
Søknadstype

Velg søknadstype

Søknadstype	Innsatsområder
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Innsatsområder	-
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Prosjekt

Beskriv prosjektet

Prosjekttittel	ARK4-User Platform
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Mål for prosjektet	ARK4 An interactive heritage library, phase 2
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ABSTRACT: Ark4 is a two year project initiated by the NTNU University library in 2014 as a heritage library for young users, that is an interactive knowledge platform where the user is invited to seek knowledge playing with a digital tool. The project involves 4 Institutions that have been working with dissemination of knowledge from the past and collaborated for the first time in ARK4 to use emerging technology and create a new software for interactive workshops. As the first year is completed and a prototype has been developed we apply here in a second round for completing a web platform of wider reach where we will be targeting on web browsers of open source to reach a wider public. This a new dissemination path for the libraries where an Institution of repository becomes an active mediator of knowledge from the collections of different institutions using a workshop concept that is developed through a common software tool and can be adapted to the needs of the collaborators.

We apply thus for 200.000 NOK as a respond to the call of the National Library of Norway of exploring new dissemination paths for libraries.

Prosjektbeskrivelse

ARK4 An interactive heritage library, phase 2

INTRODUCTION: Ark4 is cooperation between 4 Institutions of Trondheim and a research center in

Athens, Greece. The purpose of the project was to create a dialogue between the common user and the institutions involved. The University library of Trondheim has only communicated with researchers, academics and university students up to now, but since 2012 has been exploring new areas of user projects through international collaborations as MUBIL and ARK4. Thus a new path has been opened for school students to learn about the collections the library has and the knowledge hidden in them. Together with the Deaf Museum of Trondheim and the States Archives, ARK4 has established a new collaborative concept of interactive workshops with focus on the use of emerging technology as a new dissemination path between the institutions involved and the users. The project started in 2014 with the development of a digital game software that could be used by all collaborating institutions. As the first year is reaching at its end, ARK4 has been developing 3 workshop applications for multi-touch screens, based on the same software developed by the Department of Information Science, IDI NTNU for the project itself. The prototype has been already tested by High School students in Trondheim, last April and preliminary results will soon be published. This is a two years project that intends to create an interactive library platform of heritage that will be available to all users to work with the applications developed and to share knowledge with other communities. Our common aim in phase 2 is to explore the possibility of creating an open source game platform, for school students where all of the above prototypes will be used together and become accessible freely to the common user. The products will be shared by teaching communities, Museums and archives and contribute to life-long learning activities. The pilot will be tested in spring 2015 by our collaborators at the Steiner school in Trondheim. ARK4 has already been working with the teachers and students of Steiner school in 2014 to develop the educational frame of the proposed workshops that have been realized in June 2014. The results collected are soon to be published.

1. The Game platform of ARK4, phase 2: The Game will be divided in three levels.

1. A level of background information where the user can search information on different subject connected to the game.
2. Quiz level with questions on a subject like archaeology, Chemistry, Botany etc with a right and a wrong answer to choose and visuals that implement the gaming experience.
3. A level of information about the project, its design and research objectives.

The purpose of the game is to allow sharing of knowledge through interactive gaming on school subjects.

1.2 Gaming platform

This project will design and develop a gaming platform that will manage users (registration, login, etc.) and a number of games. Each game will be seen as a widget that can be activated within the platform for a specific user group. A learning scenarios editor will also be developed in order to allow teachers to create an educational scenario that will have:

- a description of the game
- a goal
- hints
- scores

The learning scenarios editor will also be able to export a simple IEEE LOM + SCORM xml file so that learning scenarios can be easily published to external learning environments (e.g. moodle, eclass,

etc.).

Within this scenario editor, the teacher will be able to include a number of levels and games per level that will appear as grid. The user will be able to see the goal of the game along with the list of available games and play them. The user wins points when playing the games and can move on to the next level. The score of the user could appear in a scoreboard where for example, all students of a class / group can compete.

The platform will be completely web based and could run on touch devices such as tablets and/or touch monitors. A MySQL database will hold all necessary information (user registry, game configuration, learning scenarios, etc).

A number of games will be initially developed. These games can be parametric so that they can allow teachers to easily create multiple instances of them and include them in the platform. Each game will include two interfaces: (a) an editor that will allow teachers to create instances of the game, (b) a front end that the users will use in order to play the game. Furthermore, each game will have at least two ways of ending: (a) success, (b) failure. When the user plays the game, depending on the outcome, he receives or loses points (or none).

Quiz

A quiz game will present a number of questions along with a number of possible answers per question. Along with the question description, a number of pictures / videos can be included. Each question could be accompanied by a hint.

Crossword

A crossword game will allow creating a small crossword based on a grid. The teacher will select from the crossword editor which parts of the grid to activate and what are the correct words that go into each part. After that, a hint question is inputted for each word.

Drag & organize

A drag and drop game will allow teachers to create a set of items and put them on a basket. Each item is represented by a box and has a picture, a title, a description, a set of links for getting further information. The teacher also defines a number of target baskets (each one representing a group) and the user drags the items into the corresponding baskets. The user can get information on each item by clicking on it. He can also get information on what each basket represents by also clicking on it. When the user finishes, he clicks on the "check" button and sees his score.

3. Functional Requirements: The functional requirements describe how the software will respond to the environment when deployed. The product will have 9 games from different subjects from all Institutions involved in ARK4.

The platform product will have 3 different kinds of users; Students, Teachers and System Administrators. All users will be able to log in and out and will be able to start a game through the their own account.

- a. When logged in, the users are met by a common front page showcasing all applications.
- b. Users can open an account or be invited by their teacher to open an account.
- c. Users can play any game and keep their scores.
- d. Users can see their profiles and their scores will be saved after each time they visit the site and play any game.

3.1 Modifiability

The software will allow administrators to modify certain parameters so that it can evolve and meet user requirements over time. Examples of these parameters are:

- Goal information (what the user needs to achieve in order to win something / move to next level etc.)
- The games that will be active when the user logs in.
- The active games per user profile (e.g. differently configured for male/female, per age, etc.)
- Some parameters of the games. For example if there is a parametric quiz game the administrator could use this to create multiple quiz games.

4. Security

The security issues that are raised in this case are privacy issues mostly. The platform will need to safeguard users' privacy including: personal details, performance in the game etc. The platform may collect data on the way users use the platform (this is required in order to further improve it) as well as user profile data (e.g. age, sex, education & skills). However, this information could be anonymized.

5. Research design: The platform will have a backlog where log-files can be collected and analyzed to see whether one can recognize patterns of users-behavior.

Backlog will also have a Medium Chat backlog (all messages sent and received) and the administrators can have access to these files.

The research will concentrate on practices that involve the user or visitor of the platform as a user of an interactive digital experience. We will survey on entertainment-factors that apply user-centered methods and collect new data to be shared by the community.

Informal knowledge acquisition activities are getting more and more popular and interest on media technologies have opened up a vast range of possibilities as it provides feedback and reinforcement arguments for the use of media and IT in dissemination projects for archives, Museums and libraries. The success of media as guidebooks and learning systems is apparent from the growing interest in the use of interactive devices as learning tools in informal learning contexts.

6. Dissemination: The broader impact of the proposed research-project will be the collection of log data and its analysis based on previous research methods on the current knowledge of (1) media enhanced learning and (2) innovative cultural heritage dissemination. The immediate Museum and archive communities will benefit from the empirical results, which advance the understandings, potentials, and limitations of media enhanced outdoor activities for knowledge acquisition to yield the

best practice and effective ontologies thereof.

It investigates the ontological changes information technologies contribute to and the new role museums and cultural heritage institutions can have in the context of interactivity and digital narrative creation, virtual and augmented reality and user-generated content.

ARK4 will summarize our experience with the application groups involved in this project and prepare a number of publications to peer-reviewed conferences and journals. These published results will describe best practices, conclusions, and recommendations for dissemination through innovative technologies and learning activities for libraries archives and Museums. With the maintenance of an active project web site all the technical reports and preprints of the research papers, as well as the system documentation, will be provided to the ARK4 community. The overall purpose of the project is to try and identify parameters of success in redefining the role of cultural heritage dissemination programs that include digital management based on the user`s interest and his learning behavior. The ontology of cultural heritage has had a traditional value created by a common set up, that is through exhibiting of memory objects and the information connected to them in closed environments and interpreted by authorities as curators and specialists. This landscape has changed the last years since many other professionals create applications and games that contribute to the use and learning about the past through different applications. Does knowledge realize itself differently in a digital cultural landscape where the person that visits a site or an exhibition looks for the information, or plays the game, is active in seeking knowledge. Does then the actual interaction between the visitor contribute to a new knowledge architecture path for the professionals? Do the users practice both factual knowledge on cultural heritage games and reasoning ability in their seeking knowledge performance? Ontologies then should be even more flexible now that the landscape of both exhibiting and interpreting cultural heritage is enriched by new practices that use digital devices and applications.

Alexandra Angeletaki, NTNU UB
Dimitris Gavrilis, Athena RS

Søker

Organisasjonsopplysninger

Organisasjonsnavn	NTNU Universitetsbibliotek
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Organisasjonsnummer	979 610 070
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Kontonummer	
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Institusjonens leder

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Etternavn	Tangen
Telefon	
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Er institusjonens leder kontaktperson for
prosjektet?

Nei

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Framdriftsplan

Prosjektet er

Toårig

Aktivitetsplan for prosjektet

Beskrivelse	First year of ARK4 development, see Budget 2014
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Aktivitetsperiode

Fra dato	01.01.2014
Til dato	30.12.2015

Beskrivelse	Kick off and State of the Art research.
Aktivitetsperiode	
Fra dato	01.01.2015
Til dato	30.03.2015
Beskrivelse	Design and development of Platform
Aktivitetsperiode	
Fra dato	01.03.2015
Til dato	30.06.2015
Beskrivelse	Instalation and workshops by all contributors
Aktivitetsperiode	
Fra dato	01.07.2015
Til dato	30.10.2015
Beskrivelse	Data collection and Analysis
Aktivitetsperiode	
Fra dato	01.11.2105
Til dato	30.12.2015

Andre opplysninger

Andre opplysninger/kommentarer om
framdrifts-/aktivitetsplan

Se vedlegg 1.

Budsjett

Søknadsbeløp fra Nasjonalbiblioteket

200 000

Samarbeidspartnere

Har du samarbeidspartner(e)?

Ja

Navn

DIGITAL CURATION UNIT, ATHENA RS

Beskriv samarbeidet

The Digital Curation Unit

The mission of the Digital Curation Unit is to research on possible technologies design the the web platform and adopt the applications, provide services and training on the platform developed for ARK4. The DCU adopts a multidisciplinary approach in order to serve a broad range of constituencies organisational records, e-repositories and digital heritage.

Vedlegg

Vedlegg