

Project Proposal - Experimenting with Hybrid UI solution for modern websites

About this document

This is project proposal for CS-C2130 - Software Project 1, held 11.09.2019-16.10.2019 on Aalto University.

Online version of this document in Google drive project dossier.

Applying to this team

Send informal application + (CV or Transcript of Records or some paper) on who you are and how to contact you to: student@odoo.web-veistamo.fi

1. Introduction

Even though monolithic open source content management systems such as WordPress and Drupal still supply a vast majority of available web services on the Web, it has become quite obvious that we need to address a few issues regarding this model of operation.

Integrating services. Many sites are integrating and providing services by compiling them as one UI from several sources. Seamless tailored UI might be created from several microservices providing functionality and information through API's. Wordpress already has REST API but theming still has some issues.

Mobile devices. The improvements in smart phones allows users to more effectively use handheld touchscreen devices when interacting with Web. This tendency is only going to strengthen. Old HTML based sites, even though responsive still tend to lack full feature set that one can gain by for example writing native apps.

UI / interaction. Traditional php-based UI compilation is somewhat limited in a way UI's can react to user input. React, Angular, might offer different benefits in dynamic interfaces by having only certain sections of pages reload instead of having to entirely refresh the whole page.

Scalability & Deployment. There are some considerations/limitations regarding continuous development and scalability in traditional CMS setups.

To address these issues, several major players (such as airbnb, instagram, facebook) have built their services using own hybrid react native models, it seems to allow an effective way to have continuous development on large scale production service and gain develop website and phone application from the same codebase.

Our aim is to explore REACT based UI alternatives for WordPress site at a very simple level.

2. Project goals

Build alternative UI with React Native to replace a traditional php-based WordPress UI. We already have such site to test it on traditional setup. The focus is to build a hybrid UI for web and mobile platform using React Native on the side and compare the results.

We start with simple static UI that reads information from existing webservice using WP Rest API. We would like to keep the scope as narrow as possible considering time constraints so all editorial and authentication stuff is out of scope for this project.

Possible research questions:

Performance : How much do we gain in performance compared to conventional solution?

Security : What are the new security concerns regarding Native React based Hybrid UI?

Scalability : Do we see any benefits/caveats in such setup considering deploying this service?

Business Feasibility: At what level does this model becomes a useful way of doing things?

3. Technologies

We recommend

- React Native etc
- Gatsby.js

- WordPress / REST
- Mariadb or similar
- Docker, Gitlab

Student team selects it's own tools for developing and internal communication. We recommend SLACK for comms.

We are quite confident that the project will be fun & interesting and with basic knowledge of the required technologies you should have no problems reaching the goals.

Our team can provide limited oversight and support with learning these technologies, so we do expect you to be interested in this field to begin with.

4. Requirements for the students

Any special skills desired or required from the students: Interest in front end development.

Our opinion on the difficulty of the topic (domain, technologies) is that this project will be on the level of moderate. Perhaps if you have already familiarized yourself with such technologies and own deeper skillset, there are definitely good possibilities to dive deeper into the topic. Our experience with student projects has taught us to keep the scope as limited as possible.

5. Legal Issues

Intellectual Property Rights (IPR): The client gets all IPRs to the results. (Most likely going to publish as open source but for now we want to keep it secret, keep it safe).

Confidentiality: The client will share some confidential information with the students.

6. Client

About Web-veistämö Oy

Who are the representatives of the client and what is their level of expertise in the project domain and technologies?

Erno is an old timer CMS dude who started early 2000 on this field. Nowadays a full time CC-field guy on the e-mails between developers, project managers and clients. He no longer has time touch any code (nor should he!) . He is cofounder of Web-veistämö Oy with his colleague Svante. Our little company is going to be 10 next year.

How much time are they prepared to spend guiding the team?

We will provide product owner and steering group level role for the team. With previous years we anticipate 80-120 hours investment from our side.

Does the client offer the team any resources such as a working room, a cloud server, computers/other necessary devices, software?

We will provide needed cloud servers, some software as docker images, gitlab etc. Just ask.

We have office space in Vallila that can be utilized for meetings and workshops, especially during evenings and weekends. In previous years we have held coding sprints and movie nights in the premises with full "snacks on snacks" - privileges. :)

Client representative

Erno lipponen

Web-veistämö OY

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