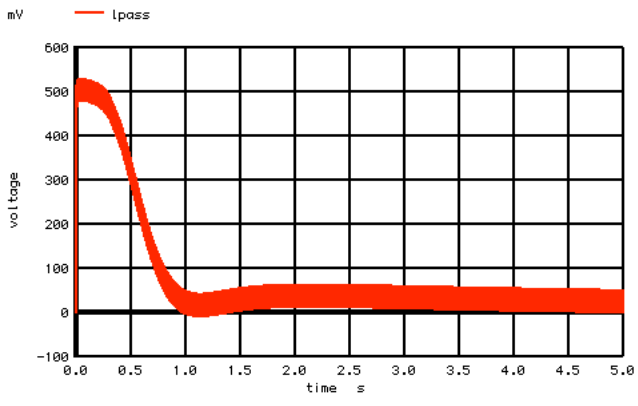
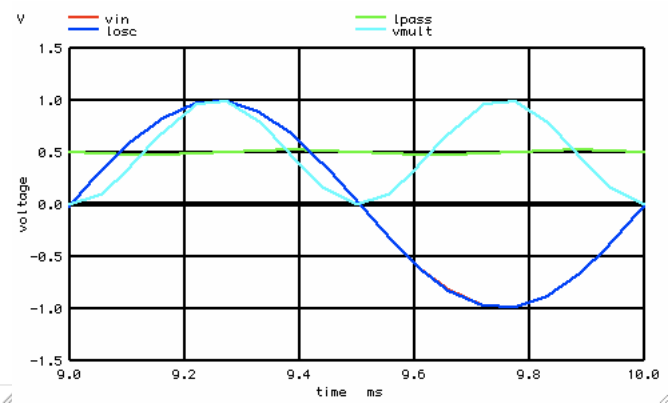
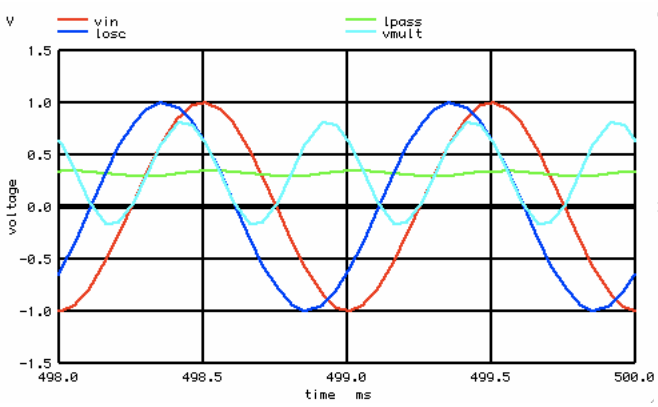
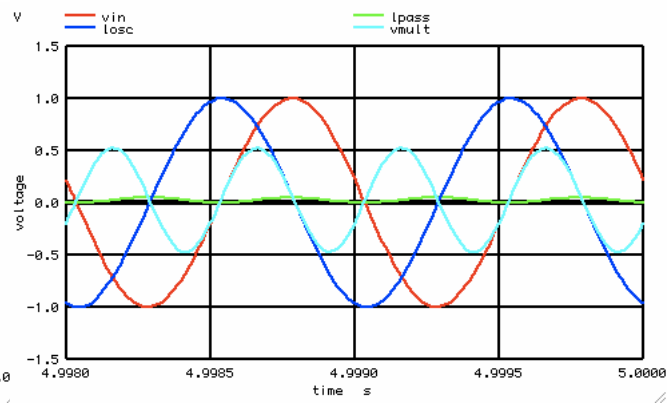
==========**Simple_PLL**==========

CREATE A FULL BEHAVIORAL PLL USING LESS THAN TEN LINES OF SPICE.









Simple_PLL

```
*                                   ___________________________________
*                                   |                                  \
*                                   | V = sin(2*PI*Fre*T+IntFM*T)   \
*          VMULT    RLP      LPASS   |                                 \
*             ____/\  /\  /\_______|    RINT     VPHAS     /|\       \
*            _|_     \/  \/   |     | __/\  /\  /\____ _ _ _|          \_ LOSC
*   VIN     /  \              _|_   |    \/  \/  _|_                   /_|
*    ____|\/  \/ \     CLP    ___   | FM            ___      SYSTEM    /  |
*  _|_   |/\  /\ /            _|_   |      CINT    _|_      MODELED  /  |
* /_  \     \___/ BMULT       ///   |             ///        VCO    /  |
*//  \  \     ^                     |_______________________________/  |
*\   \//     /_\                                                       |
* \___/       |_______________________________________________________|
*  _|_
*  ///   WinSpice/MacSpice tested 2.19.11_6.58PM dsauersanjose@aol.com
*
*=========All_System_Modeled_PLL==================

VT        VT      0       DC      0       PWL(    0       0       10      10      )
BVIN      VIN     0       V =             sin( 6.28*1000*V(VT) )
BLOSC     LOSC    0       V =             sin( 6.28*1000*V(VT)  + 10*V(VPHAS)*V(VT) )
BMULT     VMULT   0       V =             V(VIN)*V(LOSC)
RLP       VMULT   LPASS   1k
CLP       LPASS   0       1.6u
RINT      LPASS   VPHAS   1meg
CINT      VPHAS   0       1u

.control
set       pensize =       2
tran      .1m     5       0       .1m
plot      lpass
plot      vin     lpass   losc    vmult   xlimit  9m      10m
plot      vin     lpass   losc    vmult   xlimit  498m    500m
plot      vin     lpass   losc    vmult   xlimit  4998m   5000m
.endc
.end
```