**Overview of Real-time Operating Systems for embedded devices**

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**Abstract:** Real-time OS are very useful for embedded devices, home automation, aviation. This paper describes well known real-time os are such as zephyr os, FreeRTOS and GNU/Linux. Their features will be compared. The paper performs the Overview task of PhD thesis.

**Keywords: risc-v assembly, avr assembly, operating system**

1. **Introduction**

Programming languages for operating system design are C and Assemly language. There are several types of operating systems:for general-purpose use such as macOS. GNU/Linux distributions can be use both for general-purpose and for real-time. AVR assembler is used for range of AVR RISC devices. Binutils package contains linker *ld* and *GNU assembler*. GNU assembler can be used for RISC-based single board computers, such as Raspberry Pi 3, 4 or for latest Raspberry Pi 5.

**2. Material and Methods**

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| **Operating System** | **Type** | **Written in** |
| Zephyr | real-time | C |
| FreeRTOS | real-time | C |

References:

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1. PhD Theme: Methods and Tools to develop a assembly-based operating system for embedded devices [↑](#footnote-ref-2)