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| Figure - Alan Turing aged 16(1928)  Playing the Turing Game (NAG-21-266)  Software Requirement Specification | Abstract  This document outlines the requirements for the Turing game solution, it will cover considerations with regards to targeted operating systems and any software or hardware concerns.  Callum Gray  Playing the Turing Game (NAG-21-266)  Issue:  Word Count:  8 February 2022 |

| **Issue** | **Date** | **Details of Amendments** | **Amended By** |
| --- | --- | --- | --- |
| 1 draft A | Dec 21 | Created first draft of requirements document | Callum Gray |
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# Amendment History

# Distribution

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| **Name** | **Role** |
| Callum Gray | Project Lead |
| Bing Wang | Project supervisor |
| Neil Gordon | Project Second Marker |
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# Abbreviations

|  |  |
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| **Abbreviation** | **Word or Phrase** |
| CSCI | Computer Software Configuration Item |
| TGF | Turing Game Framework |
| SRS | Software Requirement Specification |
| CA | Client Application |
| SA | Server Application |
| UI | User Interface |
|  |  |

# Scope

## Identification

The Table below identifies the Turing Game System

The Contents of this document should be used as for the design and creation of a System/Framework that will aid a teacher in a classroom to explain the principle behind the Turing Game. This document contains key aspects that cover the design, requirements, and Testing of the Turing Game Framework the students will be allocated a room with either another student or an AI. They Will also be given a role either interviewer or subject

## System Overview

An overview of the Truing Game Framework is a Framework that will allow one or more users to take part in the Turing Game, a thought experiment devised by Alan Turing to test whether a computer was Truly intelligent. The aim of this framework is for it to be designed with education in mind being able to use the framework in a school setting to demonstrate the Concept to younger students. It will be made up of two parts a Controller/Server Application and the client application. Along with a form of chatbot to take the place of the AI.

## Document Overview

This Document will cover the Requirements for the Various Framework aspects. It will cover the testing and validation of the requirements outlined for the various applications. The Information contained within this document should be used to inform the design process of the Framework concerned.

# Requirements

## Required States and Modes

The Client and Controller applications shall have 2 modes these will be referred to as.

* The Initial State
* The Active State

In the initial State the applications will have been started up and will not be connected

In the active state the applications will be in communication with each other.

## CSCI Capability Requirements

The CSCI Capability requirements are written and based upomn each of the different software components that make up the TGF system.

### Client Application Requirements

The requirements outlined in this section will cover the Client Application referred to as the Solution

|  |  |
| --- | --- |
| Ref | Requirement |
| TGF\_REQ\_CA\_01 | The Solution shall provide the capability to connect to the Controller Application |
| TGF\_REQ\_CA\_02 | The Solution shall provide the capability to send data to the Controller Application |
| TGF\_REQ\_CA\_03 | The Solution shall provide the capability to receive data from the Controller Application |
| TGF\_REQ\_CA\_04 | The UI shall provide the capability to display a message history |
| TGF\_REQ\_CA\_05 | The Solution shall have a clear and user-friendly User Interface |
| TGF\_REQ\_CA\_06 | The UI shall provide the capability for the user to enter text |
| TGF\_REQ\_CA\_07 | The Solution shall provide the capability for the user to submit their choice as to what they are speaking to |

### Server Application Requirements

The requirements outlined in this section will cover the Controller/Server Application referred to as the Solution

|  |  |
| --- | --- |
| Ref | Requirement |
| TGF\_REQ\_SA\_01 | The Solution shall provide the capability to connect to the Client Application |
| TGF\_REQ\_SA\_02 | The Solution shall provide the capability to send data to the Client Application |
| TGF\_REQ\_SA\_03 | The Solution shall provide the capability to receive data from the Client Application |
| TGF\_REQ\_SA\_04 | The Solution shall provide the capability to create virtual Rooms for the Client applications |
| TGF\_REQ\_SA\_05 | The Solution shall provide the capability to allocate Connected Clients to available rooms |
| TGF\_REQ\_SA\_06 | The Solution shall provide the capability to observe the data being shared in the rooms |
| TGF\_REQ\_SA\_07 | The Solution shall provide the capability to send data to the Chat bot Application |
| TGF\_REQ\_SA\_08 | The Solution shall provide the capability to receive data from the Chat bot Application |
| TGF\_REQ\_SA\_09 | The Solution shall have a clear and user-friendly User Interface |

### Chat Bot Application

The requirements outlined in this section cover the Chat Bot application referred to as the Solution

|  |  |
| --- | --- |
| Ref | Requirement |
| TGF\_REQ\_CB\_01 | The Solution shall provide the capability to receive text |
| TGF\_REQ\_CB\_02 | The Solution shall provide the capability to send Text |
| TGF\_REQ\_CB\_03 | The Solution shall provide the capability to answer questions |
| TGF\_REQ\_CB\_04 | The solution shall provide the capability to remember previous responses to questions within the current session |

# Qualification Provisions

The tests outlined in this section of the document are not depicted in a specific order of being carried out and shall be used to qualify the solution against the described Requirements.

|  |  |  |  |
| --- | --- | --- | --- |
| Requirement | ref | Test Description | Expected Outcome |
| TGF\_CA\_01  TGF\_SA\_01  TGF\_SA\_04 | Test\_1 | The Client application will be loaded up alongside the Controller application and then the number provided by the Controller will be entered into the Client application. | The Client application will change screens to display a message board and a role will have been assigned to the user which will be displayed on screen. |
| TGF\_CA\_02  TGF\_CA\_06  TGF\_SA\_03  TGF\_SA\_06 | Test\_2 | The client application and controller application will be loaded up, then connected as per Test\_1 then a message will be entered into the client application and sent. | The Controller application will be able to see the message that was sent via the Client application. |
| TGF\_CA\_03  TGF\_SA\_02  TGF\_SA\_05 | Test\_3 | Two Client applications will be loaded up along with the Controller Application. The clients will be connected to the controller and allocated a room. A message will be entered into one of the clients and then sent. | The second Client application will receive the message and be able to view it. |
| TGF\_CA\_04 | Test\_4 | Two client applications and a controller application will be loaded up. A series of messages will be sent between the two client applications. | The full history of the messages will be displayed on the client applications showing the messages from both. |
| TGF\_CA\_05  TGF\_SA\_09  TGF\_CB\_03 | Test\_5 | A group of user testers will use the TGF system and provide feedback on the UI using the user feedback forms provided | N/A |
| TGF\_CA\_07 | Test\_6 | Two Client applications and the controller applications will be loaded up. Once the clients are connected via the controller then the Client that is allocated the Interviewer role will choose their choice. | The Client, who is the Subject, will be shown what the Interviewer chose, and the interviewer will be told if they were right or wrong. |
| TGF\_SA\_07  TGF\_SA\_08  TGF\_CB\_01  TGF\_CB\_02  TGF\_CB\_04 | Test\_7 | The Client application and Controller Application will be Loaded up and connected, the Client will be connected to a room which contains the chatbot, The Client will then send a message, which the controller will direct to the Chatbot. The chat bot will then return a response. The same question will be asked multiple times along with a series of other questions. | The chat bot will acknowledge receiving the message. The chat bot will send a message to the controller in response which will be directed back to the Client. The repeated questions should return the same responses each time. |

# Table of Figures

[Figure 1 - Alan Turing aged 16 0](https://d.docs.live.net/00ae35dcf5f19903/Documents/Playing%20the%20Turing%20Game.docx#_Toc92115822)

# References

Copeland, B. J., 2005. The Essential Turing: The ideas that gave birth to the computer age. *Oxford: Oxford University Press.*

Turing, A., 1950. *Computing Machinery and Intelligence.* Manchester: s.n.