## proposed move to System F

At the Manticore meeting on 11/7/07, we discussed moving BOM in the direction of System F.

The following summarize the proposed changes to the `BOM` module:

### New syntactic forms:
- `let x : tau = y [tauVec]`
- `apply f [tauVec] (...) / (...)`
- `let x : tau = CONS [tauVec] (...)`
- `let x : tau = CONST [tauVec]`
- `throw k [tau] (...)`

### New types:
- `alpha (* type variables *)`
- `forall alphaVec . tau`
- `T [tauVec]`
- `tau + tau`

Here are the changes to the datatypes in the `BOM` module:

```plaintext
datatype term = ...
  E_Apply of (var * ty list * var list * var list)
  E_Throw of (var * ty list * var list)
  E_HLOp of (hlop * ty list * var list * var list)
and rhs = ...
  E_TyApply of (var * ty list)
  E_DCon of (data_con * ty list * ty list)
and lambda = FB of
  Unknown macro: { f }
and pat = P_DCon of (data_con * ty list * var list)
  P_DConst of (data_con * ty list)
  ...
and the changes to the BOMTy module:

datatype ty = T_\Var of ty_var
  T_Forall of (ty_var list * ty)
  T_TyCon of (tyc * ty list)
  ...
```

We'll also need to add the `ty_var` type and make changes to the representation of `tyc`'s.