**An Example of OOP Code Generation with Decaf – TAC**

void main()

{

Cow betsy;

betsy = New(Cow);

betsy.Init(100, 122);

betsy.Moo();

}

class Cow {

int height;

int weight;

void Init(int w, int h)

{

weight = w;

height = h;

}

void Moo() {

Print ( this.height, " ", this.weight, "\n" );

}

}

**Generated TAC:**

main:

BeginFunc 40 ;

\_tmp0 = 12 ;

PushParam \_tmp0 ;

\_tmp1 = LCall \_Alloc ;

PopParams 4 ;

\_tmp2 = Cow ;

\*(\_tmp1) = \_tmp2 ;

betsy = \_tmp1 ;

\_tmp3 = 100 ;

\_tmp4 = 122 ;

\_tmp5 = \*(betsy) ;

\_tmp6 = \*(\_tmp5) ;

PushParam \_tmp4 ;

PushParam \_tmp3 ;

PushParam betsy ;

ACall \_tmp6 ;

PopParams 12 ;

\_tmp7 = \*(betsy) ;

\_tmp8 = \*(\_tmp7 + 4) ;

PushParam betsy ;

ACall \_tmp8 ;

PopParams 4 ;

EndFunc ;

\_Cow.Init:

BeginFunc 0 ;

\*(this + 8) = w ;

\*(this + 4) = h ;

EndFunc ;

\_Cow.Moo:

BeginFunc 16 ;

\_tmp9 = \*(this + 4) ;

PushParam \_tmp9 ;

LCall \_PrintInt ;

PopParams 4 ;

\_tmp10 = " " ;

PushParam \_tmp10 ;

LCall \_PrintString ;

PopParams 4 ;

\_tmp11 = \*(this + 8) ;

PushParam \_tmp11 ;

LCall \_PrintInt ;

PopParams 4 ;

\_tmp12 = "\n" ;

PushParam \_tmp12 ;

LCall \_PrintString ;

PopParams 4 ;

EndFunc ;

VTable Cow =

\_Cow.Init,

\_Cow.Moo,

;