swMATH - SWH SPECS

https://hedgedoc.softwareheritage.org/fc4e-wp6-t6-3-specs-template?edit

Component	*swMATH software metadata aggregator*
Category	***RSAC***
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Version	
Data	

Overview

Develop API and connectors between aggregators and Software Heritage to support archival, reference, description and citation as follows: extract references to software from research articles and trigger archival of source code known to aggregators and missing in Software Heritage, expose the corresponding SWHID in the software artifact record maintained by the aggregator, deposit and retrieve metadata for the software artifacts in Software Heritage, deposit and/or retrieve preferred citation information for the software artifacts in Software Heritage; export citation information in one or more of the common open citation formats (BibLaTeX, CSL, codemeta.json). Integrate and showcase the above into operational infrastructures that are used by research communities, and notably: swMath and OpenAire.

Objectives

#	*Short description*
1	*Archive: extract references to software from research articles and trigger archival of source code known to swMATH*
2	*Reference: expose the corresponding origin (url) and SWHID*
3	*Describe: deposit and retrieve metadata for the software artifacts in Software Heritage*
4	*Cite: deposit and/or retrieve preferred citation information for the software artifacts in Software Heritage; export citation information in one or more of the common open citation formats (BibLaTeX, CSL, codemeta.json)*

Out of Scope

#	*Short description*
1	
2	

Requirements

User stories

#	Description of the user story	Reference
1	As a scholar I can trigger an archival request in SWH so that the software in the record is safely archived.	A1
2	As a scholar, I can find a specific software referenced on swMath and the URL link containing the SWHID so that I can find the source code on SHW	R1
3	As a scholar, I can find for a given software on SWH the research articles citing it coming from the swMath database.	R2
4	As a scholar, I can connect on swMATH platform, look for a software description and find on SWH the repository with the same description so that I know what the software source code is about.	D1
5	As a scholar, I can find research mathematical software on swMATH and its associated metadata, so that I can download the metadata in a BibTex or Codemeta format and use it for citation in my work.	C1

User requirements

#	Short description	Priority	Feasibility	Reference
1	We assume that the user searches for open source mathematical software. He identifies the software on swMATH catalog, finds the archived source code on SWH even if the current version is no longer available.	H	5	

- Priority: H=High, M=Medium, L=Low
- Feasibility: marking between 1 - 5, 5 is easy to implement and 1 is very difficult

Functional requirements

#	Short description	Priority	Reference
1	Enrich SWH with software descriptions, research articles citing these softwareS, authors, ids and other metadata from the swMATH database	M	
2	Trigger archival on SWH platforme for software artifact URL	H	
3	Display a URL link on swMATH containing the SWHID bringing to the mathematical archive on SWH platform	H	

Functional requirements			
4	Deploy a functionality to let the user download the metadata of a software in a BibTex or Codemeta format	M	

- Priority: H=High, M=Medium, L=Low

Non-functional requirements			
#	Short description	Priority	Reference
1	Build a documentation of the service	M	
2	Write a guideline	L	
3	Legal aspects (Data transfer agreements, SLA, zbMATH Open data legacy... etc.)	H	
4	Tutorials for users	L	

- Priority: H=High, M=Medium, L=Low

Specifications

Architectural design
See diagram designed in August 2022 during the zbMATH Open - SHW meeting This diagram is inspired from the push and pull workflow proposed in the SIRS report. See annexe A: Aggregator's workflow

Functional specifications			
#	Short description	Priority	Reference
1	Create a script to trigger archival using search API of SWH	H	https://docs.softwareheritage.org/devel/swh-search/index.html#swh-search /api/1/origins/ /api/1/origin/save /api/1/origin/save/webhook/
2	Create new front end features for the swMATH website to display link to the SWH software repository	H	h
3	Create an API to enrich with software metadata (descriptions, articles citing the softwares, swMATH id, etc...)	H	

Functional specifications			
4	Identify URL and verify if most recent version is in SWH	H	/api/1/release/ /api/1/snapshot/
5	Use SWH API's save endpoint	H	/api/1/origin/save/
6	Use SWH API's webhook endpoint	M	/api/1/origin/save/webhook/gitlab/

- Priority: H=High, M=Medium, L=Low

Service specifications			
#	Short description	Priority	Reference
1	User support: update reviewer guide with information about SWH	[H|M|L]	<JIRA issue number> or <URL to external reference> https://zbmath.org/reviewer-service/
2	update FAQ with SWH transfer information	L	https://zbmath.org/frequently-asked-questions/
3	establish SLA	L	

- Priority: H=High, M=Medium, L=Low

Operational specifications			
#	Short description	Priority	Reference
1	Deployment in production: We will use MediaWiki as a software platform.	H	
2	Admin to contact for the service developed by zbMATH Open: edititor@zbmath.org	L	
3	Monitoring of logs of the deployed service	M	

- Priority: H=High, M=Medium, L=Low

Integration with EOSC Core components			
#	Short description	Priority	Reference

Integration with EOSC Core components			
1	*FIZ will deploy this services such they can be integrated with EOSC Core components like OpenAIRE, Datacite and Dagstuhl*	*M*	

- Priority: H=High, M=Medium, L=Low

External references

External references - subcomponent name		
#	*Short description*	*Reference*
1	*<Provide a short description of external reference>*	
…		

External references - SWH		
#	*Short description*	*Reference*
1	*<Provide a short description of external reference>*	
…		

Annexe

Annexe A: Aggregator's workflow

Deposit workflow for the task 6.3

During a meeting in August 2022, zbMATH Open and SWH codesigned this workflow based on both Pull and Push models: