

**CO600**

**Ethics Generator**

Technical Report

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**Abstract**

This is a comprehensive report for the CO600 project ‘Ethics Generator’; the report will feature an overview of the entire development process of the project (named Autonomous Ethics by the four developers), as well as discussing the technical and non-technical features that went into its creation. Throughout this report, there will be an outline of our targets/goals that we aimed to achieve with the development of this program.

The report will also feature our reflection of each step of the development and design. Autonomous Ethics was designed and developed by Kieran D’Arcy, James Scarry, Taylor McNicol, and Ibraheem Jhanji.

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# **1 Introduction**

Autonomous vehicles and the industry they’re part of have been facing the issue of moral dilemmas/clashes for many years now. While the technology for these vehicles continue to improve and develop, there is one thing that has kept industry experts at a standstill – that is the issue of deciding what a vehicle should do in the event of an unavoidable accident.

Many have expressed discomfort behind the idea of vehicles making these ethical decisions; morals and ethics are hard to centralize based on location, and it is unlikely that the perfect medium for it is even possible to achieve.

Autonomous Ethics aims to test the morals and ethics in a user’s decision-making. It offers the simulation to the user of being a passenger in a fully automated car; the car is approaching a crossing and cannot avoid an accident. Autonomous Ethics randomly generates various scenarios to present to the user, offering them a selection of three options. The program will measure their responses and collect information such as which age group they favor most, and which character(s) they choose to sacrifice more often.

Autonomous Ethics was built with the intention of being a research tool, offering 28 unique characters for use in generated scenarios.

# **2 Background**

## **2.1 Similar Platforms**

## **2.2 Planning Development**

# **3 Requirements**

## **3.1 Minimum Project Requirements**

## **3.2 Optional/Non-Critical Features**

## **3.3 Possible Extra Features**

## **3.4 Non-Technical Requirements**

# **4 Development Planning**

## **4.1 Languages**

* HTML (Outline the style and content of each page)
* Javascript (Allows the implementation of the randomly generated scenarios)
* CSS (Used to style the page and link jQuery elements to the page)
* Js.node (Has database from where we can access data using jQuery)

## **4.2 Web Development**

## **4.3 Basecamp**

* For general note taking
* Used for meeting alerts and schedule deadlines (internal and external)
* Alerts other members of what has been completed
* To do lists enable team to know what aspects are assigned to them
* The message board is also crucial to get messages across to other members

# **5 Design**

## **5.3 Concept Designs**

## **5.1 Graphics Design**

**One part of this was create the scene for the ethic generator, of which characters that are created could be embedded upon. Using background skills of Blender we created modules within a sculpted landscape, which**

## **5.2 Web Design**

# **6 Implementation**

(Kieran or James may be better off listing the subsections for this part)

## **HTML Structure**

Once planning had been completed it was time to move onto piecing each part of the project together. This was to start from forming a basic html page that had preset, hard coded scenarios, so we could visualize our end goal. These were presented with a geWhen the structure was agreed upon we added in the scenario generator instead of having hard coded options. This would initially allow the generator to work on basic functionality so we could option an understanding of further areas of development. Use of CSS and JavaScript styled the page in terms of positioning (overlaying images) and having specific formatted navigation bars.

## **Scenario Generator**

This was a fundamental part of our project as we needed

## **Image Creation**

## **Mapping Image’s to Scenarios**

The hardest part once the images had all been made for each character (26) and scenarios generating randomly after each selection was being able to map the images that corresponded to the randomly generated character. Through creating a ‘scene’ using jQuery on the generator page that links to the main index.js and external database we could append selected characters from the general with the ID referring to them. However, to use this in CSS we had to style each character separately as we didn’t know which character would appear in each scenario. This took a reasonable about of time due to aligning each character perfectly on their respective side of the road.

## **Index and Database (Kieran)**

## **User ID’s and Result Production**

## **Logic???**

## **Ethical Conclusion (IB)**

# **7 Evaluation**

## **7.1 Does Autonomous Ethics Meet the Criteria?**

### **7.1.1**