## **Artificial Intelligence Research** [version number v 1.05]

## Author: [Jonah Campbell]

# Terminology

Give a **definition** for the following **terminology** using your **own words.**

*(Minimum* ***two sentences*** *each)*

**Algorithm:** a procedure or set of rules to be followed in estimations or other critical thinking tasks, particularly by a computer. It conducts a specific set of actions in order to process things like information.

**Artificial intelligence:** Simulated activity of a human with the use of a machine. Usually used to accompany actual human activities.

**Chatbot:** A computer program designed to talk and interact with people over the internet.

**Computer science** The study of computation, information processing, algorithms, computer systems and more in order to develop software and applications.

**Decision tree:** Usually a flowchart, which shows conditional controlled statements such as chance, recourse cost and utility

**Pseudo Code:**  Actual code written simply in order to show the reader what the actual code does, also used to track where different code takes place.

**State Machine:** A machine which is allowed to be in one of a number of states at any given time. Having triggers which change it to different states.

# Behaviours

Choose **two** genres of games and describe the **behaviours** the AI follows within that genre *(Minimum* ***three******sentences*** *each)*

(Genre e.g. include: Action, First/Third person shooter, Real time strategy, Survival horror, Racing, Role-playing)

Real time strategy games include Ai which follows the fastest path to the objective, for the most part. It can also have AI which supports player characters and follows them around instead. The main use of AI in RTS games is to follow the players commands and move where the player dictates.

Racing games usually have AI which (depending on difficulty) will race alongside a player and mimic actual players. This may include deliberately running into the player, as well as attempting to cut them off. These AI can be adapted to be faster or slower, including speeding up and slowing down depending on the performance of the player.

# Pseudo Code and UML Diagram

Choosing **one** of the genres you described above, **write very simple pseudo code** and include an **Activity** **UML diagram** displaying and describing the behaviour of that chosen AI.

Identify player position

Determine if interaction is available

Move closer to player if behind

Stay ahead of player if ahead

Overtake/block player if near

Identify player reaction/new position

Repeat until end of race

