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**Задание №1:**

* What characterizes science?

Науку характеризует точность описания изучаемого предмета, постоянное обновление и систематизация фактов, критический анализ.

Science is characterized by the accuracy of the description of the subject, constant updating and systematization of facts, critical analysis.

* What is not science?

Наукой нельзя назвать то, что имеет размытое определение и не однозначное толкование.

Science cannot be called something that has a vague definition and not an unambiguous interpretation.

* How can aspiring researcher achieve scientific progress?

Начинающий исследователь может достичь научного прогресса изучая накопленные знания и общаясь с учёными и обучаясь у них.

A novice researcher can make scientific progress by studying and communicating with scientists and learning from them.

**Paradigm** - is a set of generally accepted scientific fundamental concepts

Парадигма — это набор общепринятых научных фундаментальных понятий

**paradigm shift** - is a change in basic concepts within the framework of science theory

Смена парадигмы — это изменение базовых понятий в рамках теории науки

**limits of science** – is the technological and scientific level of possible human knowledge.

Пределы науки — это технологический и научный уровень возможных познаний человека.

**value judgment** - is a judgment about the correctness or incorrectness of something in comparison with something or relative to something.

Оценочное суждение — это суждение о правильности или неправильности чего-либо в сравнении с чем-то или относительно чего-то.

**scientific method** – is a system of principles and methods of justification that guide the scientific community.

Научный метод — это система принципов и методов обоснования, которыми руководствуется в своей деятельности научное сообщество.

**Pseudoscience** - is an activity presented by supporters as scientific, but not scientific.

Псевдонаука – деятельность, представляемая сторонниками как научная, но таковой не являющейся.

**scientific evidence** - a combination of ways to gain new knowledge and methods of solving problems within a science.

Научное доказательство – совокупность способов получения новых знаний и методов решения задач в рамках какой-либо науки.

**scientific controversy** - is significant disagreements between scientists.

Научные споры – существенные разногласия между учёными.

**unbiased assessment** - is an assessment based on objective evidence and facts.

Объективная оценка – это оценка, основанная на объективных доказательствах и фактах.

**replication of studies** - is a re-examination aimed at determining whether the findings of the original study can be summarized and extended to other circumstances.

Репликация исследований – это повторное исследование, цель которого заключается в том, чтобы определить, могут ли выводы оригинального исследования быть обобщены и распространены на другие обстоятельства.

**Задание №2:**

**A.**

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| --- | --- |
| POSITIVIST approach | CONSTRUCTIONIST approach |
| Facts can have an objective reality. | Facts are subjective constructs. |
| Data validity and reliability are sought. | Reliability and validity are irrelevant concepts since the data are not judged in terms of any external notion of truth. |
| Understanding is emergent and explanation can emerge after data are collected. | Hypotheses should be explicit and pre-date data collection. |
| Prediction is an objective. Falsification of hypotheses is an objective | Description is an objective. Usefulness of interpretation is an objective. |

**B.**

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| --- | --- | --- |
| **Title** Containerized A/B Testing | | |
| **Subject** K.6.3 [Management of Computing and Information Systems]: Software Management—Software selection;  H.5.2[Information Interfaces and Presentation]: User Interfaces—Evaluation/methodology;  D.2.9 [Software Engineering]: Management—Software Management | | |
| **Scientific field** Software Quality Analysis with Monitoring | | |
| **Criteria** | **Indication** | **Example** |
| Is the scientific method used? | Yes | For our research we created two versions of a simple website with different title and headlines clearly indicating which version we are looking at using our web browser. Both versions have a link. |
| Are hypotheses  -constructed  -carefully tested? |  | We propose an approach for A/B testing of web applications in Docker containerized way. This approach takes advantage of Docker, Nginx server, ELK stack and GrayLog. We have developed a script for controlling the A/B testing. This script is written in Python.  We have developed an approach and related tools for executing A/B testing in Docker containerized environment. Our proof of concept implementation is working and has fulfilled our expectations but there is a lot of work to do and a numerous of choices to make before it becomes production ready. One of our goals were to keep the stack and the implementation simple to leverage the understanding of the conception. |
| Are any mechanisms proposed that explain the phenomenon? | Visitor behaviour | As visitors are served either the control or variation, their engagement with each experience is measured and collected. It can be determined whether changing the experience had a positive, negative, or no effect on visitor behavior from the collected info. |
| Did statistical methods and analyses provide  - evidence of patterns or estimates of certainty  or  -is the idea presented as dogma and unchangeable? | Statistical methods and analysis in the article prove the possibility of using docker containers for a/b testing | A/B testing is a powerful method to improve software quality and user experience. It gains feedback from two akin versions of the same product (software, search ad, newsletter email, etc.) and it measures the end-user engagement |
| Were alternative explanations considered and evaluated? | Scalability of the model is considered | Of course, when it comes down to scalability, we have to use DockerSwarm or Kubernetes client libraries, etc for managing version replacement on a multi-host system. |
| Your commentary   * Conclusion * How useful is it for your research * Other matters | This article shows the wide possibilities of containerization in the field of software testing. |  |

**Задание №3:**

**A.**

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| --- | --- | --- |
| **Title** Containerized A/B Testing | | |
| **Subject** K.6.3 [Management of Computing and Information Systems]: Software Management—Software selection;  H.5.2[Information Interfaces and Presentation]: User Interfaces—Evaluation/methodology;  D.2.9 [Software Engineering]: Management—Software Management | | |
| **Scientific field** Software Quality Analysis with Monitoring | | |
| **Criteria** | **Indication** | **Example** |
| Been published in a scholarly journal (Is the journal in which you found the article describe itself as a peer-reviewed publication?) | No |  |
| More than 10 pages in length | 8 pages |  |
| An abstract (summary) on the first page | Yes |  |
| Citations throughout and a reference list at the end | No, only references. |  |
| Credentialed authors, usually affiliated with a research university | Yes | AD ́AM R ́EV ́ESZ and NORBERT PATAKI, E ̈otv ̈os Lor ́and University, Faculty of Informatics |
| Is the topic of the article narrowly focused and explored in depth? | Article narrowly focused on A/B testing and docker containers | In this paper we deal with a new approach for A/B testing via Docker containers. |
| Is the article based on either original research or authorities in the field (as opposed to personal opinion)? | It’s original research |  |
| Is the article divided into sections with headings such as those listed below? | Introduction and Conclusion |  |
| Is the research sound and evidenced? | Yes | Our proof of concept implementation is working and has fulfilled our expectations but there is a lot of work to do and a numerous of choices to make before it becomes production ready. |
| Does it help to expand or further research in this subject area? | Yes | There are great configuration management software toolslike Puppet or Chef [Spinellis 2012]. Of course, when it comes down to scalability, we have to use DockerSwarm or Kubernetes client libraries, etc for managing version replacement on a multi-host system. |

**B. Does the peer-review process slow down advances in scientific knowledge?**

Да, процесс рецензирования замедляет прогресс, но при этом он повышает качество получаемых научных знаний. Например, рецензирование научной статьи позволяет оценить её с разных сторон разными людьми, выявить недостатки исследования и отсеять псевдонаучные работы.

Yes, the peer review process slows down progress, but it improves the quality of scientific knowledge. For example, the review of a scientific article allows to evaluate it from different angles by different people, to identify the shortcomings of the study and to weed out pseudo-scientific works.