Implementierung C

Rekursiv

```
int fac(int n)
{
  if (n < 1) then return 1;
  return (n*fac(n-1));
}
```

Iterativ

```
int fac(int n)
{
  int result = 1;
  int index  = 1;
  while (index++ < n)
     result = result*index;
  return result;
}
```

ASM-Rekursiv

```
LEAX      ,S              FACT   DECA
LEAS    -1,S                     BLE     RETURN
LDA     #1                       PSHS    A
STA      1,X                     BSR     FACT
LDA       ,S                     PULS    B
INCA                             LDA      1,X
BSR     FACT                     MUL
LDA      1,X                     STB      1,X
LEAS      ,0            RETRN    RTS
…
```

ASM-Iterativ

```
        TFR     S, X           REP     LDB     -1, X
        LEAS    -2, S                  CMPB    , X
        BSR     FACT                   BGE     RETRN
        PULS    A                      INCB
        ...                            STB     -1, X
                                       LDA     -2, X
                                       MUL
                                       STB     -2, X
FACT    LDA     #1                     BRA     REP
        STA     -1, X          RETRN   RTS
        STA     -1, X
```