School of Computing

CA326 Year 3 Project Proposal Form

SECTION A

Project Title: Squid proxy and Android app for safe browsing

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Staff Member Consulted for supervision: Darragh O'Brien

Project Description (2 pages max)

Introduction

The internet is an amazing tool however it can be dangerous especially for young children that have unrestricted access to any site no matter how sensitive it is. We are offering an application that will allow users to block certain websites from being visited and also set time limits on devices by filtering the network connections on a raspberry pi. For example this would allow parents to block certain websites that may distract their child from homework while still allowing access to educational websites. Additionally websites can be blocked permanently. The user will essentially become a parent to all devices connected and ensure a safe environment for all. We understand that our target market is parents, many of which may not be tech savvy, which is why our app has an easy to use interface.

Outline

Our proposed project would allow users to sign in to an android application and filter out websites that they would not like visited on their network through the use of a squid proxy on a raspberry pi. We will also offer users the ability to set usage limits on certain devices' access to the internet and a reward system to grant additional time on the internet as well as being able to view all devices connected to the proxy all on an easy to use ui.

Background

The idea for the project came from our own personal experience growing up with the internet and also a report we read which had some statistics that were shocking to us. In the report 8,032 nine year olds in Ireland were interviewed and it was found nearly all had access to the internet and 53% of them had unrestricted and unsupervised access. This made us think about the dangers that are possible for these children to come across online. We also considered how easily it is for children and teenagers to get distracted while doing activities such as homework and study using the internet as we have personally experienced this. We read a report by the National Advisory Council for Online Safety on a survey that showed a significant increase in the average time spent online by children since 2010 from an average of 1 hour a day up to 2.1 hours for a weekday.

Goals

This service will offer safe internet access for children and also peace of mind for parents, while also being able to keep children from spending too much time online.

Why? There is a lot of content on the internet that children should not have access to and it is easy to lose focus when children and teenagers have devices nearby with instant access to entertainment.

When? When parents have children and teenagers who have devices to connect to the internet at home

Where? In the homes of parents with children or teenagers

How? By offering parents the ability to block websites from being accessed while also setting usage limits to avoid over consumption and giving parents the ability to reward behaviour by giving additional time online.

Programming language(s) and tools

java, HTML, CSS, javascript, Git, VS Code

What we will learn:

Knowledge of working with a raspberry pi

squid proxy

further develop java script and java skills

Breakdown of work

We plan on continuously working together to ensure we get the project finished and it has the ability to do everything we have planned for it to do. We will be in constant communication to ensure we are always on track and performing to the best of our ability

Aaron

Aaron will be responsible for the android application and ui, ensuring it is easy to use and has all functionalities present. Aaron will also be helping Ciaran with the squid proxy.

Ciaran

Ciaran will work with the squid proxy, giving the android app the ability to block websites and also control usage limits. Ciaran will also be helping Aaron with the android application.

References:

"Perception of income inequality among children." *Growing Up in Ireland*, 16 June 2021, https://www.growingup.ie/pubs/Launch_Lives-of-9YOs.pdf Accessed 27 October 2022.

National Advisory Council for Online Safety. *Report of a National Survey of Children, their Parents and Adults regarding Online Safety 2021*, https://assets.gov.ie/204409/b9ab5dbd-8fdc-4f97-abfc-a88afb2f6e6f.pdf Accessed 28 October 2022.