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| Button |
| ButtonState value;  Enum   |  | | --- | | Pressed | | notPressed | | inactive | |
| void activate()  void reset()  void pressed()  ButtonState state() |

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| RocketPad |
| int rocketName;  Button activateButton; // This thing will be observed  boolean relay1;  boolean relay2; |
| activateButtonPressed(PadUnit pad)  getRelayState()  closeRelay1()  closeRelay2()  resetRelays() |

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| PadUnit |
| RocketPad rocket1  RocketPad rocket2  int name; |
| void activateButtonRocketPressed(int rocketName)  public static void rocketSystemActivate(PadUnit pad,String rocketNum); |

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| ControlButton |
| Button ArmedButton1;  Button LaunchButton1;  Button ResetButton1;  Button ArmedButton2;  Button LaunchButton2;  Button ResetButton2; |
| void activateControlButton(int rocketName)  void armedLaunchButtonPressed(PadUnit pad, int rocketName)  void launchButtonPressed(PadUnit pad, int rocketName)  void reset(PadUnit pad, int rocketName)  ControlButtonState getState1()  ControlButtonState getState2() |

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| ControllerButtonState | ArmButton | LaunchButton | Reset |
| Inactive | Inactive | Inactive | inactive |
| armedAvailable | notpressed | inactive | notpressed |
| launchAvailable | pressed | notpressed | notressed |
| launched | pressed | pressed | notpressed |
| Invalid | notpressed | pressed | notpressed |
| Reset | \_ | \_ | pressed |

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| Main |
| public static Controller controller = new Controller(); |
| public static String readInputStreamWithTimeout(InputStream is, byte[] b, int timeoutMillis, PadUnit[] padArray, String padInfo, String rocketInfo)  public static void input2Instruction(String rocketName, PadUnit[] padArray, String inputPadName, String inputNumOfPad)  public static boolean numberOfPadValidity(String numOfPad);  public static void showState(String inputNumOfPad,PadUnit[] padArray) |

// For multithreading, I add synchronized keywords on almost every Controller functions

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| Controller |
| HashMap<PadUnit, ControlButton> |
| synchronized void registerPad(PadUnit pad)  synchronized void deregisterPad(PadUnit pad)  synchronized void activateControlButton(PadUnit pad, int rocketName)  synchronized void reset(PadUnit pad, int name)  synchronized void armedLaunchButtonPressed(PadUnit pad, int rocketName)  synchronized void launchButtonPressed(PadUnit pad, int rocketName)  boolean actionValidity(String action);  synchronized void takeAction(String inputNumOfPad, PadUnit[] pad,String padName, String rocketName, String action) |

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| PadUnitManager |
| PadUnit[] padArray |
| public boolean numberOfPadValidity(String numOfPad)  public PadUnitManager(String inputNumberOfPads)  public boolean checkPadNumber ( int NumberOfPad, String padNumber)  public boolean checkInputRocketNumber (String rocketNum)  public void takeAction (String inputNumOfPad, String inputPadName, String rocketName) |