

# Building Digital Tools Assisting Escape Room Owners

Survey and Analysis Stage, COM3610

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This report is submitted in partial fulfilment of the requirement for the degree of Computer Science with a Year in Industry by Simon Fish.

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**Signed Declaration**

All sentences or passages quoted in this report from other people's work have been specifically acknowledged by clear cross-referencing to author, work and page(s). Any illustrations that are not the work of the author of this report have been used with the explicit permission of the originator and are specifically acknowledged. I understand that failure to do this amounts to plagiarism and will be considered grounds for failure in this project and the degree examination as a whole.

Simon Fish

## Abstract

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# Chapter 1

## Introduction

Escape rooms are physical, interactive experiences in which a group of participants must solve puzzles to escape a locked room, solve a mystery, or otherwise meet some goal in a particular timespan. They are a phenomenon that has existed since around 2007 Nicholson (2015), and are a growing industry. Escape rooms are run both by enthusiasts as solo ventures, and as franchises across the country.

The aim of this project is to build tested tools to meet the needs of escape room owners. Research will be focused towards exploring the needs of escape room owners, such that a product can be designed and built to target one or several of these. These needs may be related to issues such as making sure a timer is visible to the group, or to processes that currently take more time than necessary, such as posting photos of teams to social media (Woff (2019)).

## Research Questions

I have identified two research questions, which this stage of the project will be focused towards answering:

1. What has been reported from studies conducted using escape rooms, particularly with regards to their mechanics?
2. What can be drawn from these reports?





## Chapter 2

# Literature Survey

Escape rooms have grown popular in many locations across the world as a recreational activity (Nicholson (2015), Stasiak (2016)), even serving as a tourist attraction (Dilek and Kulakoglu Dilek (2018)). Nicholson reports that the *Real Escape Game* by SCRAP was the earliest well-documented activity branded as such. SCRAP has gone on to develop escape rooms at a much larger scale than the typical escape room, which serves teams of an average size of 4.58 people (Nicholson (2015)).

Escape rooms' relative infamy means that they have not become a widespread research target, though **their use in education** is becoming an area in which research is growing. Gamification brings a variety of benefits to the field of education (Kiesler et al. (2011)), which are capitalised upon by those implementing escape rooms in education. There are various tested means of implementing escape rooms in the classroom, from Breakout EDU<sup>1</sup> to recruiting an agency for this purpose (Zhang et al. (2018)), to implementing one using resources already available in the classroom. This brings some benefits not available to commercial escape rooms, which employ physical puzzles that require a reset (Woff (2019)). In particular, a study by López (n.d.) organised its puzzles in a manner whereby ordering is not necessary, allowing multiple groups to attend the room at once. This can have commercial application, and could be considered by those exploring portable escape rooms as an outlet, such as Tuzak, an Istanbul company developing escape games (Gündüz (2018)).

**The participant focus in existing research** seeks to understand the sentiment of those who attend escape rooms. Often, this is with the intent of drawing conclusions about where escape room owners should focus their efforts, or the effects of an owner's design choices on their participants (Wiemker, Elumir, and Clare (2015)). These, however, do not target the more fundamental changes that can be made in how an escape room is run day-to-day, and do not expose the difficulties of running an escape room.

## Keywords

I identified the following keywords for use in my search. The search was conducted using the Google Scholar search engine.

- escape room owner
- escape room host
- escape room implementation
- escape room software

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<sup>1</sup><https://www.breakoutedu.com/>



## Chapter 3

# Requirements and Analysis



## Chapter 4

# Progress

I have been able to make good progress in defining my scope this semester. The most important thing I have had to do is to get in contact with the escape room community - I have been able to reach out to all of Sheffield's escape rooms, though only one has returned any interest in supporting the project. This was The Lockup Escape Rooms in Sheffield.

I got in contact early in November, which was a busy time for all rooms. In initial communications with The Lockup, Liam offered a free attempt at the escape room pro bono. I took up this offer on the 29th November.

Before this, I met with Liam on the 20th November to discuss the challenges he faces as an escape room owner, and his philosophy in developing the rooms he offers at The Lockup. Engagement, visibility and breakability all inspire his approach: the entire party must be able to interact with, and be engaged by, puzzles in the room, and the puzzles should not take long to reset to their initial state for the next party that attends the escape room (Woff (2019)). Liam and I discussed some areas that could be targeted, which will inspire a survey I send to the Facebook group created by Nicholson (2015).

Nicholson runs a Facebook group<sup>1</sup> for escape room enthusiasts, encompassing both owners and participants, to which I sought and gained access as part of my work. The majority of posts, at the time of writing, seem to be from enthusiasts who report back from rooms they have attended, though I have seen posts about types of puzzles that can be implemented. I intend to survey this group, as it appears to be a central hub for what may be a sparse online community.

Though I have not yet locked in my approach, I have been learning to develop for the ESP32 microcontroller and the unPhone platform. This provides a strong framework for IoT development at a low cost and may be an outlet to explore in the development of my artifact.

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<sup>1</sup><https://www.facebook.com/groups/608883549212939/>



## Chapter 5

# Conclusions and Project Plan

Dilek, Sebahattin Emre, and Nur Kulakoglu Dilek. 2018. “Real-Life Escape Rooms as a New Recreational Attraction: The Case of Turkey.” *Anatolia* 29 (4): 495–506.

Gündüz, Şafak. 2018. “Preventing Blue Ocean from Turning into Red Ocean: A Case Study of a Room Escape Game.” *Journal of Human Sciences* 15 (1): 1–7.

Kiesler, Sara, Robert E Kraut, Kenneth R Koedinger, Vincent Aleven, and Bruce M McLaren. 2011. “Gamification in Education: What, How, Why Bother?” *Academic Exchange Quarterly* 15 (2): 1–5.

López, Ángela Gómez. n.d. “The Use of Escape Rooms to Teach and Learn English at University.” *RESEARCH, TECHNOLOGY AND BEST PRACTICES IN EDUCATION*, 94.

Nicholson, Scott. 2015. “Peeking Behind the Locked Door: A Survey of Escape Room Facilities.” *White Paper Available Online at [Http://Scottnicholson.com/Pubs/Erfacwhite.pdf](http://Scottnicholson.com/Pubs/Erfacwhite.pdf)*.

Stasiak, Andrzej. 2016. “Escape Rooms: A New Offer in the Recreation Sector in Poland.” *Turyzm* 26 (1): 31–47.

Wiemker, Markus, Errol Elumir, and Adam Clare. 2015. “Escape Room Games.” *Game Based Learning* 55.

Woff, Liam. 2019, November.

Zhang, Xiao Chi, Hyunjoo Lee, Carlos Rodriguez, Joshua Rudner, Teresa M Chan, and Dimitrios Papanagnou. 2018. “Trapped as a Group, Escape as a Team: Applying Gamification to Incorporate Team-Building Skills Through an ‘Escape Room’experience.” *Cureus* 10 (3).