

# CS 224 Project: Phase 4B

Functions

# Grammar

**prog**  $\rightarrow$  **Dec Mainfun eof**

**Dec**  $\rightarrow$  **funcdec ; Dec** |  $\varepsilon$

**Funcdec**  $\rightarrow$  **function** *{fun1()}* **ID ( ) begin CS end** *{func2()}*

**Mainfun**  $\rightarrow$  **main** *{main1()}* **( ) begin CS end** *{main2()}*

**Stmt**  $\rightarrow$  **id rest**

    | **if (expr) then stmt**

    | **while (expr) do stmt**

    | **begin CS end**

**Rest**  $\rightarrow$  **= expr** | **( ) {func3()}**

**CS**  $\rightarrow$  **stmt ; CS** |  $\varepsilon$

Note: *expr* has the same rules seen in Phase 3

**call: call a function**  
**ret : return from a function**

```
void func1()
{
printf(“%s:\n”,sysmtable[tokenval].lexptr);
}
```

```
void func2()
{
printf(“ret\n”);
}
```

```
void func3()
{
printf(“call %s:\n”,sysmtable[tok].lexptr);
}
```

```
void main1()
{
printf(“main:\n”);
}
void main2()
{
printf(“exit\n”);
}
```