Berk Yıldız 21502040 Section 2

CS453 – Application Lifecycle Management – Homework 3

1. **Why would its potential users require a tool like Perceval in order to analyze the software development life-cycle of a project? What are its benefits?**

   Potential users can reach some relevant information of history of a software project by using a tool like Perceval. This relevant information can be about contributors, pull requests, commits, issues or development velocity of the software project. It can be difficult and inefficient to gather this kind of data manually or by using traditional methods. However Perceval directly speeds up the process and provide processable accurate data which can connect the results with analysis and visualization tools. Visualization is always better for understanding the trend of data. Also it is an advantage for Perceval to work in harmony with many platforms like Git, Github, Gerrit etc. Data obtained can be used for academic researches or business purposes by the potential users. In business side, problems on lifecycle of a software project can be identified by data from Perceval. The person who leads the project can understand the problems earlier and can develop solutions before the problem grows. Even if there is no problem, lead of the project can give decisions that can improve the processes in lifecycle of the project by data obtained. So, a tool like Perceval provides chance for potential users to act according the actual data instead of their intuitions.

2. **How would you justify Perceval using only the JSON format for the data that it retrieves? What connections do you observe in the creator's approach to data retrieval that is similar to the integrated approach of Tasktop from your first homework assignment?**

   JSON is a very handy and flexible format for handling data and it has advantages like being lightweight, fast and easy to read. It totally makes sense to use JSON format for data retrievals. Also it is a well-known format for the people who have CS background. However processing data from JSON can be complicated in some aspects for the potential users who do not have CS background because even it is not, JSON can be understood as a programming language because of its appearance. Also the user may not like to work with JSON and prefer XML even he/she knows JSON. So having alternatives is always better in business. Dictating these kinds of things today is not a popular method. It would be better if Perceval presents different formats for

the data especially for the people who do not have CS background and mostly work on Excel.

Data retrieval was mostly about providing and improving traceability for the lifecycle in the integrated approach of TaskTop. For example there were features like ‘code commit to requirement traceability’, ‘code deployment to change request traceability’ or ‘code scan to defect traceability’ in TaskTop. Also Perceval is able to fetch data about commits or issues. When we look at it from a general window, it is possible to see that what Perceval does also serves to provide and improve traceability because aim of the Perceval is also analyzing data for making further predictions and improving the process. So these two products have connection in terms of improving traceability and they both serve for it.

3. **Find a software repository that is backed by an open-source community from GitHub.**

   Link to the URL: *https://github.com/chaoss/grimoirelab-perceval.git*

```
berkyildiz@berkyildiz-VirtualBox:~/Desktop/perceval$ python3 question3.py
Number of commits in past three months:  67
Number of total commits:  1585
Date of first commit:  Tue Aug 18 18:08:27 2015 +0200
Date of last commit:  Fri Apr 3 19:15:55 2020 +0200
Number of days between last and first commits:  1690 days, 1:07:28
Number of contributors:  32
Contributors:  ['Santiago Dueñas <sduenas@bitergia.com>', 'Alvaro del Castillo <acs@bitergia.com>', 'Jesus M. Gonzalez-Barahona <jgb@gsyc.es>'
, 'Alberto Martín <alberto.martin@bitergia.com>', 'camillem <camillem@users.noreply.github.com>', 'quan <zhquan7@gmail.com>', 'J. Manrique Lop
ez de la Fuente <jsmanrique@bitergia.com>', 'Luis Cañas Díaz <lcanas@bitergia.com>', 'Stephan Barth <stephan.barth@gmail.com>', 'valerio cosen
tino <valcos@bitergia.com>', 'Valerio Cosentino <valcos@bitergia.com>', 'valerio <valerio.cosentino@gmail.com>', 'David Pose Fernández <dpose@
bitergia.com>', 'David Esler <drumandstrum@gmail.com>', 'david <david@starlab.io>', 'Israel Herraiz <israel.herraiz@bbvadata.com>', 'Miguel Án
gel Fernández <mafesan@bitergia.com>', 'anveshc05 <anveshc10047@gmail.com>', 'Prabhat <prabhatsharma7298@gmail.com>', 'Fil Maj <maj.fil@gmail.
com>', 'MalloZup <dmaiocchi@suse.com>', 'Gregorio Robles <grex@gsyc.urjc.es>', 'Maurizio Pillitu <maoo@apache.org>', 'Lukasz Gryglicki <lukasz
gryglicki@o2.pl>', 'Harshal Mittal <harshalmittal4@gmail.com>', 'Venu Vardhan Reddy Tekula <venuvardhanreddytekula8@gmail.com>', 'Aniruddha Ka
rajgi <akarajgi0@gmail.com>', 'Cedric Williams <cewilliams@paypal.com>', 'JJMerchante <jj.merchante@gmail.com>', 'Victor Morales <victor.moral
es@intel.com>', 'animesh <animuz111@gmail.com>', 'Animesh Kumar <animuz111@gmail.com>']
```

4. **Find the person with the most commits in this repository, report her profile name and number of commits.**

```
berkyildiz@berkyildiz-VirtualBox:~/Desktop/perceval$ python3 question4.py
Person with most commits and number of commits:  [('Santiago Dueñas <sduenas@bitergia.com>', 894)]
```

5. **Find the season with the most number of commits for this repository during the last years.**

```
berkyildiz@berkyildiz-VirtualBox:~/Desktop/perceval$ python3 question5.py
Number of commits in summer:  85
Number of commits in fall:  124
Number of commits in winter:  54
Number of commits in spring 2020:  13
Number of commits in spring 2019:  39
Number of commits in spring (last 365 days):  52
Season with most number of commits: Fall, Number of commits:  124
```