GUI Microcontroller Benoit Moreau Software Architecture Update Final Project II April 23 2020 Begins Serial communication with Defines UI parameters (window size, button size and location, window and text colors...) Sends command "AT+RST" to ESP-01 Creates Window/ UI Sends command "AT+CWMODE=3 to ESP-01 Establishes a connection to Microcontroller (192.168.4.1, port Sends command "AT+CIPMUX=1" to ESP-01 Is a connection This cannot be looped Sends command established? because if a connection "AT+CIPSERVER=1" to ESP-01 cannot be established, the program throws an Connects to exception and crashes camera (IP varies) ESP-01 Sends command "AT+CWSAP" to ESP-01^1 Is a connection Notitfy user established? that connectio Recieves String to arduino was Sends signals that move the servos From GUI unsucessful to their inital postions Displays "No video Found Displays Video In Ul Text box" Sends string one Recieves Char from ESP char at a time to the arduino Searches For Keyboard or Is it a null Mouse Signals terminator? Reads next Stores char into string Is a Signal Found? Searches String for Keywords Is a keyword found? Is the keyword "Forward"? Is the keyword "Back"? keyPressed() signal? Is the keyword "Left"? key pressed Is speed > 0? Is the keyword Create String "Right"? "Left" be a mouse pressed "w" or "W"? moved() the Video change keyword "Fire"? direction of Create string motor "Forward" rotation nothing Is the keyword "Servo direction of pos=x"? Create string key pressed "d" rotation "Back" **Create String** "Click" Creates string Keyword="Emergency containing Do mouse position Key "e" or "E" must have been Create String nothing "Right) Reduce Moves turret Increase Increase pressed Reduce Reduce Increase speed by speed by speed by servo to "x" speed to 0 speed to 0 servo to right servo to left speed by 25% 25% 25% position position position 25% Create string "Emergency" String To The arduino Has a keep alive Signal been Recieved Reduce speed to 0 Stops Sends keep Shooting alive signal to arduino Waits 250ms Searchs for keep alive signal Has user Selected to terminate session? Has a keep alive Signal been found **Application Closes** Stops All actions