

Problem StrCpy

(CodeWarrior-Project **AssemblerUnterprogramme.mcp**)

Write a subroutine in HCS12 assembler to copy a Null-terminated strings into another string and a test program in C, which calls your assembler subroutine.

The C-prototype of the assembler subroutine is

```
int StrCpy(char *dest, const char *src)
```

***dest** is a pointer to the destination string and ***src** is a pointer to the source string. The subroutine shall return the length of the string (not including the terminating NULL).

Which potential problem(s) does this subroutine have, which in a similar way is included as **strcpy()** in the C standard library (**stdlib.h**)?

Problem MemCpy

(CodeWarrior-Project **AssemblerUnterprogramme.mcp**)

Write a subroutine in HCS12 assembler to copy a memory range into another memory range and a test program in C, which calls your assembler subroutine.

The C-prototype of the assembler subroutine is

```
void MemCpy(void *dest, const void *src, int n);
```

***dest** is a pointer to the start of the destination memory range, ***src** is a pointer to the start of the source memory range. **n** is the size of the source memory range in Byte.

Which potential problem(s) does this subroutine have, which in a similar way is included as **memcpy()** in the C standard library (**stdlib.h**)?

Problem Buffer

(CodeWarrior-Project **AssemblerUnterprogramme.mcp**)

The following C subroutine uses function **strcpy()** from the C standard library:

```
void myTestSubroutine(void)
{
    char buffer[5];

    strcpy(buffer, "HalloÃv");
    return;
}
```

- Convert this C function into HCS12 assembler. The assembler function shall be callable from C.
- Describe the state of the stack, when function **strcpy()** is executed.
- Test the original C code of this CodeWarrior project. Does everything really work as expected?