**Active Redundancy Implementation**

# Introduction

This document discusses the technologies used to implement the Active Redundancy algorithm, as well as how the work was divided among the team members. The assignment builds upon the previous Heartbeat assignment, introducing Active Redundancy into the preexisting Heartbeat implementation.

# Tools and Technologies

The following technologies were used to implement the algorithm:

* **Programming Language:** Python 3.7
* **IDE:** PyCharm 2019.2.3 (Community Edition)
* **VCS:** Git (Github)
  + <https://github.com/dh7445/HeartBeat.git>

# Source Code

The source code uses the same structure as the source code for the Heartbeat assignment. The major changes consist of:

* Duplicating the Sender and Receiver class to create the backup process.
* Modifying the backup Sender to remove the nondeterministic fault.
* Modifying the Monitor to print the first value received from either of the processes and discard the other.

# Tasks Distribution

For the purpose of completing the assignment, the tasks were distributed and performed as follow:

* The team met to discuss the assignment and work on the implementation.
* The implementation was done by using pair programming: Diego was in charge of writing the actual code while José and Murtaza provided live feedback and support during the process.
* José typed the documentation and Diego and Murtaza verified it.

# Challenges

No major challenge was encountered while doing this assignment. The most difficult part was deciding how we were going to log and print the information in order to properly illustrate the application during the demonstration.