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Graduation project
Software technology

Project description

Scope

Imagine TV 2 Fyn hosts an event revolving around an election, here normally the only people which has the possibility to interact with the host, would be the ones located at the event venue, this is where the overlay comes in to play, as it would make it possible for viewers to interact (answer questions/polls) from the comfort of their own home (In the beginning this would only be possible to implement for viewers using TV 2 Fyn’s website), these answer statistics would then be relayed back to TV 2 Fyn.

One problem then arises from that, which is that live events, rarely stick 100% to the planned program, therefore a TV 2 Fyn employee (think a producer or alike) would need to be able to trigger the questions/polls manually, this demands a “control center” which can control these triggers, which would also double as the page for seeing the answer statistics.

The communication between the overlay and “control center” will be solved using serverless functions, such as AWS lambda, and possibly other serverless solutions.

Problem

More and more viewers have been switching to modern streaming solutions/watching news broadcasts on the web, instead of using the Analog & Digital signal, this represents a ton of possibilities.

But the broadcasting and presentation of the shows has stayed almost the same, however some new players to the scene has tackled this “problem”/opportunity in another way, an example could be the massively popular livestreaming service twitch.tv, here the viewers has the possibility to chat with each other and the host(s)/streamer(s), which may be one of the reasons why some streamers see massive success with consistently high viewer counts, which may be partly due to the interaction with the viewers(good interaction=more viewers).

So, in essence: “The project aims to increase the interaction with TV 2 Fyn’s viewers”)

State of the art

It could be argued that other livestreaming services aimed to solve a similar problem, as they (might have) tried to increase interaction between the viewer(s) and the host(s), but to a 1:1 comparison cannot be made, as their solution isn’t exactly the same, however in the future a chat function could be developed and integrated with the overlay, but this would represent a whole lot of its own problems. However, it is very likely that twitch.tv uses serverless functions and other serverless solutions as they are owned by Amazon.

Two examples of “similar works” could be what the companies Vixyvideo and Brightcove offer, however, their overlays can only be added if you use their video player, on their platform, which is hosted and configured by them; to add to this the overlays are somewhat simple, as they only have the functionality to add images, text or simple graphics, which might pause the player, open a link, or a simple menu. And this is where this overlay will be developed in a way, that it’s meant to be able to anchor itself to any video player on any website and have the functionality to show and do whatever HTML, CSS and JavaScript allows you to, therefor also ensuring that any website has the capability to run it.

Envisioned solution

The envisioned solution is to develop an interactive overlay which anchors itself on top of the video player used for livestreams on the tv2fyn.dk website, the overlay will then be able to show interactive questions/polls when their event is triggered, where the answers will get saved in a NoSQL database; the activation of these events will be controlled from a "control center" with a browser-based GUI, this would also double as the interface for seeing the individual answers and overall statistics for different questions/polls. The communication between the interactive overlay and the "control center" will be facilitated using serverless functions, and other serverless solutions.

Methodology

The process for the development will be based in the idea of RUP (Rational Unified Process), alongside being documented, and modelled with the use of some UML (Unified modeling language)-diagrams. The system will (for the most part) be using a serverless architecture.

Technology

- Vue (possibly Vue 3).
- TailwindCSS.
- JavaScript/TypeScript.
- Serverless functions (most likely AWS lambda).

Requirements

Functional requirements

ID	Name	Description
F01	Overlay	An overlay which can be activated, to anchor itself to the video player on the tv2fyn.dk website.
F02	GUI to control overlay (Control center)	A TV 2 Fyn employee (or similar) needs to have the ability to control the system, such as triggering questions/polls from a GUI.
F03	Historical data management	A NoSQL database containing historical data from former overlays, such as answer distribution in polls.

Non-functional requirements

ID	Name	Description
NF01	Usability	The overlay should be responsive for the viewer, and not cause the browser too heavy a workload, and thereby result in a smooth experience.
NF02	Performance	When a TV 2 Fyn employee (or similar) triggers the activation an event, the activation of the event must happen for all viewers within 10 seconds.

Contribution

The contribution is thought to be towards the industry; however, it may later be used by the research community to study how interaction drives our interest.

Results

An interactive overlay anchored on top of the video player used on the tv2fyn.dk website, connected with the use of serverless architecture to a web-based GUI used by TV 2 Fyn employees to activate different questions/polls. Giving the viewers of TV 2 Fyn the possibility to interact more directly with host(s), panel member(s), expert(s) and more, on the show.