

Example for Parameters and Local Variable Declarations

```
%{
```

```
#include <stdio.h>  
#include <string.h>
```

```
extern int yylex(); /* The next token function. */  
extern char *yytext; /* The matched token text. */  
extern int yyleng;  
extern int yyerror(char *);
```

```
struct DecType {  
    int type;  
    char *name;  
    struct DecType *next;  
};
```

```
void printLists(struct DecType *p, struct DecType *L);  
struct DecType * appendDec(struct DecType *head, struct DecType *item);
```

```
%}
```

```
%union {  
    struct DecType * list;  
    char * string;  
    int integer;  
    struct DecType * DecType;  
}
```

```
%type <list> PList  
%type <list> LList  
%type <string> Id  
%type <integer> Type  
%type <DecType> Dec
```

```
%token Ident  
%token INT  
%token BOOLEAN
```

```
%%
```

%%

```
Declists      :   '(' PList ')' LList ';'      {printLists($2, $4);};
PList         :   PList ',' Dec              {$$ = appendDec($1, $3);};
PList         :   Dec                        {$$ = $1;};
LList         :   LList ';' Dec              {$$ = appendDec($1, $3);}
LList         :   Dec                        {$$ = $1;};
Dec           :   Type Id                    {struct DecType *d = malloc(sizeof(struct DecType));
                                           d->type = $1;
                                           d->name = $2;
                                           d->next = NULL;
                                           $$ = d;
                                           }
Id            :   Ident                      {$$ = strdup(ytext);};
Type          :   INT                        {$$ = 1;};
Type          :   BOOLEAN                    {$$ = 2;};
```

%%

```
int yyerror(char *s) {  
    printf("Illegal Character in YACC");  
    return 1;  
}
```

```
void printLists(struct DecType *p, struct DecType *L) {  
    int i = 1;  
    struct DecType *temp;  
    temp = p;  
    while (temp != NULL) {  
        printf("%s:%s:%d\n", temp->type == 1 ? "int":"boolean", temp->name, i);  
        i++;  
        temp = temp->next;  
    }  
    temp = L;  
    while (temp != NULL) {  
        printf("%s:%s:%d\n", temp->type == 1 ? "int":"boolean", temp->name, i);  
        i++;  
        temp = temp->next;  
    }  
}
```

```
struct DecType * appendDec(struct DecType *head, struct DecType *item) {
    struct DecType *temp = head;
    while (temp->next != NULL) temp = temp->next;
    temp->next = item;
    return head;
}

int main(int argc, char * argv[]) {
    yyparse();
}
```

