Work Item: Showcasing UA Readiness and Conducting Bug Reporting with Programming Languages

Ver.: 2021-08-09

Purpose

This work aims to develop, test and publish functional minimal running prototypes to demonstrate UA readiness on the prioritized technology stacks. The purpose is to demonstrate UA readiness to developers to persuade them to adopt this practice.

- Group proposing the work item: UA Technology WG
- Reference to the Action plan: FY22
- Reference to work item(s): T2

Description of Work

A. The work is to develop minimal viable products (MVPs) for the following programming languages using the libraries specified, as example code and best practice for developers to follow in their own work. The MVP will demonstrate how to get UA-compliant results from these libraries (see UASG018A) where possible, and demonstrate workarounds to achieve UA compliance where necessary.

The sample code should demonstrate how to implement complete UA readiness, covering all the applicable categories:

i.   ASCII Domain names (with new and longer ASCII top-level domains)
ii. Internationalized domain names (IDNs)
iii. Internationalized email addresses, with domain name part either in ASCII format or IDN
iv. Use of latest available set of top-level domains (TLDs), as TLDs may be added and removed over time.

Software code is to be developed for each programming language demonstrating the use of each library to implement applicable cases of UA readiness properly. The code samples should address UA readiness based on the UA Readiness Framework (UASG026) and test cases available (UASG004 and UASG004A).

1. Java
   a. commons-validator
   b. guava
   c. icu
   d. jakartamail
2. Java Script

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        a.   nodemailer

        b.   idna-uts46

        c.   validator

3. Python3
    a. idna (https://pypi.org/project/idna/)
    b. email-validator (https://pypi.org/project/email-validator/)
    c. smtplib (https://docs.python.org/3/library/smtplib.html)

The operating system being used and the sample application(s) being developed should be suggested in the proposal. Also, the sequence of UA related functions which will be implemented in the application for each of the library should be provided in the proposal. See also training materials programming and EAI as examples.

For libraries which make UA-compliance "very hard" to achieve, the challenges should be documented.

B. For the non-UA-compliant libraries, bug reports should be filed using the examples developed to address their UA readiness shortcomings.

Deliverables

1. Code of an application (MVP) for each library on how it should be used to completely support UA. A library for managing domain names could be paired with a library which processes emails in a single MVP. The code should be put in GitHub repository.
2. A report capturing relevant code snippets and explaining them to show how to program for UA readiness for each library.
3. A PowerPoint presentation (using the UASG template to be provided) based on the report in point 2 above.
4. Submission of bug reports to the non-UA-compliant libraries on their respective platforms, with responses to any follow-up questions by the library developers.
5. Summary report on the bug reports filed and and additional relevant details.

Timeline

- Tentative start date: As suggested here.
- Tentative end date: Four months after contract signing.

History (if any)

This work develops on top of existing work on finding gaps in programming languages (UASG018A).

Proposal Submission

The proposal should be submitted to: UAProgram@icann.org before the submission due date. The proposal should include the relevant expertise and experience of the contractor, the proposed methodology for conducting the study, an overall plan of work and the intermediate and final deliverables. The proposal should also include the total project cost.

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Conflict of Interest

To help avoid any perceived or actual conflict of interest (COI), UASG leaders, UASG Ambassadors, members holding working group's leadership positions in the UASG, and any organization(s) affiliated with individuals in these UASG roles, are prohibited from participating in the SOW. In addition, ICANN org COI applies.

References and Resources

The contractor should review the UASG published documents inventory available in the UASG website: www.uasg.tech.

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