

DIY SAGA

Game Design Document

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COM631

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OVERVIEW

One tap mobile game, players tap when patterns line up and try to clear as many stages as they can without failing.

The target audience are mobile/casual gamers of all age groups at a PEGI 3 rating, and the genre is Action & Puzzle game.

The theme of the game is construction, the player is performing actions on a construction site/DIY project. The start of the game introduces the player to the mechanics through basic actions. The goal is made clear, they must tap the screen when the patterns match up in order to perform the construction actions. They complete the actions within the time limit and move on to the next screen where they find another set of similar patterns and another timer. This informs the player of the general repetitive gameplay.

Matching patterns to “Hammer nails”, “Screw screws”, and “Saw wood/Weld metal” on a construction site. The player sees nails and screws on a wooden board with patterns overlaying them (). Through the sounds and animations, the player feels like they are working on a site to build something or in a DIY situation.

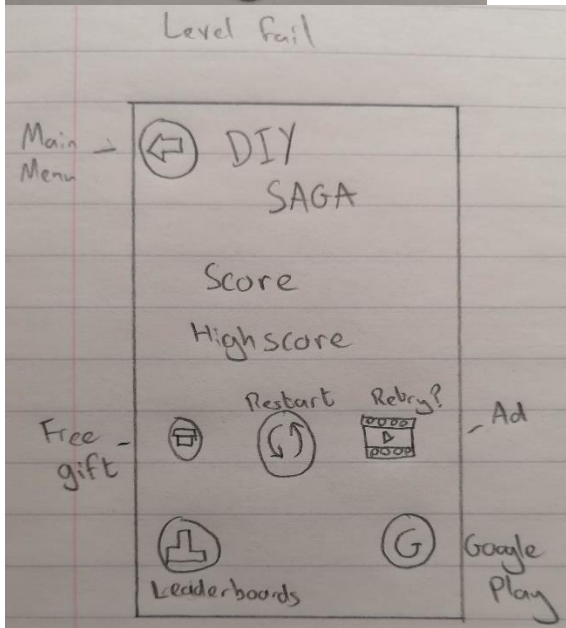
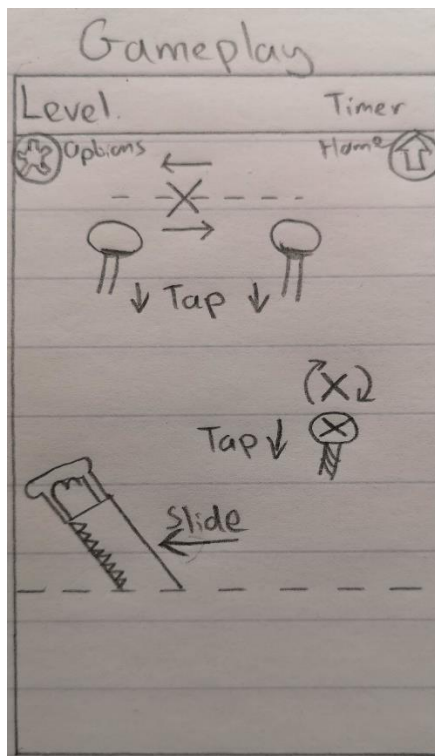
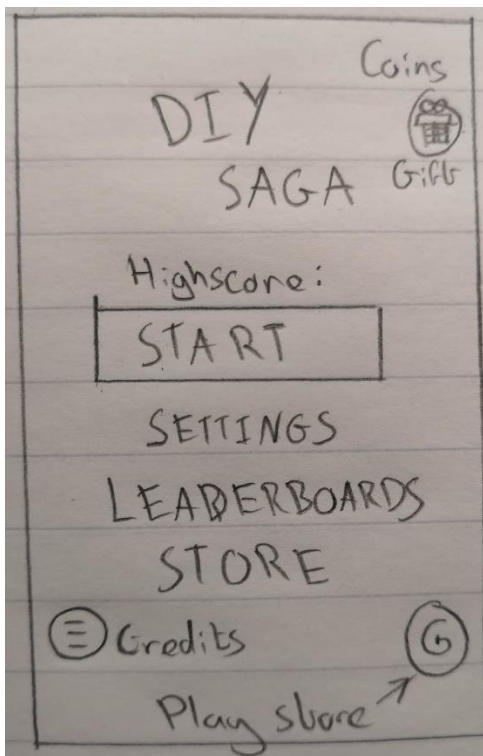
Target Platform / Minimum Hardware:

The game will be made using the Unity game engine as it’s optimized for mobile and the game will be built for mobile (Android). The player will need an android phone running, at the least, Android 4.0.

Visual Style

The visual style in two words would be “Cartoon Construction”. The style during the gameplay is reminiscent of the animation in games such as “Cut the rope”. The player sees a wooden or metal background with objects in different places on the wood/metal. The objects are tools used in construction, for instance nails and screws. There are various animations above the nails and screws indicating to the player when they need to perform actions.

The sketches below illustrate more clearly the look of the game during gameplay:



Concept sketches for;
Main Menu
Gameplay
Level Fail screen

Included in this section are pictures of the assets going to be used in the project to better visualize the style of the game;



Audio Style

During gameplay there won't be a musical soundtrack in favor of environmental background sounds such as construction or city sounds i.e. Cars, clanging hammers, horns, drill noises etc.

Audio effects will include the default sounds, so a hammer striking a nail/wood for when the nail is completely in. The sound of a drill drilling a screw into wood. The sound of a saw being dragged through a wood board.

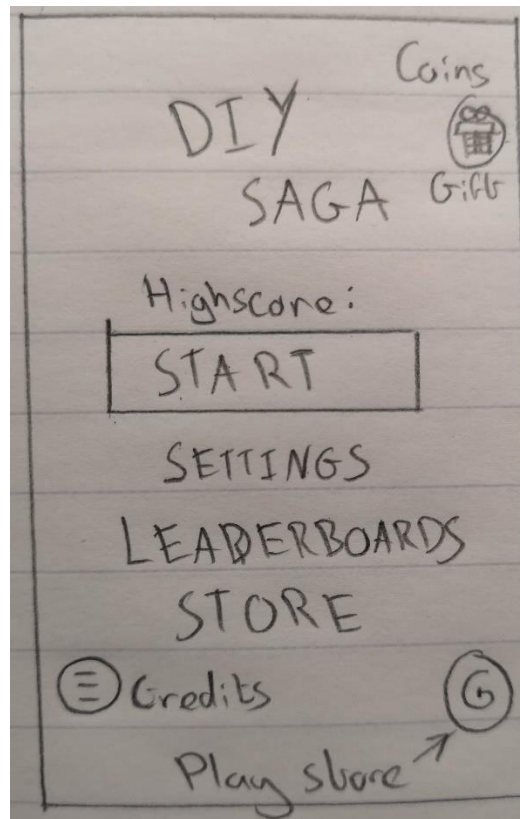
The game has customization options to change the skins of the nails, screws, and the saws. So with the visual change there will also be an audio change within the context of the visual change. For example, if the player unlocks a customization option to change the nails into balloon nails, then the audio would change to something like a squeak whenever the nail is struck with the hammer.

STARTING OUT

Game start – Main Menu – Character Selection/Creation

The main menu of the game consists of a pretty standard layout [See sketch below] with a START, SETTINGS, CREDITS, HIGHSCORE, LEADERBOARDS, STORE options. Additional options will be a link to the Google play page and any other social pages for the game. A coin counter. A button to open a timed gift, the gift gives coins and can be doubled.

Once the player selects start they enter the high score mode. It begins simply each time to gradually increase in difficulty. The first screen of the gameplay will consist of one task of the most basic pattern and gradually include less trivial tasks.



Main menu.

Game Start and Intro

The simple mechanics of the game mean the player won't require many trivial screens at the start to learn the mechanics.

The core loop of the game forces the player to start from the beginning whenever they fail a screen. The player enters the first gameplay screen after selecting START from the main menu. During gameplay, the player can see their current score and the time left in the level. These will be the only stats available while in gameplay.

After the player fails any task or the time runs out the score is displayed along with their highscore, if they set a new high score then only that is displayed. The player will also be prompted with an option to continue as if they haven't failed on the condition they watch an ad. Or they can restart and begin from the start.

In-Game HUD & Menus

During gameplay the player will have a limited HUD consisting of a button for Options and the Main Menu, and a display for the current score and time left.

The menus and the store are in line with the overall aesthetics of the game. The home screen menus are wood boards as are the menus in the store screen.

UI

Main Menu

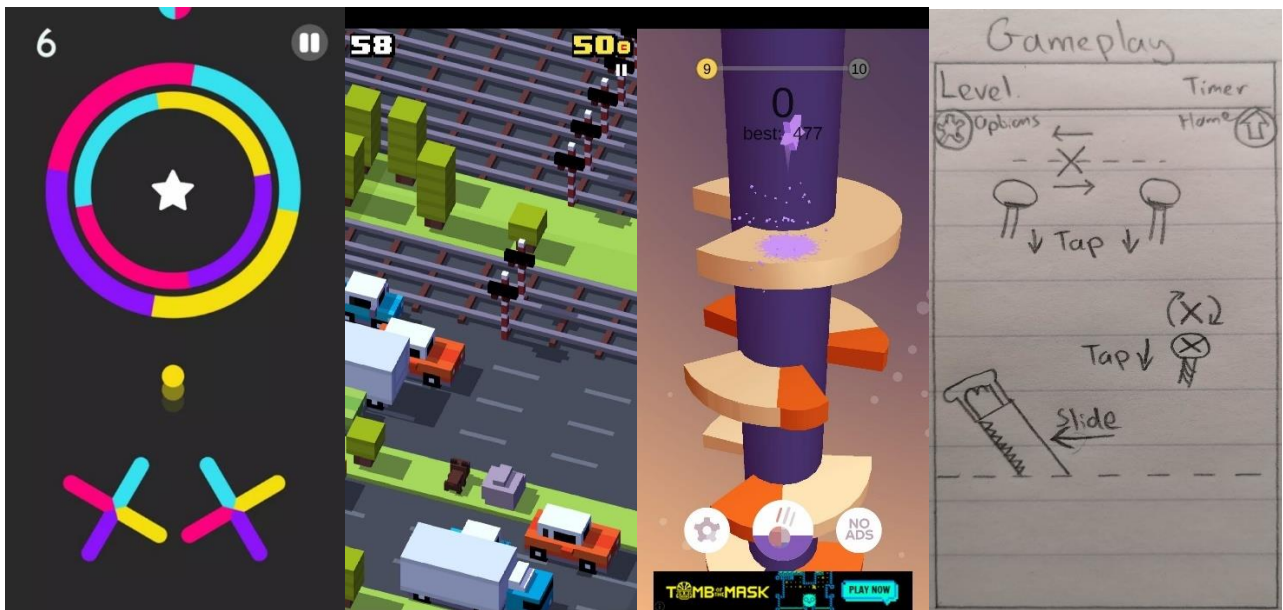
The main menu is designed with the construction aesthetic in mind i.e. the background in the main menu is similar to a workbench with wooden boards resting on it, the wooden boards being the menu buttons. Other menu interactions are designed around the construction aesthetic too, tools on the workbench are menu interactions.

The player interacts with the menu the same way as many other menus in other games. It's displayed simply and interaction is simple and intuitive.

In-Game HUD

The only information that needs to be displayed and updated during gameplay is the current level they are on, this is also the current score. A timer for the remaining time left in the level. Button to pause the game and access the settings menu. Home menu button to exit the level and return to the main menu.

The pictures below are of gameplay from Color Switch by Color Switch Phoenix, Crossy Road by HIPSTER WHALE, and Helix Jump by VOODOO. These are references that show the limited HUD information that will be in DIY Saga.



Game Over Screen

If the player fails a task or the level timer reaches zero, then the game over screen displays. Similar to the references below. The pictures below show features that will be in the game over screen in DIY Saga.

There will be a **RETURN** to main menu option.

A **RESTART** from the beginning option.

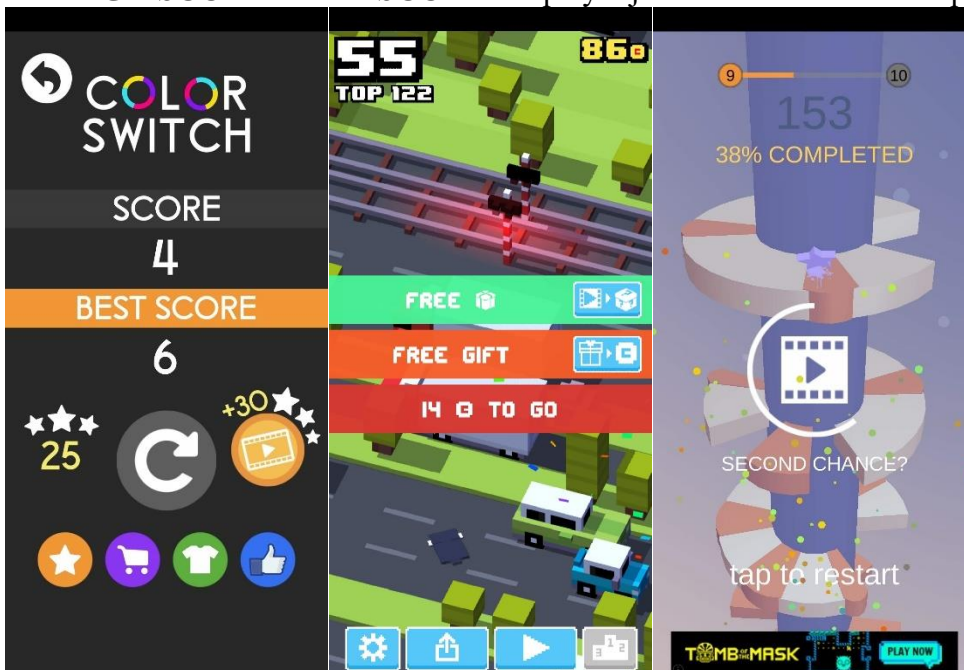
A button for the **GOOGLE PLAY** link.

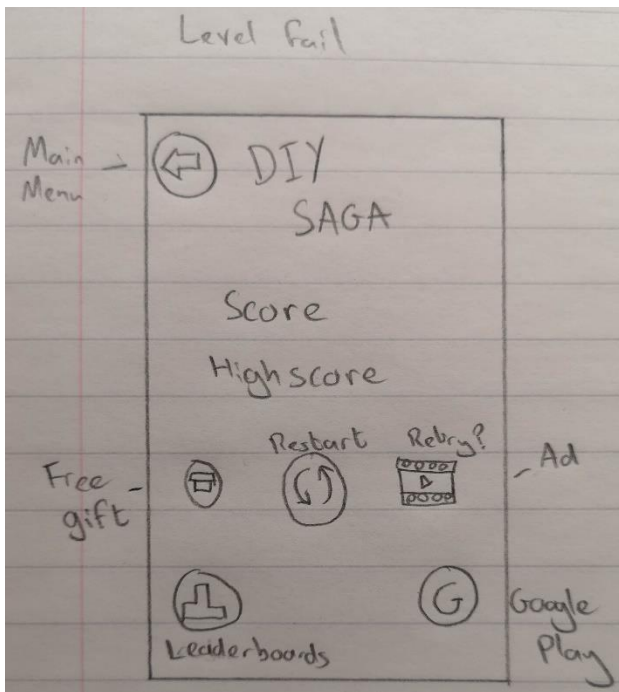
A **SECOND CHANCE** rewarded video. Reward the player with another life if they watch an ad.

If the player has a **FREE REWARD** available then present it to them.

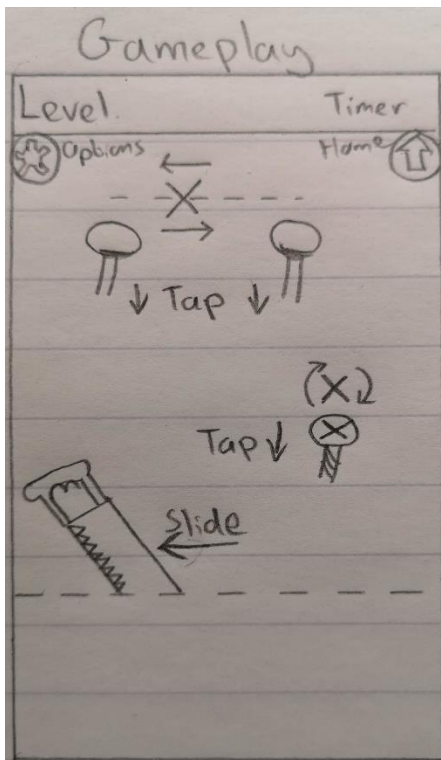
A **LEADERBOARDS** button leading to post your score to the Google Play Games leaderboard.

The **HIGH SCORE** and the **SCORE** the player just achieved are also displayed.





Level Blueprint or Gameboard



This is a sketch of the typical level layout for DIY Saga. The elements will change every level. The amount of tasks, the speed of the moving Xs, the timer. These are the variables to affect the difficult of the levels.

GAMEPLAY

Start

The start features simple gameplay. The player has simple tasks to “warm up”, or if it’s a new player then the early tasks act as a tutorial to introduce them to the core mechanic of the game.

Middle game

The goal is to get as far as possible so middle game is relative to the players skill. But the majority of the time the player will be learning how to do the tasks quickly to advance to the next screen.

The main challenges in the late game are that the elements of the game get more extreme. The player has less time to complete the tasks and the patterns to complete the tasks get more complex.

Mechanics

The game only uses tapping and sliding to interact with the game. Tapping the correct spot at the correct time and sliding along “Cut here” lines are the goals for the player.

The player can tap and slide to complete the level.

Tasks

The tasks to complete the levels consist of;

Tapping the nails whenever the moving target is aligned with the nail until the nail is in the wood, 3 hits.

Tapping the screws whenever the rotating target is aligned with the pattern on the screw head.

Dragging the saw along the cutting line.

As illustrated in the gameplay concept sketch.

WIN CONDITION

The game is an endless high score game i.e. there is no win condition. The players’ goal is to get a high a score as possible so they “win” when they achieve their own goals within the game.

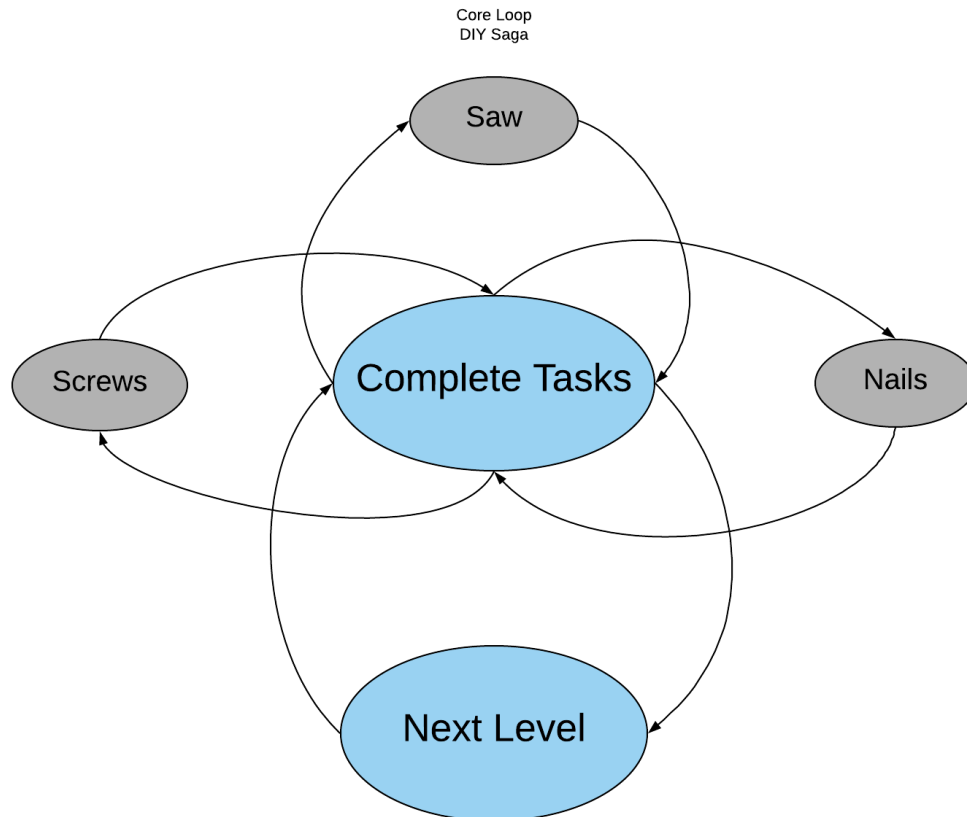
Score

The score is determined by the level the player has reached when they fail i.e. the level in which the player “dies” is the current score.

Diagram of core game loop

The core loop of the game determines how the game flows. In DIY Sage the core loop is simple, the player completes tasks involving Nails, Screws, and Saws in order to advance to the next level where they do the same thing for as long as they can until they fail and leave the loop.

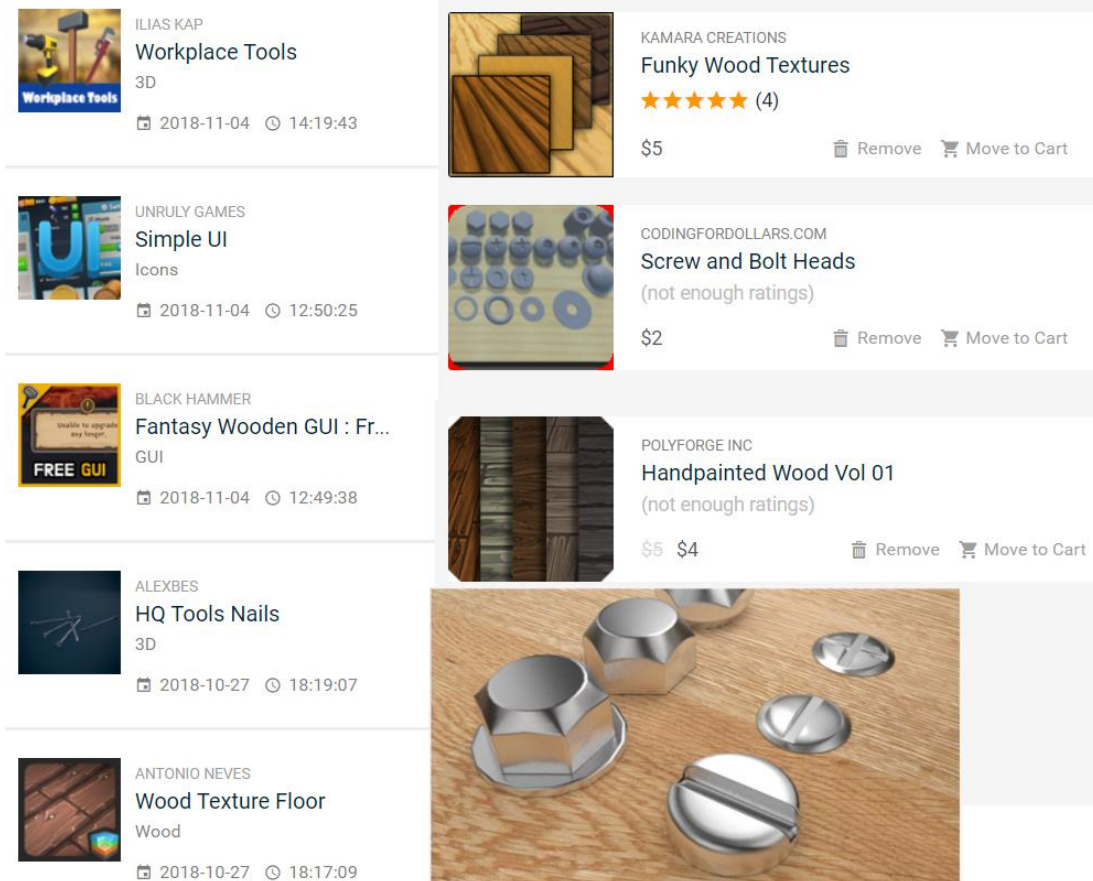
The only times in the game in which the player is disengaged with the core loop is when they watch an ad for a second chance, when they exit to the main menu, or when they restart from the level fail screen.



ASSETS

Style requirements: The style should be overall consistent through all assets. Most of the assets will be taken from the Unity asset store or other online asset stores. The style should be reminiscent of the mobile game “Cut the Rope”.

Below are some of the art assets to be used in the game, and to give an overall impression of the style of the game;



2D Assets: Varying wood textures for workbenches, screw head models, nail head models, saw models.

Need to have multiple styles for the nails, screws, and saws. These will be customizations in the game store that the player can buy/unlock.

2D background images need to follow the same cartoon style. (Construction sites/work sites).

AUDIO ASSETS

Since the game will not have a musical soundtrack we will be acquiring sound effect assets from online resources including GameDevMarket and FreeSound. The Audio will be for sounds including;

- Hammer Strikes
- Drill activating
- Saw being dragged through wood
- Ambient Environment noises
- Traffic
- Car horns
- Construction Machinery
- Ambient construction noise

MONETIZATION STRATEGY/GAME ECONOMY (EXCEL)

Monetization

- Ads – Reward ads, timed free gift, get currency, x2 if you watch another ad
Player can watch an ad to retry from the current level
- Currency - Coins, used for loot boxes, boxes have customizations.
- Customize - Skins for nails, screws, and saws.
- IAP - There will be a store in the game for customization options for nails, screws, and hammers.

The approach to monetization is taken from other popular/similar games like Crossy Road, Knife Hit, and Run Sausage Run. As seen in the data taken from SensorTower and AppAnnie (Check appendices), it shows their downloads and revenue on both Apple and Google Play for the month of September.

Knife Hit launched for Android on 20th January 2018, it's revenue in September 2018 was a combined \$80k across Apple and Android devices. Knife Hit uses similar monetization methods as the ones proposed in DIY Saga.

In Knife Hit players can watch an ad after they fail a level in order to receive a second life. There's an internal economy in Knife Hit in the form of apple slices, the player can spend the slices to receive a random knife customization. They can spend more apples to unlock a random customization from a "Higher quality" customization pool. The players can also spend real money to purchase knives and knife packs.

Yaniv Nizan, CEO of SOOMLA, Monetization Measurement Platform, wrote for GameAnalytics;
42 Ways to monetize your mobile game.

#10 Videos – ad revenue

#25 Customisation – hard currency

#31 Surprise boxes/loot boxes containing a random customization – costs soft currency

AdColony would be better for video ads (#10 on GameAnalytics). Adcolony SDK supports value exchange (V4VC) video ad placements. Allows players to unlock premium features or virtual rewards i.e. x2 rewards or 2nd chance. (Check appendices)

Adcolony Instant Play Ads are used in Crossy Road when the player wants to double their free reward. The same strategy will be in DIY Saga.

Ad mediation would be the best way to go as it connects to multiple ad networks at once. AdMob mediation has support for over 30 third-party ad networks, including AdColony which we have already considered.

In a research report published by SOOMLA (Check appendices), who were mentioned earlier in this section, the leading mediation platforms are reviewed from a few different aspects. The aspects we're interested in are;

Platform and Game Engine support.

Ad Format specialization (Video for DIY Saga).

Ad network support – how many networks are available to us.
What special features would be useful for DIY Saga.

We want a platform that is video oriented, supports the Unity Engine, and has superior coverage for video networks. The platform that best suits monetization in DIY Saga is Fyber Ad mediation. Fyber currently supports 15 Ad networks, 13 of which are from the top 20. Included is AdColony with their Instant Play HD videos, that are used in Crossy Road. Fyber has the best coverage of video networks and has put a strategic focus on gaming publishers, so supports the Unity engine.

Resources	How it is produced/where it comes from	How it is consumed/where it goes
Coins	The coins are earned through timed free rewards. The player can double the amount rewarded by watching an ad.	The coins are spent on unlocking a random customization option. Loot boxes will contain one of the customization options.

As seen in the Excel sheet below, the simple internal economy is laid out. The soft currency in the game is Coins (g). The coins can only be earned through the free gifts that have to recharge after they're opened. The time to recharge is incremental after the first one is opened and is limited to 6 hours after the 7th one is opened.

The only thing the coins can buy are loot boxes which will contain a random customization for the nails, screws, and saws.

The free gift can give from 40 – 200 coins but the result can be doubled by watching an ad. The loot boxes cost 100g so early on the player has a chance to try out the customization options and see how they can change the visual and audio experience. If they want to try more customizations they will have to wait longer for the free gift but will more likely double the outcome, or they will be converted into a paying user by purchasing one of the skins.

The skins will be priced as shown in the Excel sheet below modelling the internal economy of the game. The “basic” skins (Only visual changes) will be priced the lowest at around £0.50 and the skins which change more than visual elements but also audio elements will cost more, up to £1.00.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	Resource			Source			Drain				Value			
2	Coins (g)			Free gift			Lootboxes			Free gift	40g - 200g			
3										Can be doubled by watching an ad	80g - 400g			
4														
5	Customizations			Recharge Time						Loot box	100g			
6	Nails			1st	Instant									
7	Screws			2nd	3 mins									
8	Saws			3rd	6 mins					Nails	£0.50 - £0.80			
9				4th	30 mins					Screws	£0.50 - £0.80			
10				5th	1 hour					Saws	£0.80 - £1.00			
11				6th	3 hours									
12				7th	6 hours									
13				8th	6 hours									
14														
15														

IDENTIFICATION, DISCUSSION AND RATIONALE FOR USE OF CUSTOM GAME ANALYTICS

Custom events

Custom event	Discussion
When the player opens the free reward and when the free gift reward becomes available	Do people want more free coins? How quickly do they open the free gift from when it becomes available
reward_opened	The player has opened the free gift
reward_available	The reward has become available
Player interaction with first Nail of the game	Tracking to see how easy it is for new players to understand the core mechanics.
ad_continue	Does the player watch the ad to continue their game? What level? Is the level too hard? Can it be changed to make it flow better?
ad_double	The player watches an ad to double their coin amount from the free reward. Should the free reward timer be decreased if players tend to double down? Should there be a reward system to directly reward players with coins for watching a video?
Number of ads watched daily / daily active	How many ads do players watch daily on average? Can I increase the frequency of ads?

Funnels

Funnel based on the level_complete event. Level progression is linear and we want to measure retention and conversion on a per stage basis. Are there bottlenecks in the flow of the levels?

Unity Standard events taken from the Unity documentation to be included in the game;

screen_visit	Player opened a screen in the UI, such as a high score or settings screen. Google play page. Credits.
level_start	Player started a level.
level_complete	Player successfully completed a level.

level_fail	Player lost a level.
first_interaction	Player completed any interaction after opening the game for the first time.
store_opened	Player opened a store.
store_item_click	Player selected an item in a store.
iap_transaction	Player spent real-world money to make an in-app purchase.
item_acquired	Player acquired a resource within the game.
item_spent	Player expended an item within the game.
ad_offer	Player had an opportunity to watch an ad.
ad_start	Player started watching an ad.
ad_complete	Player finished watching an ad.
ad_skip	Player skipped an ad before completion.
post_ad_action	Player completed an action prompted by an ad.
user_signup	Player connected with a social network. Google play games.

FRONT/BACK OF BOX DESCRIPTION/IMAGE or APP STORE PITCH

Target distribution platform is mobile. The thumbnail icon will be wood coloured background with a nail about to be hammered into the wood. Keep it simple. Historically, apps that do well have simple icons. The popular apps that were investigated to compare to DIY Saga all have simple icons.

Description:

Hammer nails, screw screws, and saw wood in order to complete your DIY project. Advance through levels and set high scores to compete with your friends.

Earn coins and unlock new skins for your project.

Tons of fun in this endless construction mode

Features:

Free to play

One finger control

Simply gameplay

Collect skins to enjoy weird and wacky construction projects

Hammer nails, screw screws, and saw wood. Reach that high score

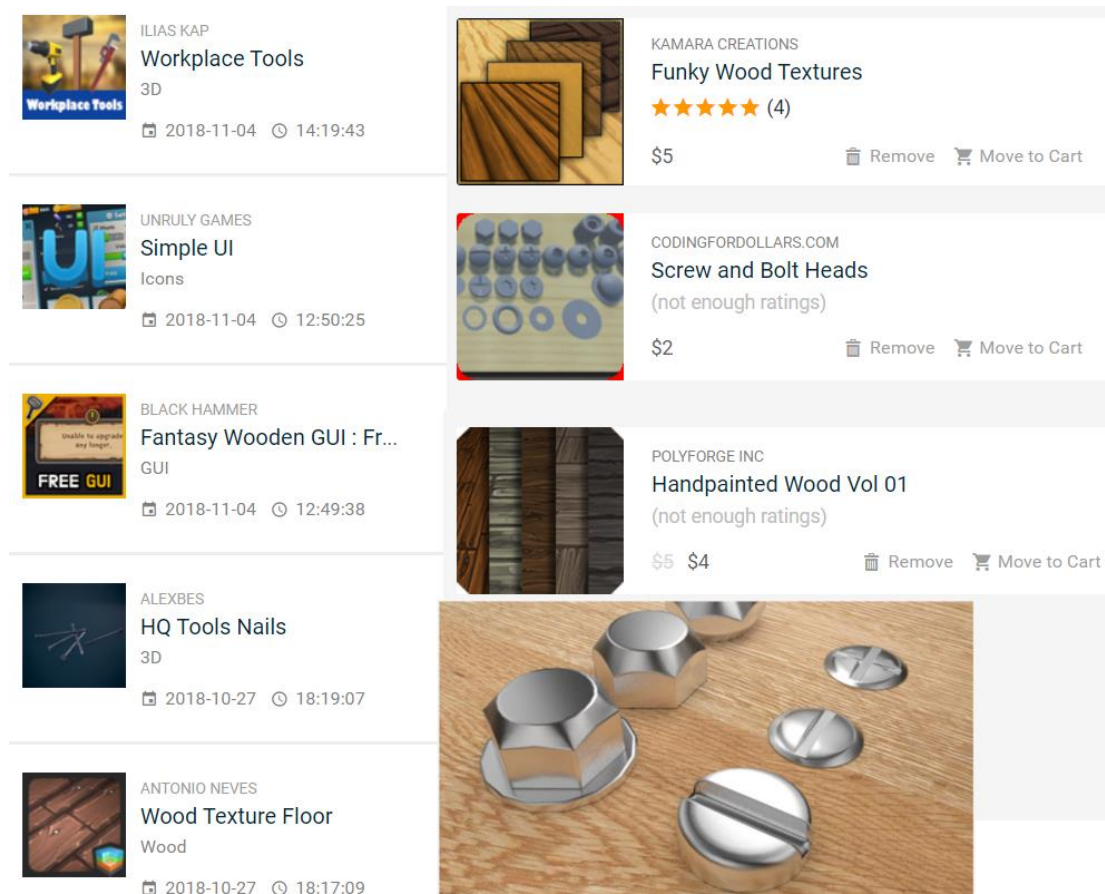
DISCUSSION OF TECHNOLOGY YOU ARE USING AND WHY.

For the development of the game, the Unity engine will be used as it more convenient for mobile games. Also, the technology to be used for analytics and serving ads is easily integrated with Unity. The Unity asset store is most convenient for the development too, it is very easy to find and include assets from the asset store.

We'll be using both Unity Analytics and GameAnalytics to track usage for the game. This will allow us to take advantage of both services and whatever special features they offer.

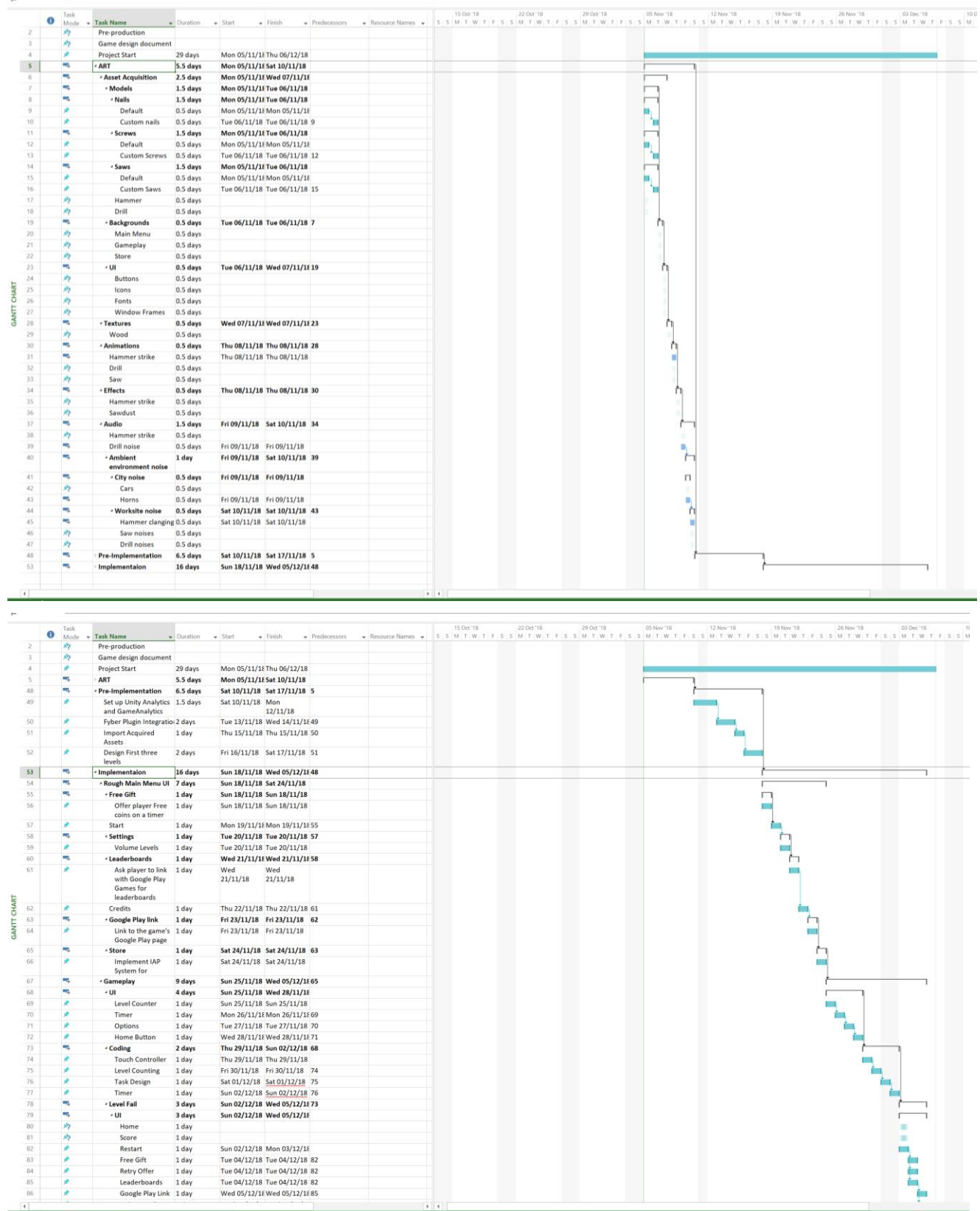
To serve ads to the players we'll be integrating the Fyber Plugin into Unity. Fyber provides the best coverage for video ads which is the primary way we will be serving ads in DIY Saga.

Below is an example of some of the art assets going to go into the game;



WORK/PROJECT PLAN FOR GAME IMPLEMENTATION

Here is a project plan for asset acquisition and game implementation;



APPENDIX

Publisher/Developer F.A.Q.. (2016) Available at: <http://support.adcolony.com/customer/en/portal/articles/684224-publisher-developer-f-a-q-> (Accessed: 02/11/18).

Top 6 Mobile Ad Mediation Platforms - Full Analysis. (2016) Available at: <http://blog.soomla.com/2016/07/top-6-mobile-ad-mediation-platforms-full-analysis.html> (Accessed: 03/11/18).

Nizan, Y. (2013) **42 Ways to Monetize Your Mobile Game.** Available at: <https://gameanalytics.com/blog/42-ways-to-monetize-your-mobile-game.html> (Accessed: 02/11/18).

AUDIO. (2018) Available at: <https://www.gamedevmarket.net/category/audio/> (Accessed: 05/11/2018).

SOUNDS. (2018) Available at: <https://freesound.org/browse/> (Accessed: 05/11/2018).

Crossy Road : https://play.google.com/store/apps/details?id=com.yodo1.crossyroad&hl=en_GB

Color Switch : <https://play.google.com/store/apps/details?id=com.colorsswitch.switch2>

Knife Hit : <https://play.google.com/store/apps/details?id=com.ketchapp.knifehit>

Run Sausage Run : <https://play.google.com/store/apps/details?id=com.crazylabs.sausage.run>

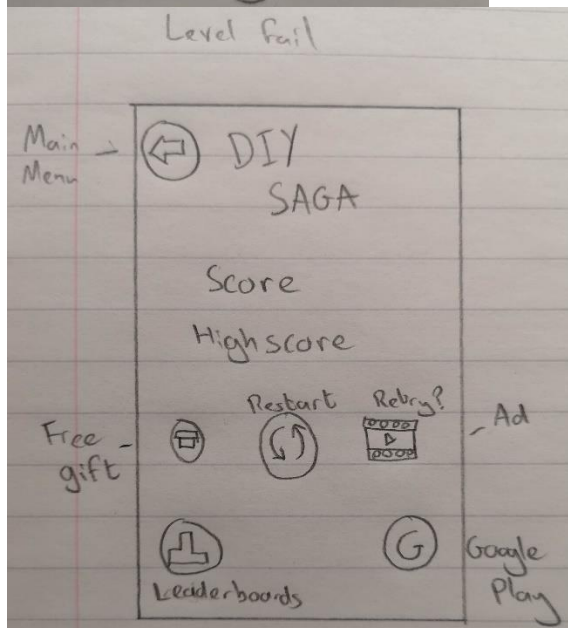
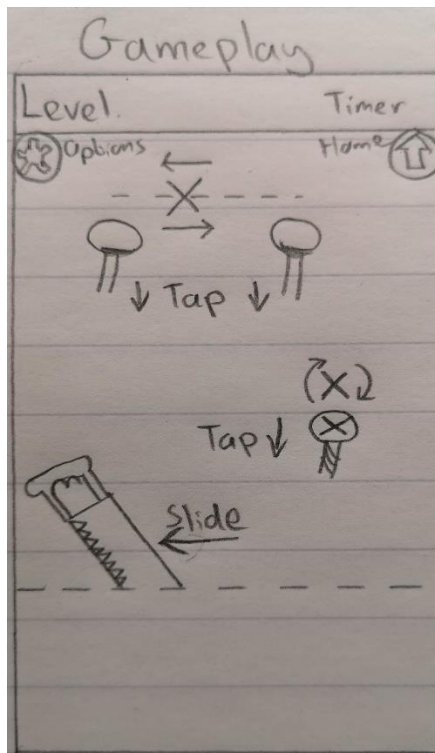
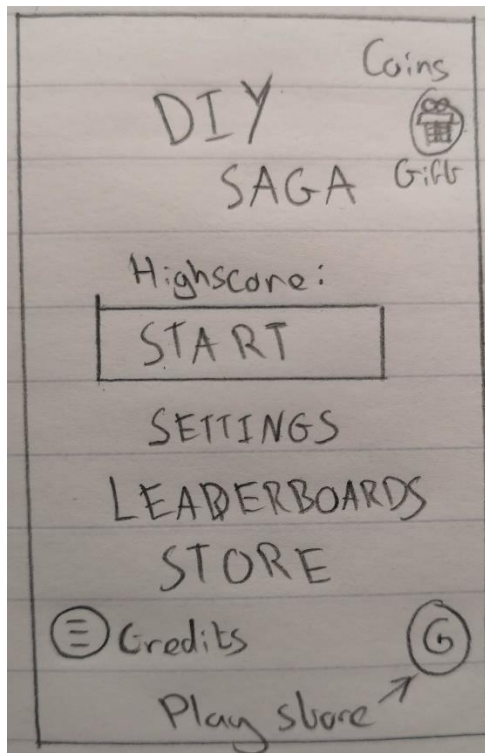
Helix Jump : <https://play.google.com/store/apps/details?id=com.h8games.helixjump>

Sensor Tower : <https://sensortower.com/>

App Annie : <https://www.appannie.com/en/>

Fyber Ad Mediation : <https://www.fyber.com/>

Concept Sketches



Concept sketches for;
Main Menu
Gameplay
Level Fail screen

Revenue Data and Rank History for example apps

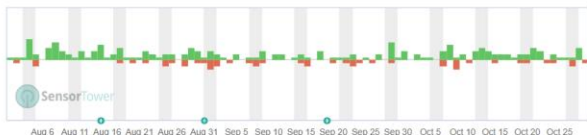




Keywords found

granny mario food run dune slice escape games rush
arcade boss six fit knife action swift entertainment balloon
steve tomb knight kitchen emily mask lab dummy string
kart hotdog sausage prince

Review Breakdown Per Day



Keywords found

roblox bacon run ways goosebumps running poop retarded
knife kill hot hella gruesome buddy butt bored grandma
saw die lab whole killing bra addiction scream sausage
hotdog trouble weird dumb stupid

Review Breakdown Per Day



Rank History

Countries/Regions

United States

United States - Oct 1, 2018 - Oct 30, 2018

Android

Save

Subscribe & Share

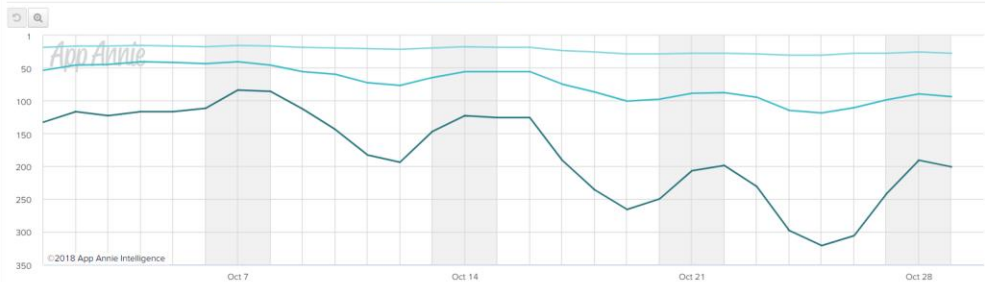
Export

Date Range

Oct 1, 2018 - Oct 30, 2018

Download Ranks Grossing Ranks

Hour Day



All Overall Games Arcade (Games)
United States US-Overall US-Games US-Arcade (Games)



Rank History

Device

iPhone

Countries/Regions

United States

iPhone - United States - Oct 1, 2018 - Oct 30, 2018

Apple

Save

Subscribe & Share

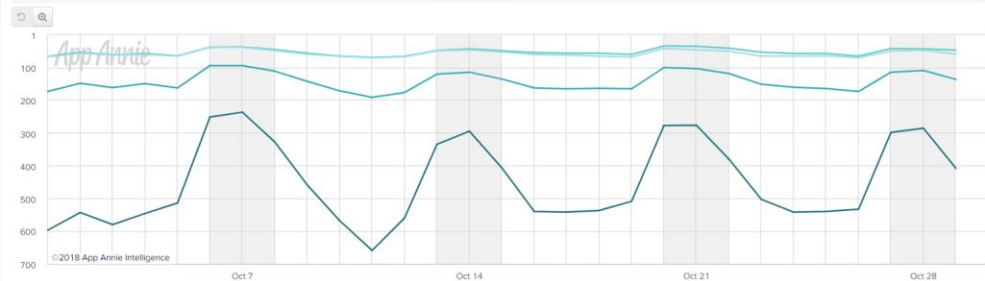
Export

Date Range

Oct 1, 2018 - Oct 30, 2018

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Hour Day



All Overall Games Action (Games) Arcade (Games)
United States US-Overall US-Games US-Action (Games) US-Arcade (Games)



Knife Hit
Ketchapp
iTunes

Sensor Score 95
Visibility 71
Internationalization 74

Downloads
1000k
Sep 2018 Worldwide

Revenue
\$60k
Sep 2018 Worldwide

Keywords found

uno ballz slime flip sing looper ways juegos tap quik
wifi jump kids fun sky shooter games rush arcade six
knife action number entertainment fast sword knight hit cut
fruit keychain

Review Breakdown Per Day



Knife Hit
Ketchapp
Google Play

Sensor Score 100
Visibility 82
Internationalization 65

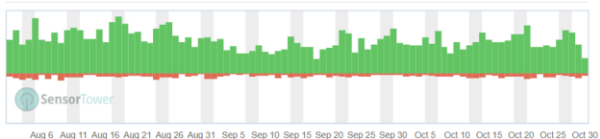
Downloads
3m
Sep 2018 Worldwide

Revenue
\$20k
Sep 2018 Worldwide

Keywords found

fortnite target rider aa boss knife kidding twist hit wood
die stage lemon agar pineapple challenge mmm flippy
dumb aerobics kind tomato tapping hacked chop throw dam
tappy joc awesome throwing

Review Breakdown Per Day



Knife Hit
Free Arcade (Games)

Rank History

Countries/Regions
United States

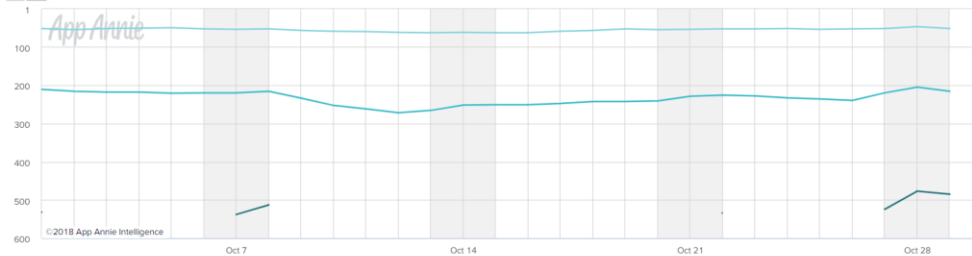
United States - Oct 1, 2018 - Oct 30, 2018

Android

Save Subscribe & Share Export

Date Range
Oct 1, 2018 - Oct 30, 2018

Download Ranks Grossing Ranks



All Overall Games Arcade (Games)
United States US-Overall US-Games US-Arcade (Games)



Knife Hit
Free Games

Rank History

Device Countries/Regions
iPhone United States

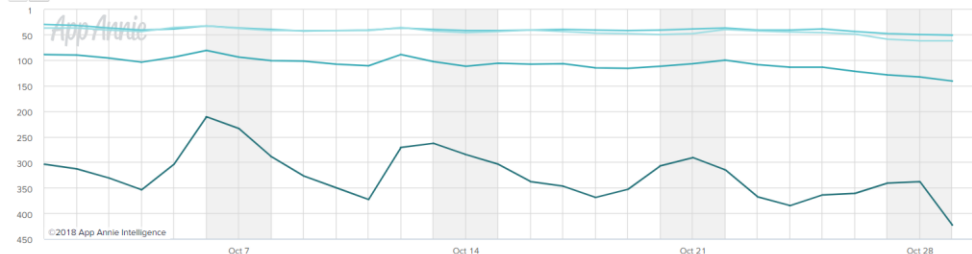
iPhone - United States - Oct 1, 2018 - Oct 30, 2018

Apple

Save Subscribe & Share Export

Date Range
Oct 1, 2018 - Oct 30, 2018

Download Ranks Grossing Ranks



All Overall Games Action (Games) Arcade (Games)
United States US-Overall US-Games US-Action (Games) US-Arcade (Games)