score with said friend, compete against others by sharing their score to a mutual friend's wall, or keep it to themselves as a personal metric. Lowdown differs from other quiz-like applications in that it generates all questions on the fly, and makes use of machine-learning algorithms to do so. We believe that users will learn more about their Facebook friends than ever before, and will have fun in the process.

Description of the Project

Lowdown is a Facebook app that tests users' knowledge of their friends. It will use data visible to a user to generate a variety of customized quiz questions, some of which are described below. After completion of the quiz, the user will have the option of posting the result to the friend's timeline or messaging it privately, which will encourage the social spread of the product.

Side Note: The advantage of a quiz-type project is that more question types can be added, and different APIs or technologies can be integrated into specific questions to make them more interesting and engaging for users.

Terminology

User refers to the person taking the quiz. The user must accept the app's request for permission to see all photos, statuses, friends and their information, and possibly more.

Friend refers to the person who is the subject of the quiz. A single user may take a quiz about any of his/her friends.

A **quiz** is a set of questions randomly generated each time a user picks a friend to test his/her knowledge on. Therefore, two quizzes about the same user-friend pair may be different. In addition, a user can use the quiz app multiple times, as a new quiz will be generated every time the user interacts with our application.

Sample Quiz Questions

What would I say?

This is a multiple-choice question where three options are real user statuses or posts, whereas the fourth is randomly generated based on a Markov model of the friend's statuses and private messages to the app user, if accessible. The user has to guess which one is not a real status: they have to pick the Markov-generated status to get this question correct. A related question we could ask could be "What is my favorite word?"

What would I wear?

Using facial recognition technology, the app will attempt to develop a profile of the shirts (or other top) that the friend wears, and then quiz the user on what color top the friend is most likely to wear. A similar question we could ask is "what color would I most likely wear?"

Where have I been?

Using location data from the friend, the user will need to pick out the location from a set of 4 that the friend has not been tagged in. Clearly this could be incorrect if the friend has visited the location without tagging themselves, but the quiz can only work with the data it has. The fake location will be chosen from a corpus of locations around the world; if the user has been to all then this question type will not be used. There is a technical challenge in making sure that the system recognizes that a user that has visited the "Eiffel Tower" has been to "Paris, France". This question type also could allow for integration with the Google Maps API to display locations visually.

What's the Caption?

A photo that is given a caption is shown, and four captions the friend has given to pictures (including the caption for this picture) are given as options. The user must select the correct caption. The incorrect captions ideally would be pulled from similar pictures, however we might choose them randomly if time becomes a problem.

What's the Incorrect Comment?

A post or picture is shown, as well as three of its comments and one fake comment randomly generated from all comments on the friend's profile. The user must select the fake comment.

Where am I?

A picture is shown and the user must select the location of where it was taken. Locations will be generated based on options from other pictures. Locations will also be selected from users' vacation photos, i.e. photos that not from the user's hometown or surrounding areas.

What about me?

Basic demographic questions about the friend: where they went to school, where they live, their birthday, etc. We hope to make these questions more robust in order to give users a challenge; however, some of these questions might be on the easier side.

What do I like?

The user selects the page (out of 4) that the friend does not “like”. This also could extend to restaurants / places the user has checked into frequently. The pages that the friend does not like are taken from the list of 500 most popular pages on Facebook.

Need for the Product

Social games are a great area because they spread quickly when they are well-designed and well-liked, since they involve direct communication between people. Lowdown benefits especially since the nature of the game is social, whereas other games are “artificially” made to be social by adding in an element of competition. We believe that a need exists for Lowdown because people are always seeking to get to know one another better, and our app allows for this in a natural humorous way.

Potential Audience

This type of game would likely reach a high school and college demographic first, especially because of how well-connected these groups are. However, it could be of interest to anyone that has friends that are active on Facebook, since many questions require a high volume of activity. We envision as Lowdown gains popularity, it will spread to other segments of the population as well.

The audience will not need any technical background since the UI will be as simple as Facebook itself. Since Facebook has 864 million daily active users, that is the maximum potential reach of the app [1].

Discussion of Competing Products

In general, existing quiz applications either fall into the category of pre-made, generalized questions or questions generated by the user. Both approaches are limited in scope, which makes Lowdown a preferable alternative application. Examples of existing substandard quiz applications include:

- Quibblo: Quibblo quizzes have an intuitive UI, but are lacking in the fact that users have to make their own questions on the website, and then have the option of posting to Facebook.
- Buzzfeed “How well do you know your best friend?” quizzes: These quizzes are generic, checkbox-like quizzes that ask you to tick off things that apply to yourself. They require absolutely no backend processing whatsoever, and therefore are inferior to Lowdown.

Major Technologies Used

Development Language and Modules

We plan on using Django as a backend for our application, and programming most of the AI-related analysis in Python. In addition, we plan to make use of the Scikit-learn module for classification in conjunction with OpenCV for picture processing. Finally, to make our application compatible with Facebook, we will be working with PHP and Facebook's API to make our app's UI. Our server will be hosted on a Google App Engine instance for ease of development.

Some add-ons we plan to do are to integrate with the Google Maps API for picture and location tagging, and potentially with the Yelp API for figuring out places the user's friend frequents to better generate questions about them. We also hope to experiment with and use several different machine learning algorithms to create better questions about a user's friends.

Resource Requirements

Database/Storage

No database would be necessary in a simple implementation, since no user data is stored after the quiz is completed. However, in a slightly more advanced version, a database could be used for logging and storing quiz completion results.

Potential Approaches

The problem area that we are dealing with is the desire for friends / acquaintances to get to know each other better. While people have conversations with one another on a day-to-day basis, we hope that our application will reveal things to users about their friends that they didn't know before. For example, it would be potentially beneficial for a user to know that their friend likes to wear the color blue, as that information could help the user pick out a better gift when the time arises. In addition, it could help remind users to spend more time with a given person, as it is not necessary for them to post their results to a friend's wall, but rather keep them private.

There are many different approaches to solving this problem area. The age-old technique of getting to know someone better was spending more time with them and having conversations about their life experiences. However, with the rise of technology, people have resorted to viewing a synopsis of their friends' lives online instead, a much more convenient solution to the traditional getting-to-know-you tactics. Lowdown's method is also based in literature: a study by Mcdaniel et al. (2007) found that people retain more information if they are quizzed on it first instead of memorizing straight facts [2]. Overall, Lowdown seeks to consolidate the

plethora of online data to make the process of getting to know one another much more efficient.

Assessment of Risks

We identify both risks of development and the risks caused by a negative user perception of the product.

Developer Risks

Complete Dependence on Facebook Environment

Although the Facebook developer environment should be relatively stable, Lowdown is still completely dependent on Facebook for its existence. The company could, at any time, change rules or policies, or ban the application outright. Further, the API could change and force Lowdown to update code to stay current.

User Risks

Privacy

As with any social media application/service, there is always a risk that the product is perceived as invasive of personal privacy. Since the app needs to request all posts and pictures (including those of friends), it could be viewed as trying to steal those pictures. To avoid problems, Lowdown will request as few permissions as possible, and potentially include messaging that makes it clear that the data is only used during the quiz and never stored afterwards.

Exposing too much old Information

Since the app would show posts from any point in time from a user's profile, there may be discomfort at the thought of "stalking" someone or being stalked by someone. Since the app could post on a user's wall without his/her permission if his/her friend takes a quiz, they would realize that the app has been able to see his/her full profile.

Spam

Since the app posts on other user's walls, it could be seen as being a source of spam/clickbait. To counter this, Lowdown will ask users to customize the post message so that it looks much more personalized. In addition, Lowdown will not use clickbait-esque wording to spread the application.

Next Steps

Each step is listed with its projected deadline.

Projected Deadline	Proposed Task
Friday, 1/16	Create a Facebook quiz that asks the user to input their own name.
Tuesday, 1/20	Query the user for the name of a friend and print out basic information about the friend
Monday, 2/1	Develop simple question types (demographic information, page likes, picture captions)
Sunday, 2/15	Develop complex question types including ones requiring the use of randomized information
Sunday, 2/22	Final UI polish
Sunday, 3/1	Testing

Works Cited

[1] Company Info. Facebook. http://newsroom.fb.com/company-info/. Accessed 12 January 2015.

[2] Mcdaniel, Mark A., Henry L. Roediger, and Kathleen B. Mcdermott. "Generalizing Test-enhanced Learning from the Laboratory to the Classroom." Psychonomic Bulletin & Review 14.2 (2007): 200-06. Web.