# Variable Scope and Storage Specifier Assignments

**Mandatory**

1. Refer the code snippet below and answer the queries

int val;

extern void display();

static int function()

{

val++;

int x = 10;

int i = 0;

static int j = 20;

for (; i < 3; i++)

{

int x = 20;

printf(“\n %d”, x+i);

x+=3;

j++;

display();

}

return val;

}

int main(int argc, char \*argv[])

{

val= 0;

function();

return 0;

}

1. What is the change required if val declaration line below is to be moved to an other file?
2. What is the value of x after for loop execution?
3. What does the keyword static in following lines mean?

static int function()

static int j = 20;

1. What is the value of j after for loop execution?
2. Identify the variables which would be in the stack of function()
3. What does extern in the following line mean?

extern void display();

* 1. **Change required if val is moved to another file**: Use extern int val; in the file where val is used.
  2. **Value of x after the loop**: It will be 20 for each iteration inside the loop, and the final value of x is not relevant as it is a local variable.
  3. **Keyword static**:
* In static int function(), it makes the function private to the file.
* In static int j = 20;, it makes j persist across function calls.
  1. **Value of j after the loop**: j = 23.
  2. **Variables in the stack of function()**: x, i, and j (though j is static, it is still tied to the function).
  3. **Meaning of extern**: It declares the function display() exists in another file, but doesn't define it.