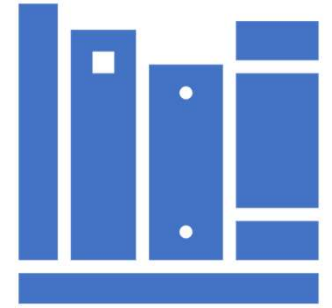


android



Joshua Akaehomen – C00253149

IT Management Year 4 Research Project Presentation

Introduction



This a presentation of the research and work done for the mobile application, PlayWatch



PlayWatch is an app designed to allow parents to monitor their children's video game playing and ascertain that the content they are observing is suitable for consumption



This presentation will elucidate the specifics of three core aspects of research that were necessary for the project's development: Business, Technical, and Ethical



Project Aspect: Business Value



Preparation of Business Requirements

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- The primary target demographic for the application: parents/guardians with young children.
 - Isolating the business requirements of the target demographic was the first step in the app's development – what do these parents want from an application like this?
 - Compiled initial list of requirements by researching typical behaviours of children who play video game, and the aftereffects that arise from poor video game consumptions.

Preparation of Business Requirements

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- The business requirements that were drafted for the project were as follows:
 1. The ability to monitor children's play activity
 2. The ability to monitor how long a child has spent playing games
 3. The ability for the user to see the PEGI rating of the game played
 4. The ability for the user see what content the game contains
 5. The ability for the user to be alerted/notified if a game being played is inappropriate for their child
 6. The ability to monitor online interaction (voice chat, text, etc)

Collection of Field Data

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- To verify the business requirements that had been set for the project, a survey was conducted through Google Forms
 - The survey was aimed at parents with children ages 4-13, studies having supported that age range is where children are more impressionable, and from then on, gain independence.
 - The link to the form is found here: <https://forms.gle/zLtoLM5isTTsBrS5A>

Additional Research: Consumer Preferences

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- When the project was in its research phase, the desire was to have the mobile application automatically update the user's data and records in real time by receiving it directly from a connected console.
 - However, with additional research and experimentation with various technologies, it was concluded that this method was not feasible due to restrictions from accessing certain files and interfaces.
 - Therefore, it was determined the 'PlayWatch' would feature manual user input rather than automatic updates.

Additional Research: Consumer Preferences



With the change in functionality, there was to be a consideration made for a change in business value. It was surmised that users may prefer minimal users interaction in apps that record user data.



According to a study by Localytics in 2019, apps that require extended user interaction have a **higher abandonment rate** compared to those that automatically populate data.



Conversely, there are also users that are more comfortable inputting data themselves instead of relying on technologies they don't understand or are out of their control, or do not welcome the idea of potentially excess data being contributed without their control.



Thus, the 'PlayWatch' project sought to balance functionality and user-friendliness.

Project Monetisation

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- While paid apps are the easiest and most direct way to monetise a mobile app, it was desired for the project to be free-to-download.
 - “Users are far more willing to download a free app than a paid app [and]...users are generally less critical of an app they didn’t have to pay for” - Flexible, 2020
 - To ensure that the free app would still generate revenue, it was decided that the app would host in-app third party advertising. The implementation of Google AbMob ads was selected as a solution.



Google AdMob

- After signing up with Google AdMob, one is provided with a publisher ID.
- After adding the project application to AdMob, the app is allocated a unique app ID. These IDs were added to the metadata of app's configuration files.
- Google AdMob has a selection of different ads types for implementation. For the use of a project, a 'Banner Ad' was selected.

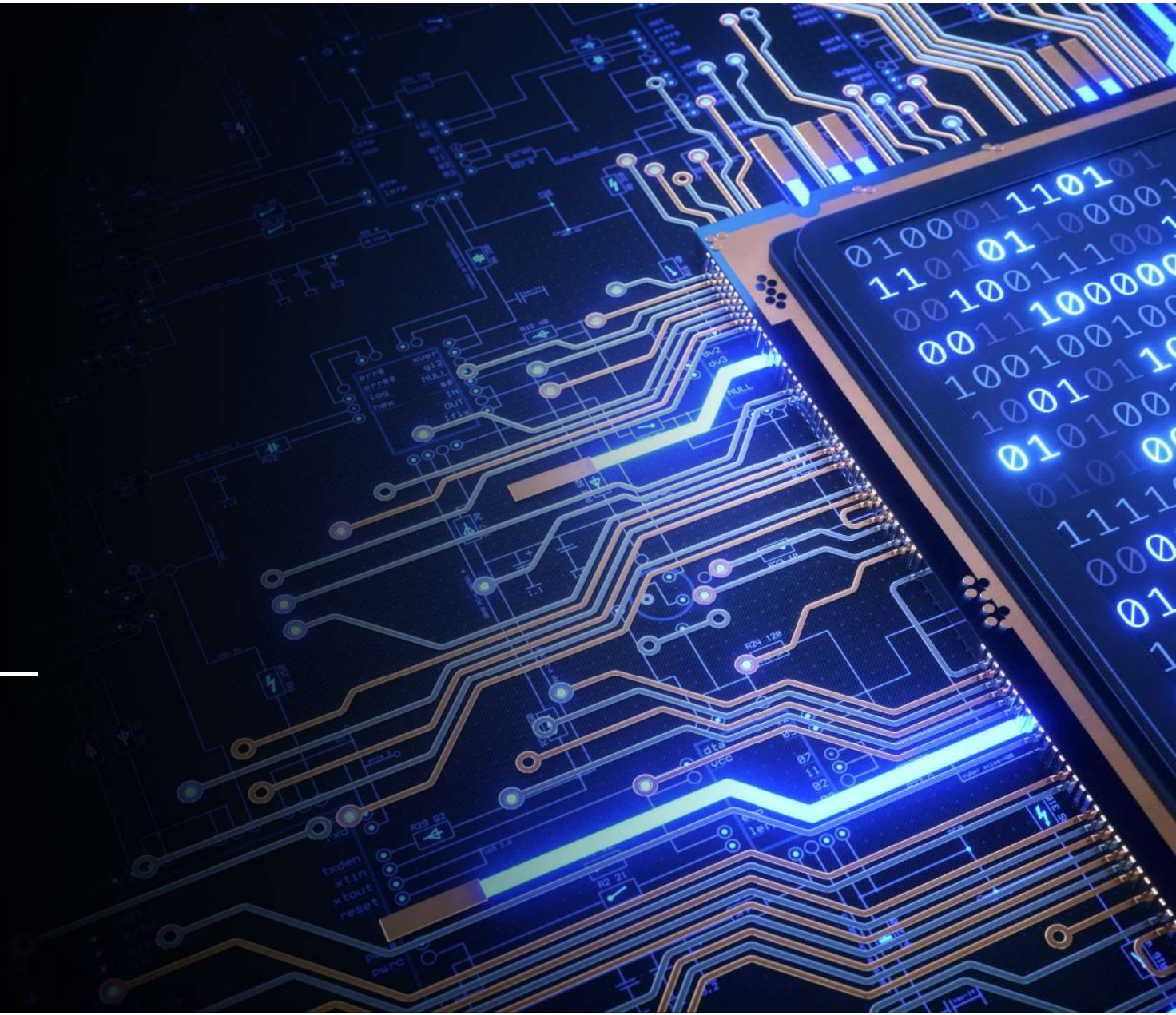
Paid Version of the Mobile App

While the project is for the development of a free-to-download app, a plan to promote a paid version of the app was also decided on.

This 'PRO' version of the app, in exchange for the need to be purchased, will provide more extravagant features and the removal of ads.



Project Aspect: Technical Implementation

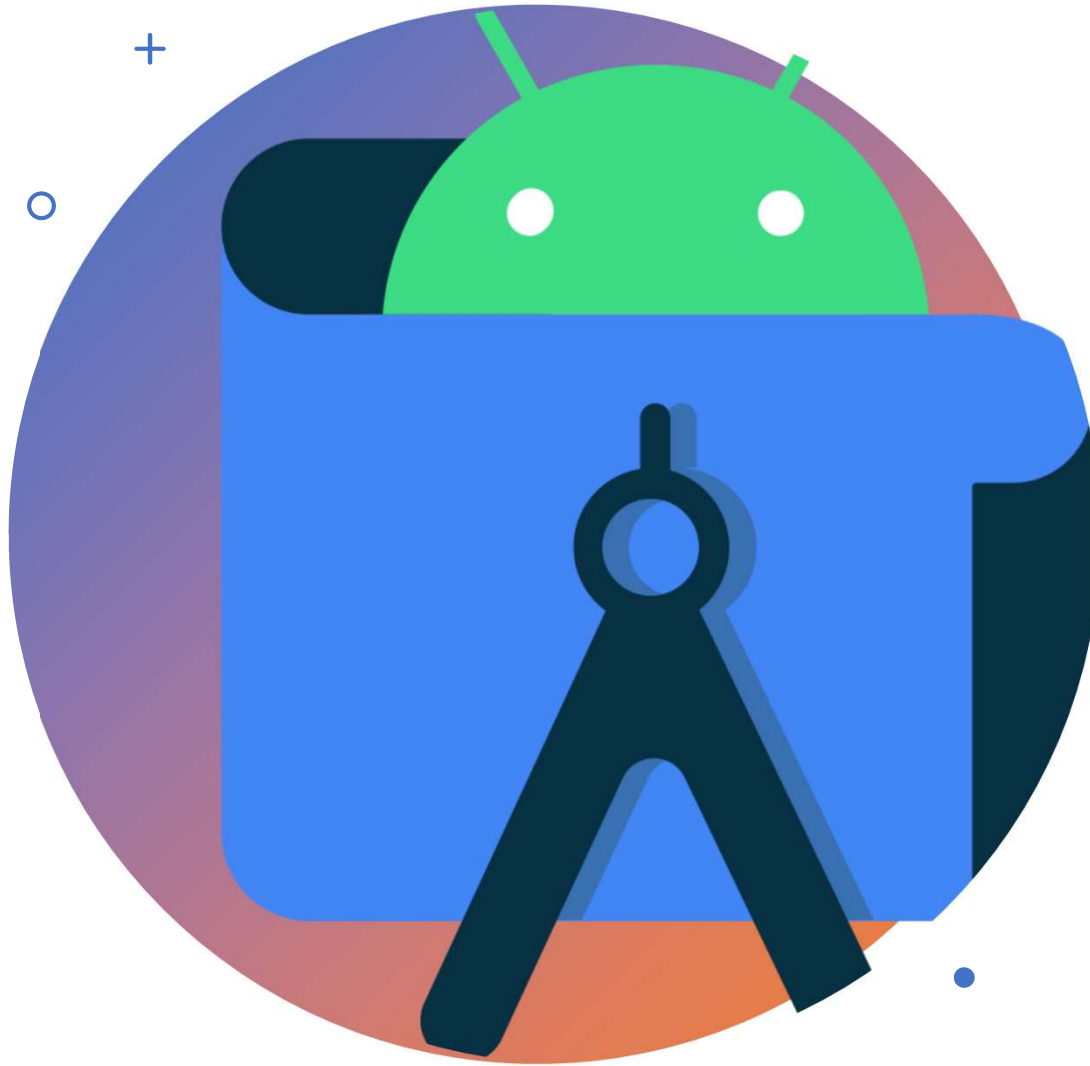


Selecting the App Development Platform

Several mobile app development platforms were considered for use in the project, such as Appy Pie, Flutter, Buildfire, etc.

To ensure that the platform could be used throughout the project's life cycle while incurring no additional costs, a free-to-use mobile app development platform was preferred.

It was also important that the platform could support the range of functionality that would be necessary to build the mobile app for the project.



Android Studio

- Android Studio was chosen as the mobile app development platform due to:
 - Previous experience using the platform
 - The ability to run the application on emulators to test its functionality
 - The ability to include APIs and other assets
 - Kotlin-based programming which is highly flexible and easy to understand

Technologies Considered and Selected

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- Due to the original desire to have the app connect directly to the target console to receive real-time updates of play activity. To this end, the implementation of the following technologies were researched: linking to console account, using NFC, Bluetooth and the extracting of log files from the target device.
 - However, with further research into ways in which mobile application interact with video game consoles (i.e. the Nintendo Switch), it became clear that a necessary prerequisite was having access to the console's API
 - The problem being, these APIs were not publicly accessible, and gaining access is reportedly lengthy and requires certain accolades. Therefore, a decision was made to amend the contrived functionality of the app, rather than waste project hours.

Technologies Considered and Selected

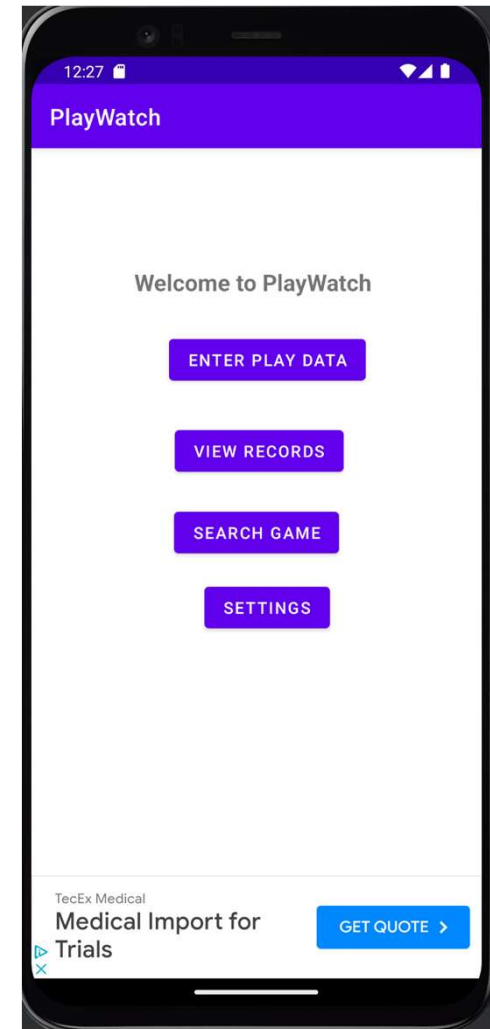
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- Most modern game consoles have a play activity log. This data combined with the information gathered from a child's gaming habits provides a suitable information system for the application.
 - Using the approach of user-input data, the parent can enter this information into the app and record it, observing the gameplay habits of their child.

Technologies Considered and Selected

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- The incorporation of machine learning technology into the project was also considered and researched. Using an image-classification model, parents could use capture what is on the screen and the app would be able to recognise what game is being played.
 - A similar feature could also be included through the use of a Google Image Search API. By including the necessary dependencies in the app's code and implementing the feature, a user could use a camera function to capture a shot of the game and use the Google Image Search API to identify it.

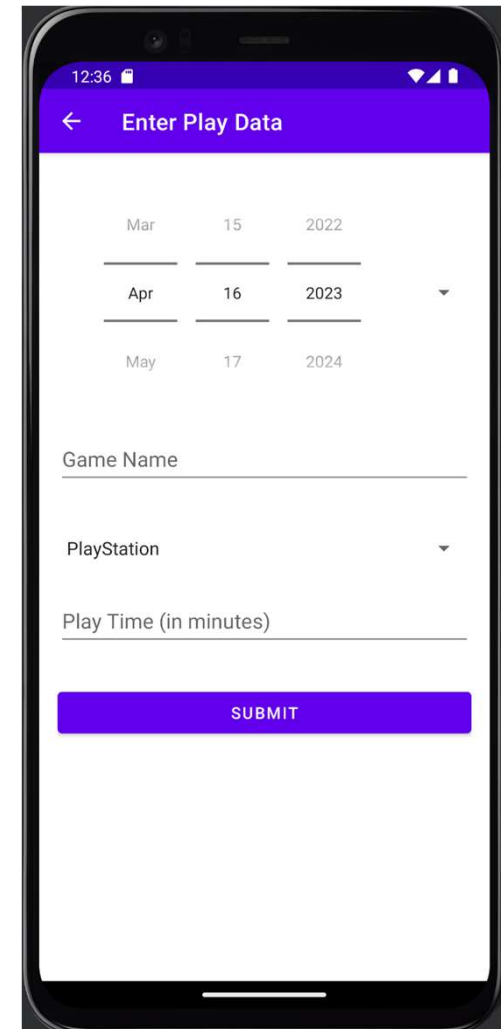
PlayWatch Interface: Home Screen

- The Home Screen for 'PlayWatch' features four buttons redirecting the users to various screens;
 - One which opens the form into which the user inputs the necessary data
 - One where that data is observed in records
 - One where games can be searched and details about them are returned to the user
 - And one for basic app settings



PlayWatch Interface: Enter Play Data

- The 'Enter Play Data' screen presents the user with a form that prompts the user to enter the relevant data concerning their child's play activity; the date, the name of the game, the console on which the game was played, and the time (in minutes) the game was played for
- After the user presses the submit button, the data is saved in sharedPreferences (a data repository) and the form is wiped for the next entry



12:36

← Enter Play Data

Mar 15 2022

Apr 16 2023

May 17 2024

Game Name

PlayStation

Play Time (in minutes)

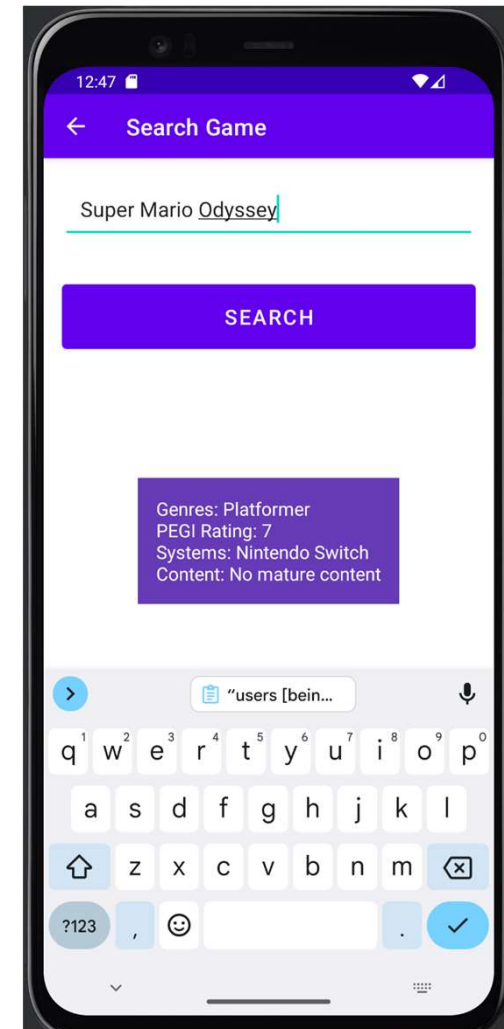
SUBMIT

PlayWatch Interface: View Records

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PlayWatch Interface: Search Game

- Using the search bar on the 'Search Game' screen, the user can enter the name of a game and the app will return a temporary floating message (a toast) relaying the genres, its age rating, its supporting consoles, and any ERSP content warnings.
- If a game's PEGI rating is too high, the app will return an additional message informing the user that the game may be inappropriate for their child





Project Aspect: Ethical Contributions



The Effects of Children's Exposure to Media

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- This project aimed to aid parents in better understanding the content their children are absorbing through video games and how their play activity can be made as healthy as possible.
 - Poor habits of video game consumption can have negative effects on children abnormal sleep patterns, deteriorated eyesight, and a variety of anti-social behaviours.
 - Children are especially susceptible to long-lasting consequences that stem from an unhealthy relationship with video games “as the brain isn't fully developed until young adulthood, children's media use can have a big impact on how their brains process information, outwardly affecting how they react to and remember events in any given situation” – Brain Development, 2021

Effects of Current Gaming Climate on Children

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- Unhealthy means of expressing anger and frustrated, while not directly caused by video game playing, can be exacerbated by them.
 - 'Gamer rage' – sudden outburst due to unsatisfactory result or performance in a video game
 - With the popularisation of skilful/elite gaming in media and its eclipsing of playful gaming, children may feel that inability to perform well in video games (in relation to peers or popular figures) makes them inadequate, resulted in anger and frustration.

Effects of Current Gaming Climate on Children

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- Further, as video gaming is a relatively stationary activity compared to high-motion sports, all stress and tension that built up in a game is typically not released until the game is over.
 - In a book by Emily Fletcher, it is quoted that movement is crucial in the process of calming. If a child not trained to channel their emotions positively, it can lead to the unhealthy expression of their anger and frustration.
 - While there are no direct statistics to bolster this, there are many reports of children engaging in profanity (the infamous 'Call of Duty Lobby') or violent outburst, damaging their consoles/controllers or their surroundings.
 - The 'PlayWatch' app encourages parents to engage with their children. If a child has frequent experiences of negative behaviour due to video game, using the app, the parent can observe these patterns by what game is being played and help to isolate the issue.

The Cultivation of Good Video Gaming Habits

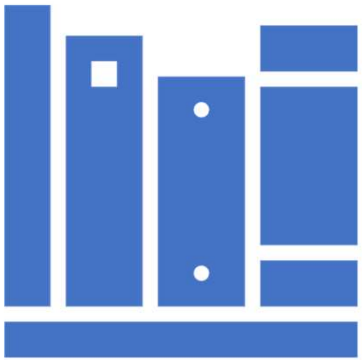
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- 'PlayWatch' aims to allow parents to co-operate with their children in cultivating a healthy gaming lifestyle and to curb the negative aspects that may arise from video game exposure
 - With the contrived method of manual data input for the project application, parents may need to dialogue with their children about the games they played and the specifics concerning it, inspiring a line of communication between them regarding the child's pastimes.
 - "Parental involvement in children's organized activities was positively related to children's academic achievement, self-esteem, and life satisfaction, and was indirectly related to children's emotional and behavioural problems through improved parent-child communication and relationship quality." - Journal of Adolescence, 2016

Conclusions

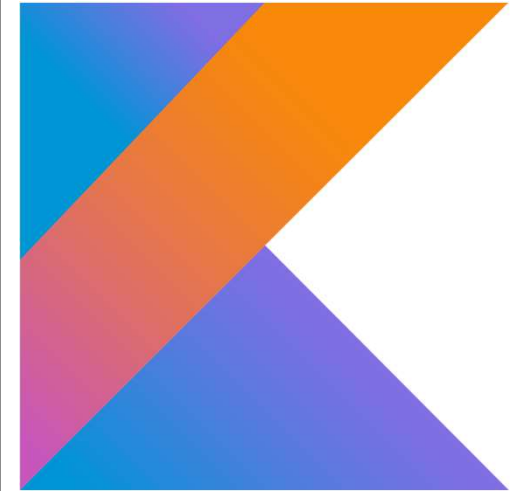
- With rising uncertainty about children's safety in a media driven society, PlayWatch was developed for this project to provide a useful tool for parents who are concerned about their children's video gaming habits. The app is designed to be easy to use and intuitive to meet the needs of different families and parenting styles, as well as varying technical experiences and aptitudes.
- Numerous challenges were faced in the development process; Android Studio's resource consumption, AdMob issues, complications due to coding process.
- Future development hopes to supplement some of the areas in which the project required more attention and areas in which technical implementation can be improved, as well as new avenues for value proposition and ethical contributions.

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End of Presentation

Thank you for your attention! Questions are encouraged.