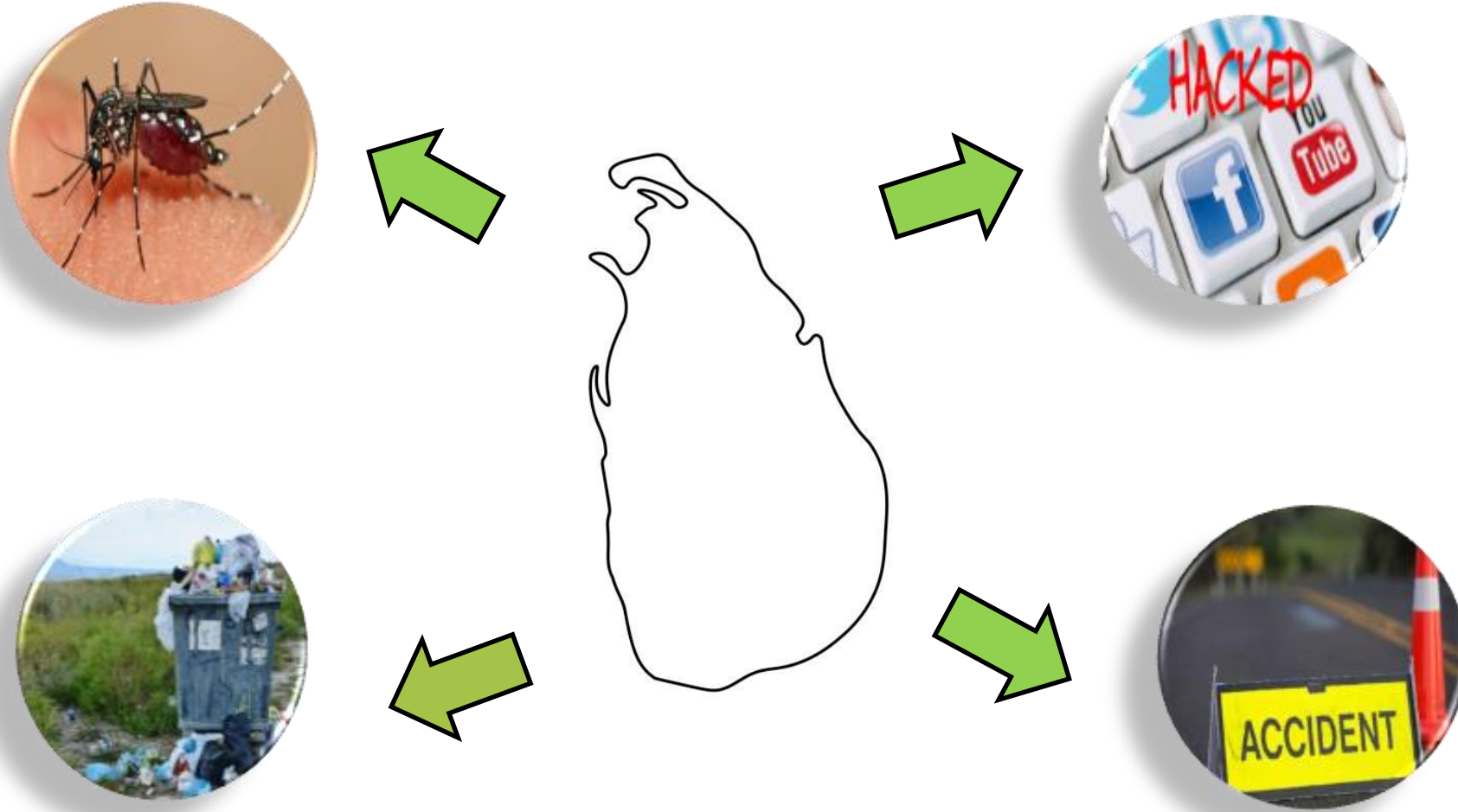


Public Awareness using Game Based Learning [AwareME]

2020-054

Research problem

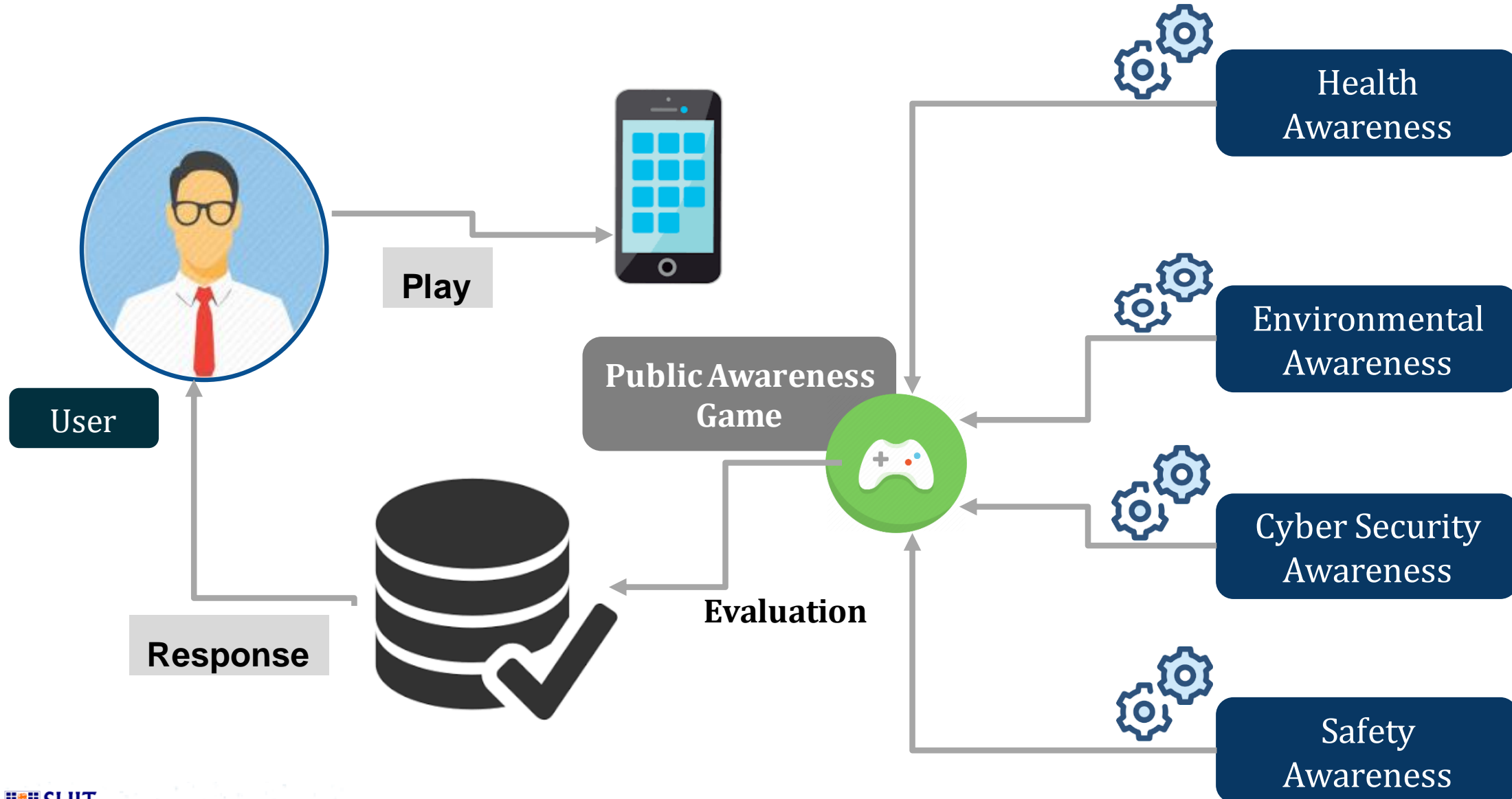


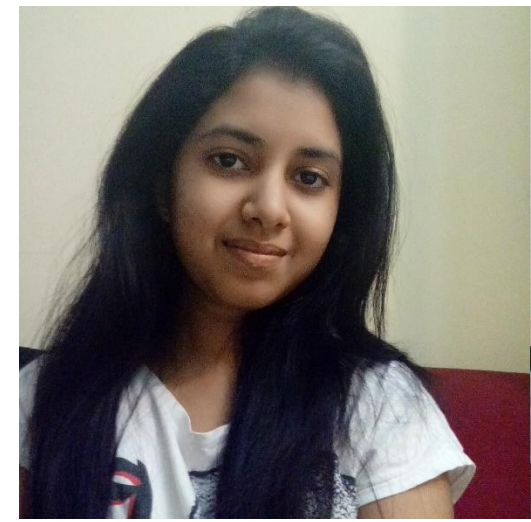
NO single public awareness platform

Research objectives

- To improve the quality of people by making them aware on environmental, safety, health and cyber security problems, using game-based learning platform
- Specific objectives;
 - ☐ To enhance the life span of humans through awareness on prevention of dengue
 - ☐ To save the nature by effective awareness on garbage disposal
 - ☐ To ensure the privacy and security in social media
 - ☐ To minimize accidents by enhancing road safety

System diagram





IT17013642 | S.N WIJESINGHE

Bachelor of Science Special (Honors) Degree in
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Specializing in Cyber Security

CYBER SECURITY AWARENESS – SOCIAL MEDIA

RESEARCH GAP

features	Social4school [1]	Friend inspector [2]	CyberCIEGE [3]	AwareME (proposed game)
User privacy violation awareness	✓	✓	✗	✓
Using virtual reality	✗	✗	✗	✓
Weak password and oversharing information awareness in Facebook	✗	✗	✗	✓
Identification of user abilities	✗	✗	✗	✓
No restrictions for different ages	✗	✗	✗	✓

Cyber Security awareness – Social Media

Research question

- Lack of awareness in people about social media usage.
- No effective awareness system at present.



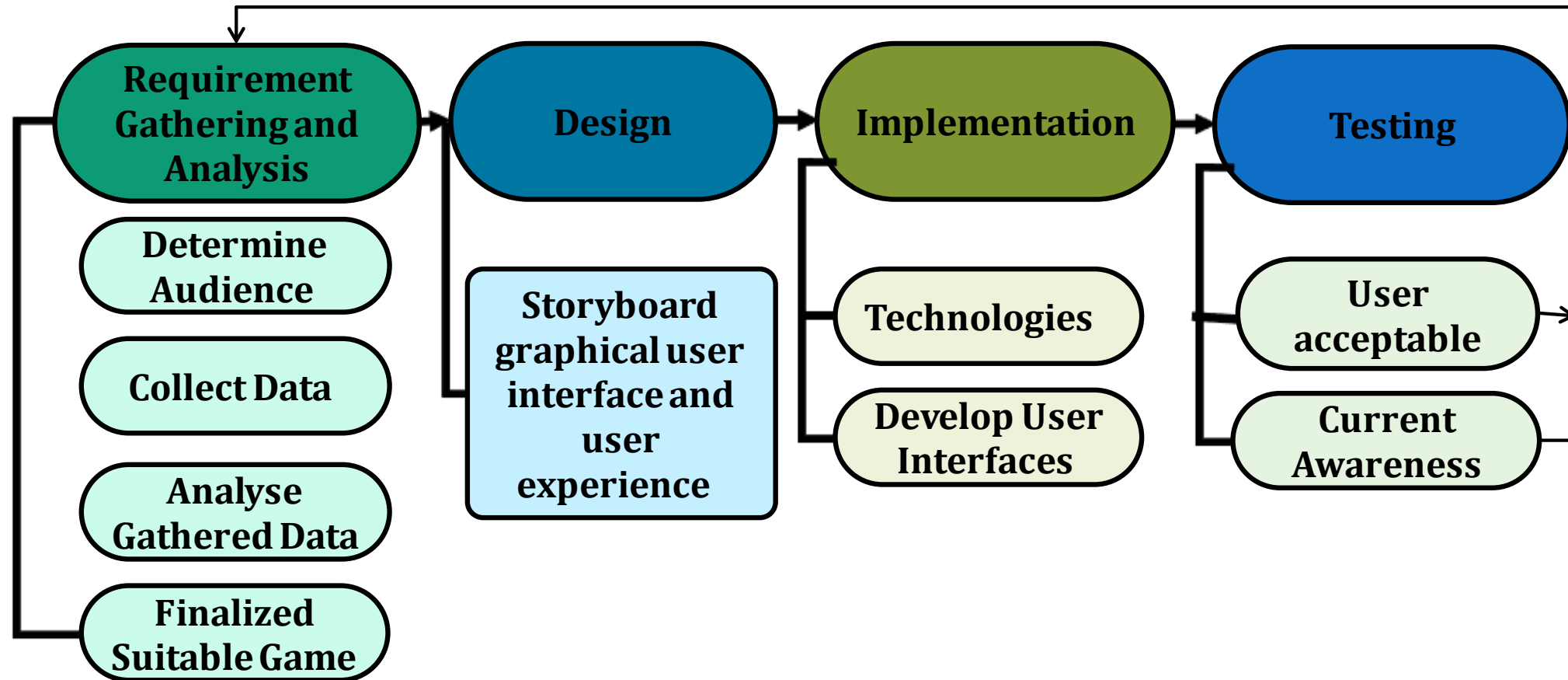
CYBER SECURITY AWARENESS – SOCIAL MEDIA

- ❑ Main objective is to improve the abilities of people by making them aware cyber security problems using game-based learning platform.

Sub Objectives

- Determination of the audience of the research.
- Gather data related to social media awareness level and Identify the current abilities of the people related to facing social media problems.
- Study previous researches and projects which has been done under the same topic.
- Select the most suitable game needed to be implemented.
- Design the gaming platform using 2D/3D/virtual reality.
- Identify the improvement of the users by testing their awareness level through a suitable mechanism.
- Test the awareness level.

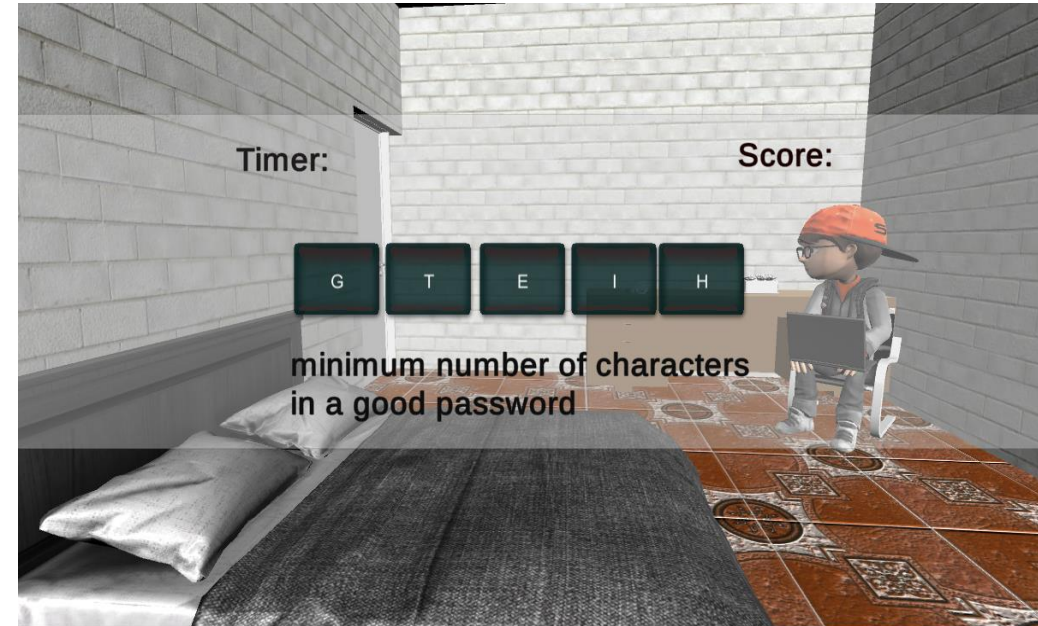
Cyber Security awareness – Social Media



Achievement

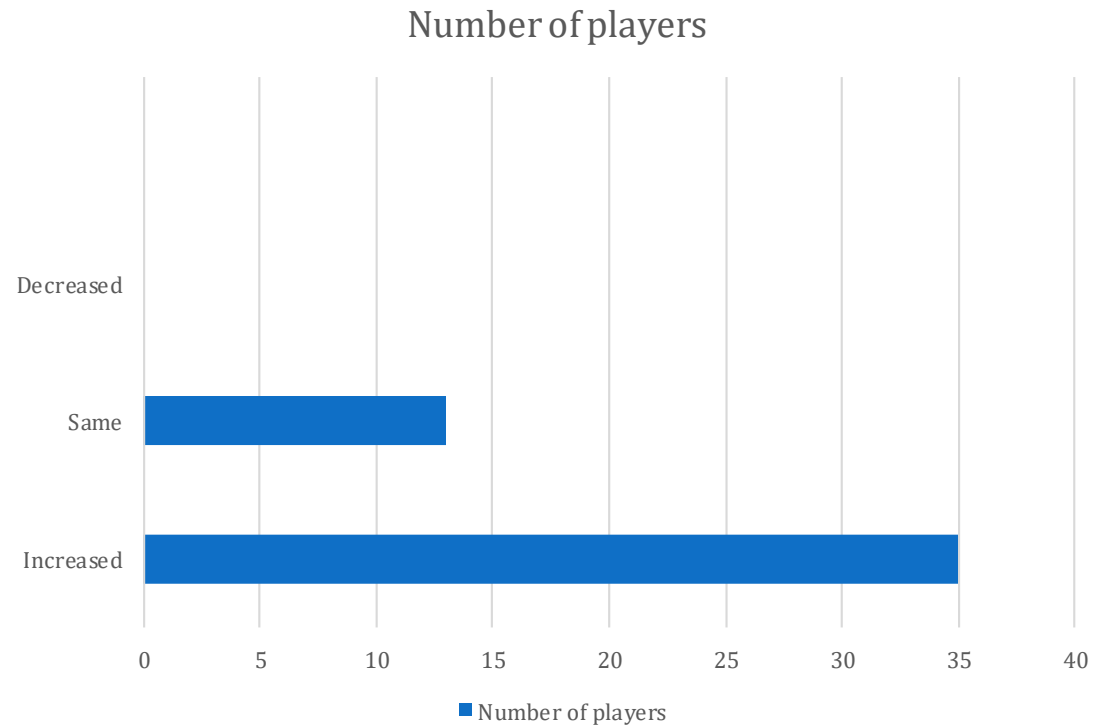
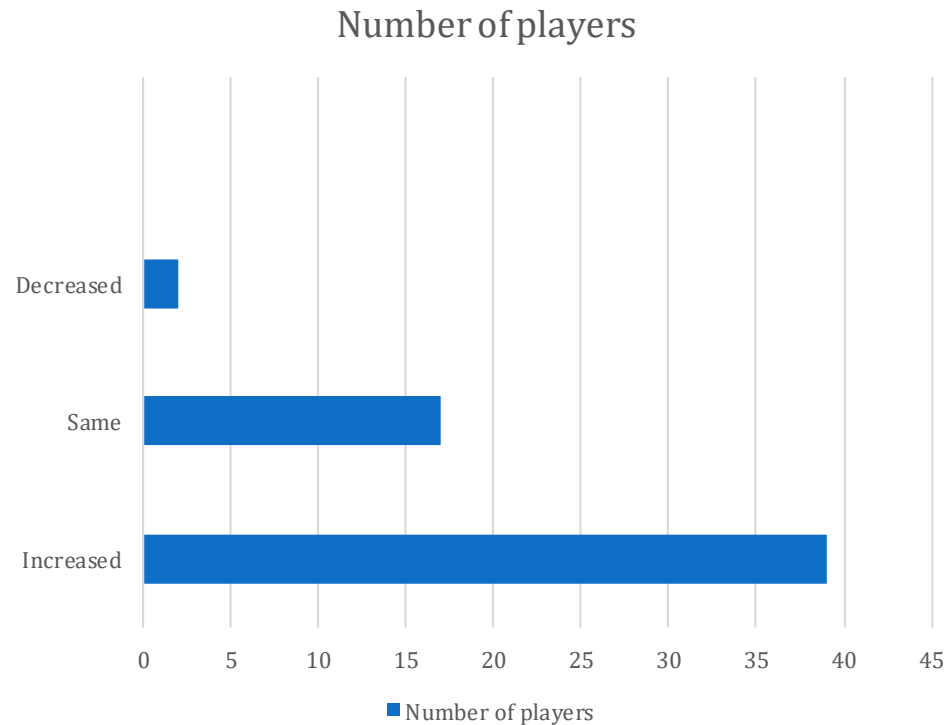


2D quiz game



3D puzzle Game

Achievement



60 people were used for the testing purpose. Majority had increased their awareness level.

Thus, it shows that this application is much useful in improving the awareness among public.



IT17160308 | DASSANAYAKE D.K.M.P.M.M

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HEALTH AWARENESS – DENGUE FEVER

Background

- According to the Health Ministry Reports Dengue Fever is the most widespread fever in Sri Lanka in past few decades
- Currently in Sri Lanka.2010, 2261 dengue infections and 24 deaths informed by WHO, after 10 years of time its increases to 55,894 infections and 74 confirmed deaths by the end of the 2019 October
- As a solution for the above-mentioned problems we are implemented a game base learning platform for increasing the public awareness about dengue fever.

HEALTH AWARENESS – DENGUE FEVER

Research Gap

Features	Sherlock Dengue Game [4]	Good bye dengue Game [5]	Design & Development Serious dengue game [6]	Dengue haemorrhagic fever game [7]	Proposed Game [AwareME]
Identifying the abilities	✓	✗	✗	✗	✓
Identifying the most suitable game	✗	✓	✗	✓	✓
2D modeling	✓	✗	✓	✗	✓
3D modeling	✓	✗	✓	✗	✓

HEALTH AWARENESS – DENGUE FEVER

Research Question

- Increasing number of dengue patients day by day
- Lack of awareness of people about dengue
- Lack of an awareness platform for people to be aware of dengue



HEALTH AWARENESS – DENGUE FEVER

Specific Objective

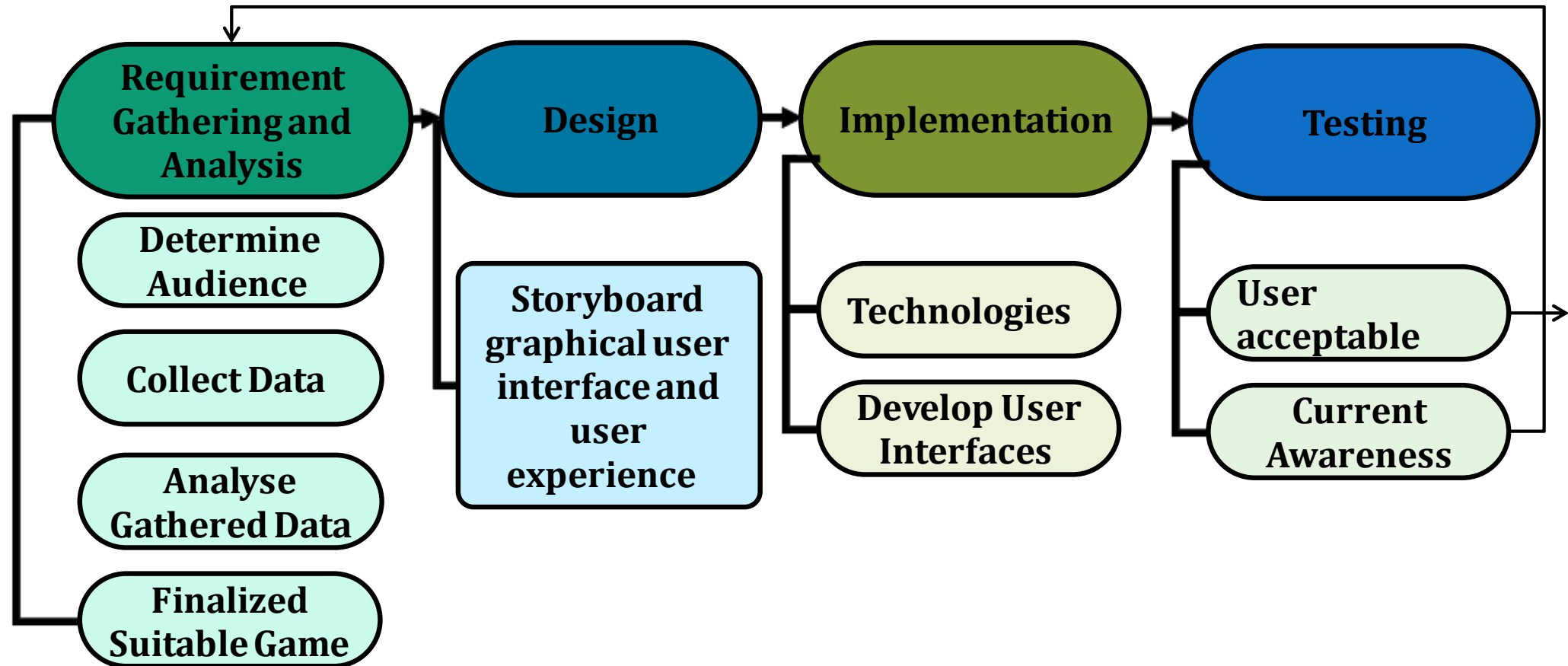
- Improve the abilities of people making them aware of dengue prevention by using the game-based learning platform.

Sub Objectives

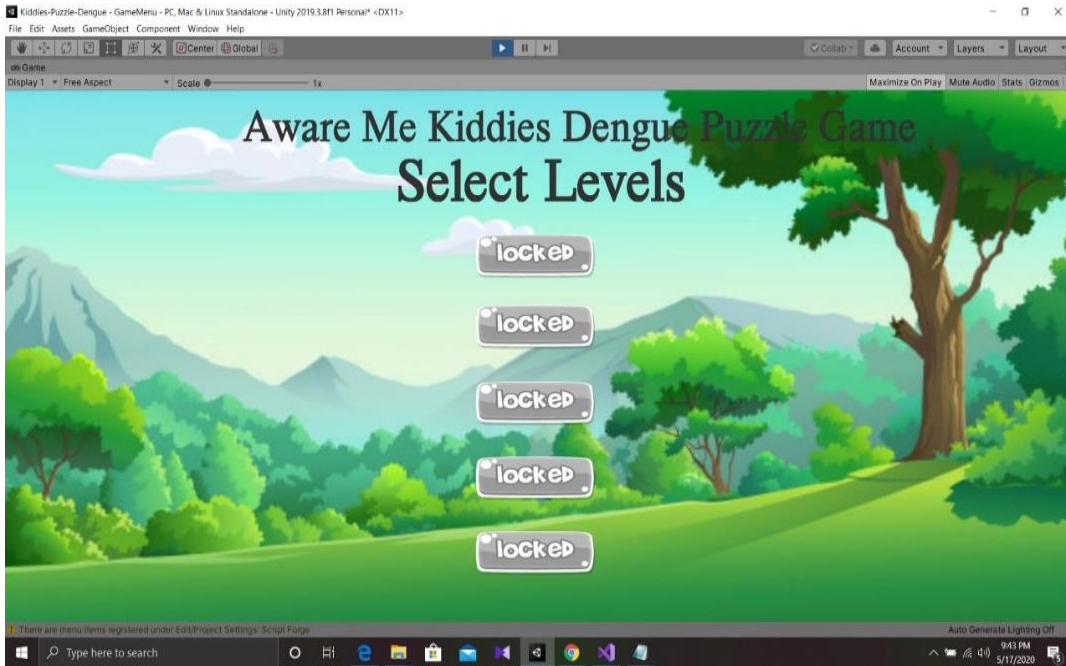
- Thinking ability improvement
- Improve effective decision making
- Improve the recalling ability
- Determination the audience of this research

Health awareness – Dengue fever

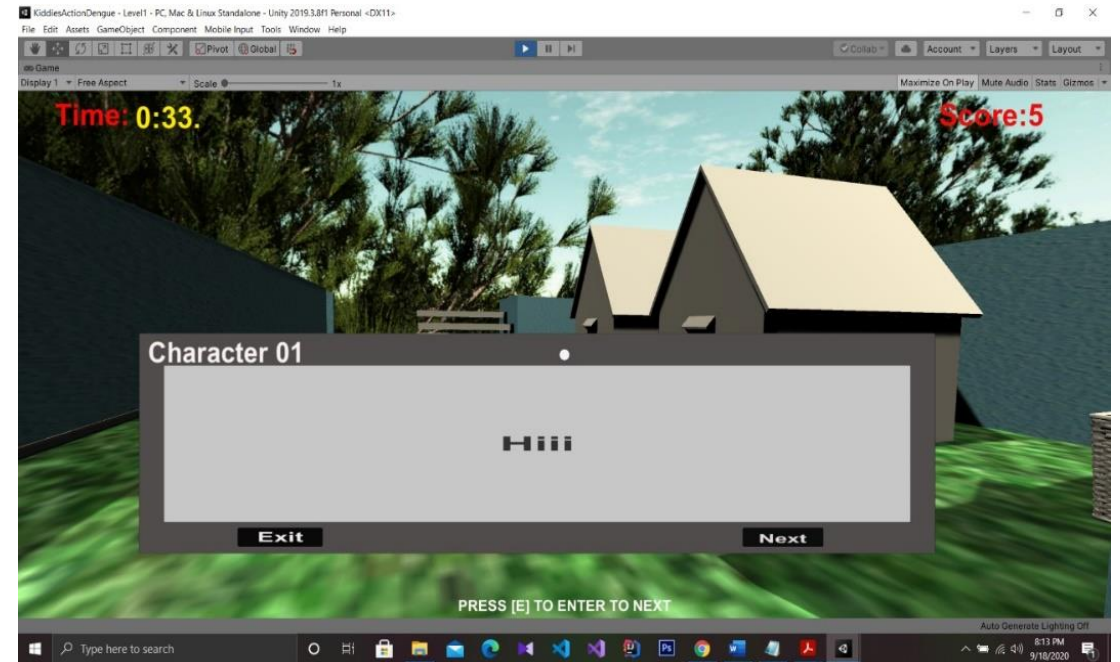
Methodology



Achievement

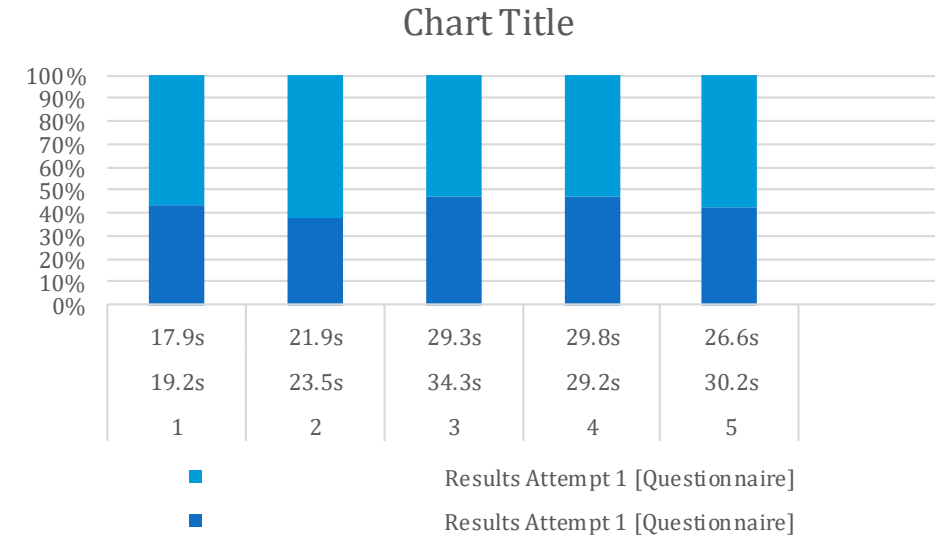
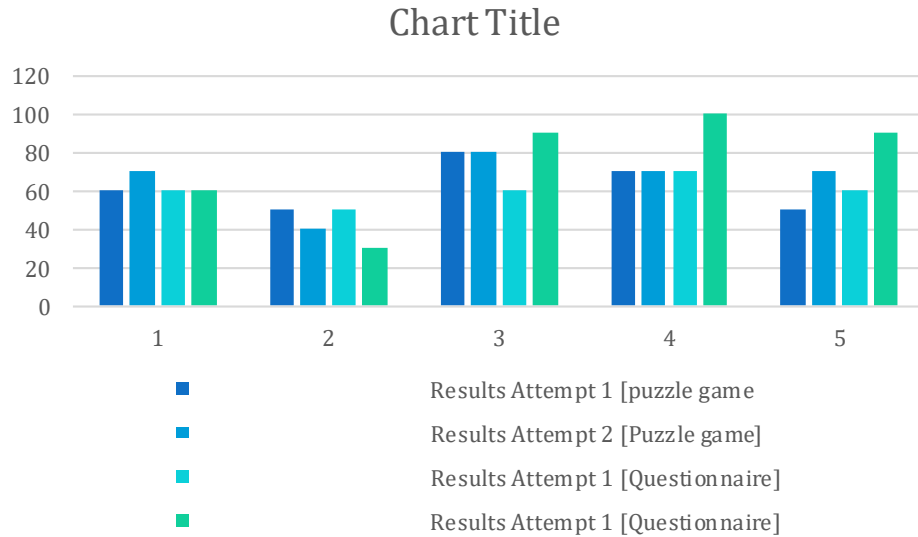


2D Kid's Game



3D Adult's Game

Achievement



- 50 people were used for the testing. 90 % had increased their awareness level according to the test results.
- Based on the analysis of the results, it turns out that this application is very useful for raising public awareness.



IT17701174 | T.L.C JAYASIRI

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ENVIRONMENTAL AWARENESS – GARBAGE DISPOSAL

Background

- Pollution from garbage is one of the most widespread social and environmental problems in Sri Lanka
- Sri Lanka generates 7,000 MT of solid waste per day [8]
- Western Province accounts for nearly 60 percent of waste generation.
- Garbage pollution is increasing day by day due to human ignorance.
- Therefore, we decided to create a garbage disposal awareness game using game-based learning.

ENVIRONMENTAL AWARENESS – GARBAGE DISPOSAL

Research Gap

Features	Trash Attack [9] 2019	iTrash [10] 2016	Attack of the Recyclops[11] 2018	Proposed game [AwareME]
Segregation of garbage (Bio-degradable, degradable , recycling)	✓	✓	✗	✓
Proper waste disposal	✗	✗	✓	✓
Identify Suitable game	✗	✗	✗	✓
2D Technology	✓	✓	✗	✓
3D Technology	✗	✗	✓	✓

ENVIRONMENTAL AWARENESS – GARBAGE DISPOSAL

Research Question

- Lack of awareness of people about garbage disposal
- No effective awareness platform for people to be aware of garbage disposal properly



ENVIRONMENTAL AWARENESS – GARBAGE DISPOSAL

Specific Objective

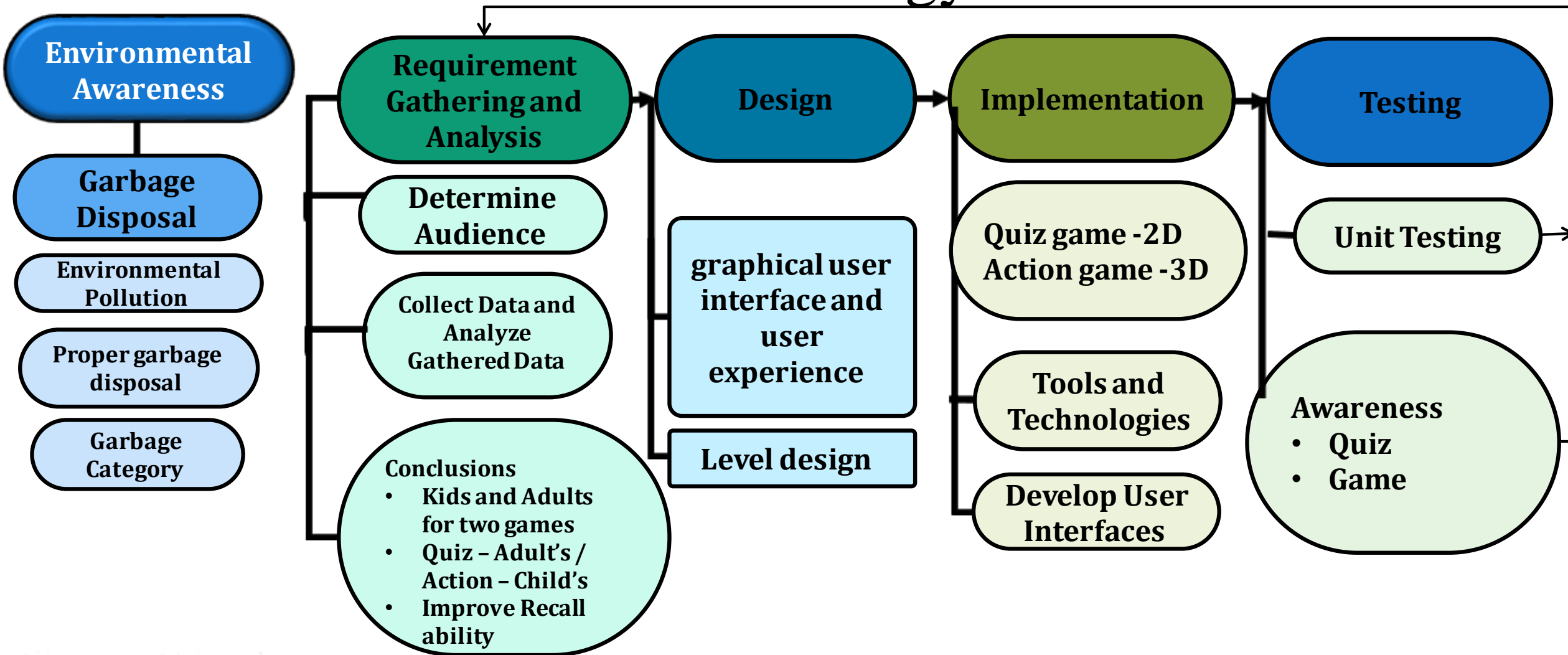
- Improve the abilities of people making them aware of garbage disposal by using the game-based learning platform.

Sub Objectives

- Determination the audience of this research
- To Identify user abilities can improve through the game
- To identify the best games to implement
- To create a perfect game for increasing awareness of the garbage disposal properly

Environmental awareness – garbage disposal

Methodology



Achievement



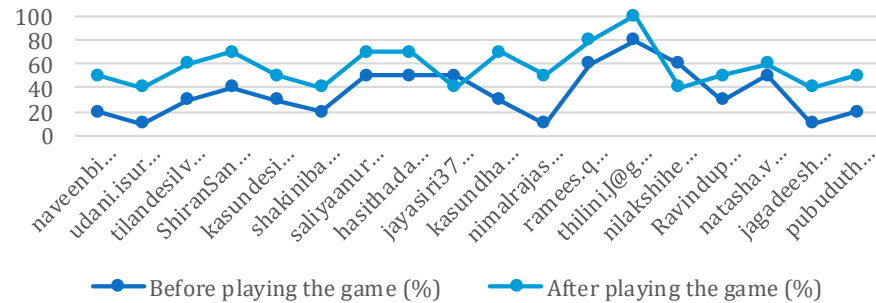
2D Quiz game for
Adult's



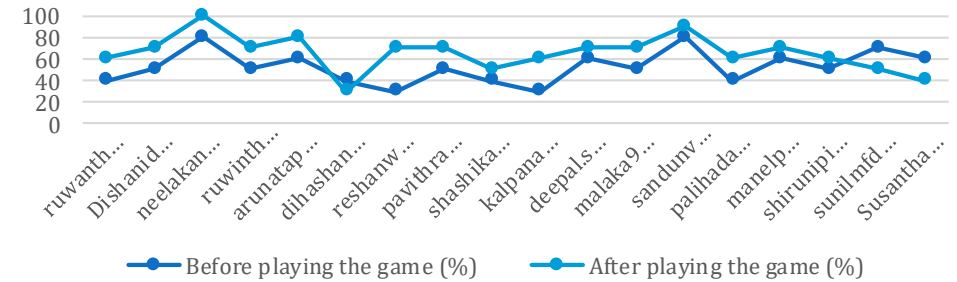
3D Action game for
Kid's

Your achievement

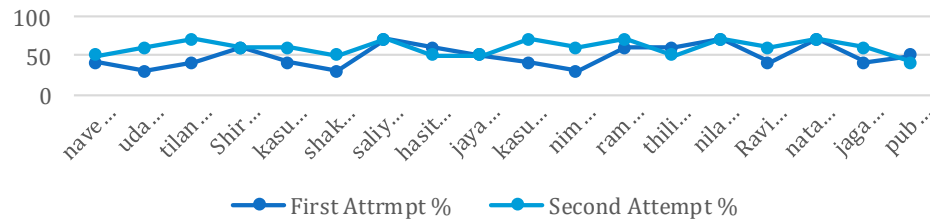
Under 20 years old (Children's) - Quiz



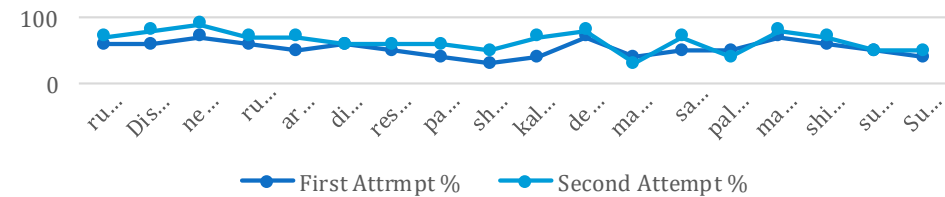
20 years or older (Adult's) - Quiz



Under 20 years old (Children's) - Two Attempts of the game



20 years or older (Adult's) - Two Attempts of the game



- Summary of the questionnaire results and two attempts of the game results
- 36 people were used for the testing . 80 % improve their awareness level according to this test results.

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SAFETY AWARENESS – ROAD SAFETY

- Today accidents are increasing rapidly day by day in Sri Lanka.
- Small children become victims of road accidents.
- Most of the people don't have a good understanding about road safety.
- Although there are so many road safety systems, they are not successful.

SAFETY AWARENESS – ROAD SAFETY

Research Gap

Features	Road Safety Awareness in a North Indian Town[12]	Learning Children Road Safety Education [13]	Tackling children's road safety [14]	VR for road safety awareness and timing[14]	Proposed game [AwareME]
Rules of road(crossing the road, traffic accidents)	✓	✗	✗	✓	✓
Audience(Children)	✓	✓	✓	✓	✓
3D	✓	✗	✗	✗	✓
2D	✗	✓	✗	✗	✓

SAFETY AWARENESS – ROAD SAFETY

Research Question

- Road accidents is increasing day by day
- Lack of awareness of people about road safety
- Lack of an awareness platform for people to be aware of road safety



SAFETY AWARENESS – ROAD SAFETY

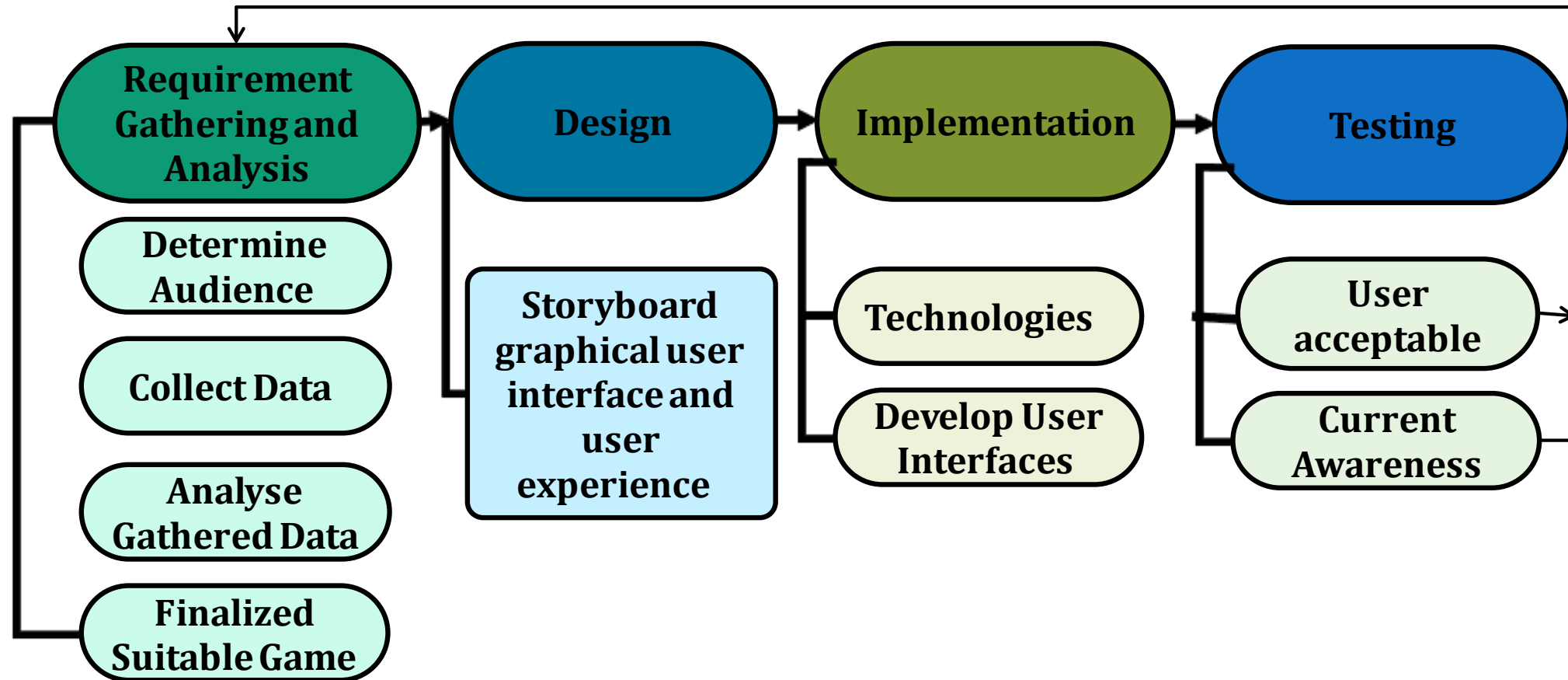
Specific Objective

- Improve the abilities of people making them aware of road safety by using the game-based learning platform.

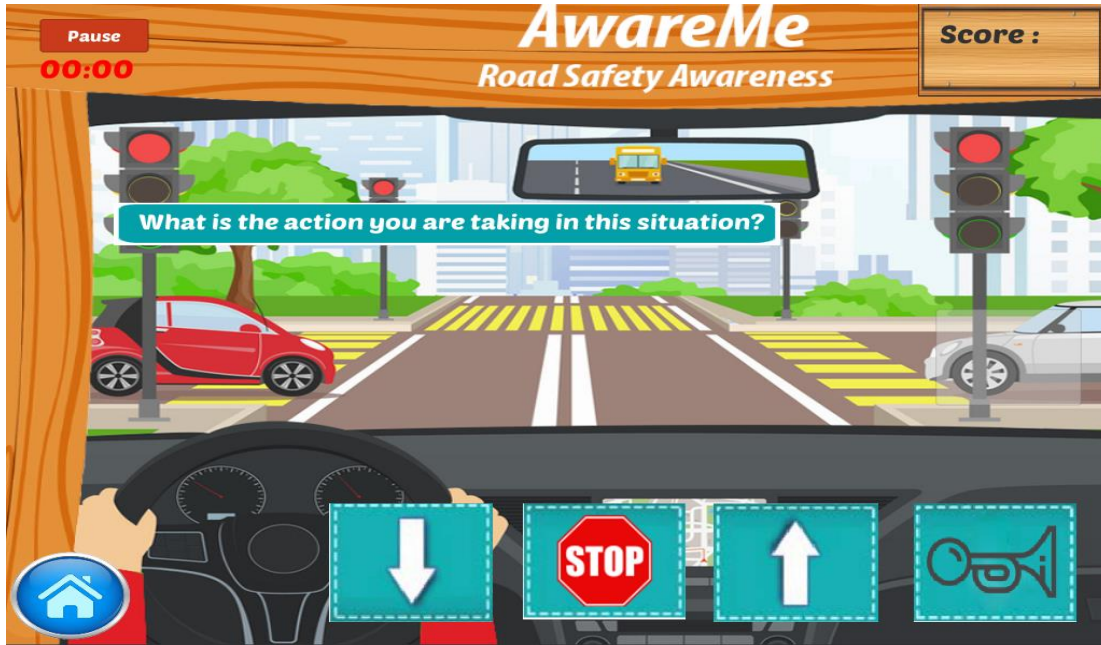
Sub Objectives

- Determination the audience of this research
- To Identify user abilities can improve through the game
- To identify the best games to implement

Safety awareness – Read Safety Methodology



Achievement



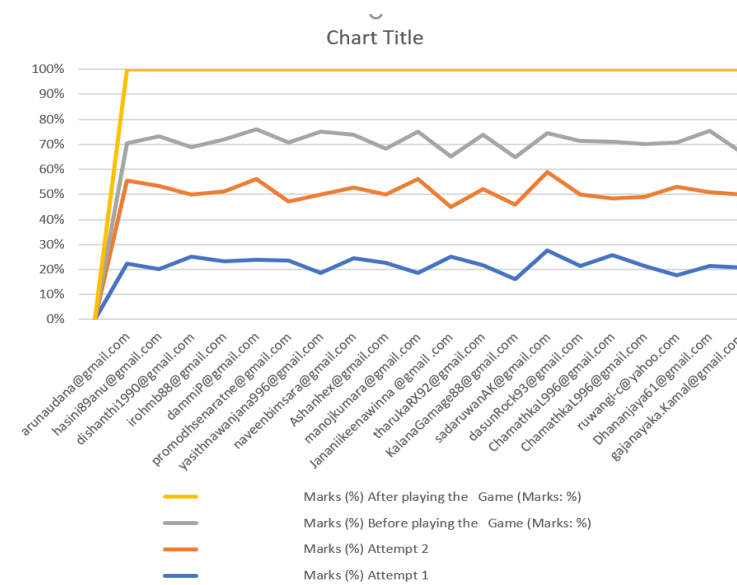
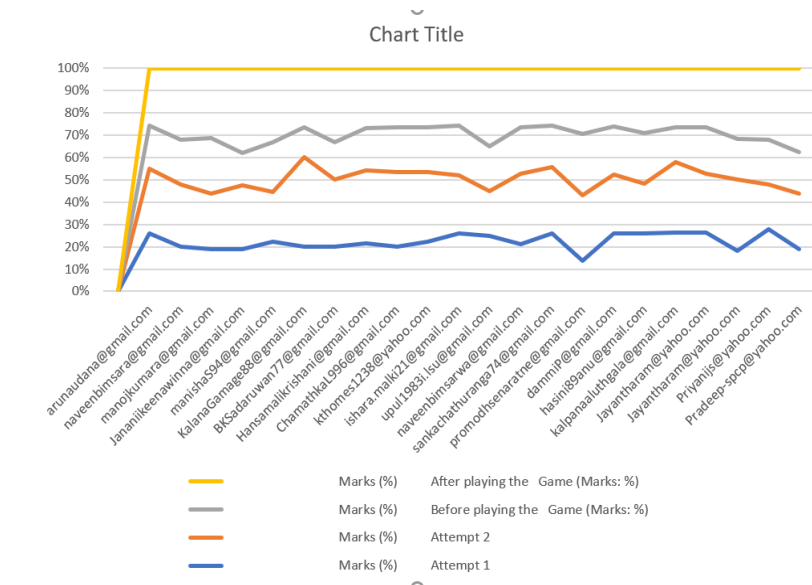
2D Driver's game



3D Pedestrian's game

Your achievement

- The data collected after playing the game are shown below.



- A questioner is given before and after the game.
- 32 people were used for the testing . 85 % had increased their awareness level according to the test results.
- The knowledge of road safety has been improved by these methods.

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keywords: {courseware;teaching;computer games;security of data;computer science education;digital simulation;CyberCIEGE;information assurance;commercial-quality video game;resource management simulation;decision maker;IT dependent organization;virtual users;security measures;valuable information assets;Engines;Information security;Games;Computer security;Libraries;Privacy;Costs;Authorization;Concrete;Computer science education;CyberCIEGE;video games;information assurance;IA;entertainment;cybersecurity;Naval Postgraduate School;Rivermind;simulation;security;risk management},
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Road Safety Awareness among College Students in a North Indian Town
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<https://www.semanticscholar.org/paper/Computer-Games-as-Learning-Tool-towards-Children-Hussin-Fouzi/3730b9d6b1849877645eacc1e597a4590a47b53a>
- [14] <https://academic.oup.com/her/article/18/4/493/643541>
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Using VR with smart phones for road safety awareness and timing