

STATIC:

DOUBLY LINKEDLIST:

```
Activities Terminal Apr 17 18:44
rps@rps-virtual-machine: ~/Documents/17thApril/doubly_static
rps@rps-virtual-machine:~/Documents/17thApril/linkedlist_dynamic$ cd ..
rps@rps-virtual-machine:~/Documents/17thApril$ cd doubly_static
rps@rps-virtual-machine:~/Documents/17thApril/doubly_static$ ls
doublylist.c doublylist.h main.c
rps@rps-virtual-machine:~/Documents/17thApril/doubly_static$ gcc -c doublylist.c -o doublylist.o
rps@rps-virtual-machine:~/Documents/17thApril/doubly_static$ ls
doublylist.c doublylist.h doublylist.o main.c
rps@rps-virtual-machine:~/Documents/17thApril/doubly_static$ ar rcs liblinklist.a doublylist.o
rps@rps-virtual-machine:~/Documents/17thApril/doubly_static$ ls
doublylist.c doublylist.h doublylist.o liblinklist.a main.c
rps@rps-virtual-machine:~/Documents/17thApril/doubly_static$ gcc -c main.c -o main.o
rps@rps-virtual-machine:~/Documents/17thApril/doubly_static$ ls
doublylist.c doublylist.h doublylist.o liblinklist.a main.c main.o
rps@rps-virtual-machine:~/Documents/17thApril/doubly_static$ gcc main.o -o my_exe -L. -ldoublylist
/usr/bin/ld: cannot find -ldoublylist: No such file or directory
collect2: error: ld returned 1 exit status
rps@rps-virtual-machine:~/Documents/17thApril/doubly_static$ gcc main.o -o my_exe -L. -llinklist
rps@rps-virtual-machine:~/Documents/17thApril/doubly_static$ ls
doublylist.c doublylist.h doublylist.o liblinklist.a main.c main.o my_exe
rps@rps-virtual-machine:~/Documents/17thApril/doubly_static$ ./my_exe
Sum of values in the doubly linked list: 15
rps@rps-virtual-machine:~/Documents/17thApril/doubly_static$
```

SINGLY LINKEDLIST:

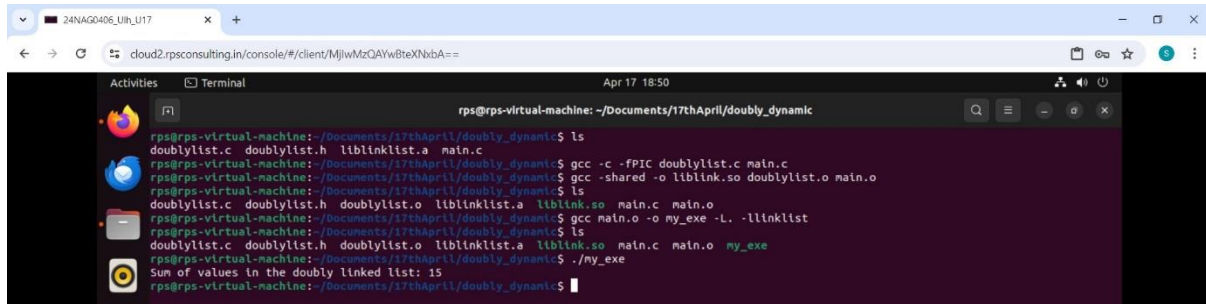
```

rps@rps-virtual-machine:~/Documents/17thApril/linkedlist$ ls
linklist.c linklist.h main_.c
rps@rps-virtual-machine:~/Documents/17thApril/linkedlist$ gcc -c linklist.c -o linklist.o
rps@rps-virtual-machine:~/Documents/17thApril/linkedlist$ ls
linklist.c linklist.h linklist.o main_.c
rps@rps-virtual-machine:~/Documents/17thApril/linkedlist$ ar rcs liblinklist.a linklist.o
rps@rps-virtual-machine:~/Documents/17thApril/linkedlist$ ls
liblinklist.a linklist.c linklist.h linklist.o main_.c
rps@rps-virtual-machine:~/Documents/17thApril/linkedlist$ gcc -c main_.c -o main.o
rps@rps-virtual-machine:~/Documents/17thApril/linkedlist$ ls
liblinklist.a linklist.c linklist.h linklist.o main_.c main.o
rps@rps-virtual-machine:~/Documents/17thApril/linkedlist$ gcc main.o -o my_exe -L. -llinklist
rps@rps-virtual-machine:~/Documents/17thApril/linkedlist$ ls
liblinklist.a linklist.c linklist.h linklist.o main_.c main.o my_exe
rps@rps-virtual-machine:~/Documents/17thApril/linkedlist$ ./my_exe
Sum of values in the linked list: 15
```

- **gcc -c linklist.c -o linklist.o** ---getting the object file
- **gcc -c main.c -o main.o** --- getting the object file
- **ar rcs liblinklist.a linklist.o** --- creates the static library liblinklist.a from the object file linklist.o
- **gcc main.o -o my_exe -L. -llinklist** ---
 - -L. specifies the current directory.
 - -llinklist links against the library liblinklist.a. The -l flag indicates that gcc should search for a library named linklist, and it will automatically look for liblinklist.a
 - **my_exe** --- linked with the static library liblinklist.a, which contains the implementation of the linked list functions.
- **./my_exe** --- for executing the file

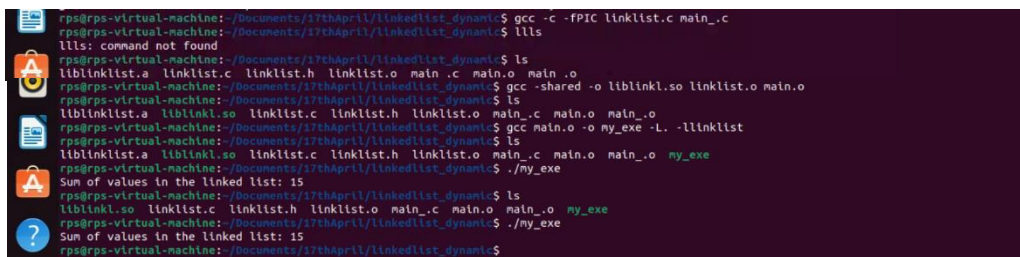
DYNAMIC:

DOUBLY LINKEDLIST:



```
rps@rps-virtual-machine: ~/Documents/17thApril/doubly_dynamic$ ls
doublylist.c doublylist.h liblinklist.a main.c
rps@rps-virtual-machine: ~/Documents/17thApril/doubly_dynamic$ gcc -c -fPIC doublylist.c main.c
rps@rps-virtual-machine: ~/Documents/17thApril/doubly_dynamic$ gcc -shared -o liblink.so doublylist.o main.o
rps@rps-virtual-machine: ~/Documents/17thApril/doubly_dynamic$ ls
doublylist.c doublylist.h doublylist.o liblinklist.a liblink.so main.c main.o
rps@rps-virtual-machine: ~/Documents/17thApril/doubly_dynamic$ gcc main.o -o my_exe -L. -llinklist
rps@rps-virtual-machine: ~/Documents/17thApril/doubly_dynamic$ ./my_exe
Sum of values in the doubly linked list: 15
rps@rps-virtual-machine: ~/Documents/17thApril/doubly_dynamic$
```

SINGLY LINKEDLIST:



```
rps@rps-virtual-machine: ~/Documents/17thApril/linkedList_dynamic$ gcc -c -fPIC linklist.c main.c
rps@rps-virtual-machine: ~/Documents/17thApril/linkedList_dynamic$ ll
ll: command not found
rps@rps-virtual-machine: ~/Documents/17thApril/linkedList_dynamic$ ls
liblinklist.a linklist.c linklist.h linklist.o main.c main.o main.o
rps@rps-virtual-machine: ~/Documents/17thApril/linkedList_dynamic$ gcc -shared -o liblinkl.so linklist.o main.o
rps@rps-virtual-machine: ~/Documents/17thApril/linkedList_dynamic$ ls
liblinkl.a liblinkl.so linklist.c linklist.h linklist.o main.c main.o main.o
rps@rps-virtual-machine: ~/Documents/17thApril/linkedList_dynamic$ gcc main.o -o my_exe -L. -llinklist
rps@rps-virtual-machine: ~/Documents/17thApril/linkedList_dynamic$ ./my_exe
Sum of values in the linked list: 15
rps@rps-virtual-machine: ~/Documents/17thApril/linkedList_dynamic$
```

- **gcc -c -fPIC linklist.c main.c**---fPIC flag is used to generate position-independent code, which is necessary for creating shared libraries.
- **gcc -shared -o liblink.so linklist.o main.o** --- creates a shared library named liblink.so from the object file linklist.o and main.o
- **gcc main.o -o my_exe -L. -llinklist** ---
 - -L. specifies the current directory.
 - -llinklist links against the library liblinklist.a. The -l flag indicates that gcc should search for a library named linklist, and it will automatically look for liblinklist.a
- **my_exe** --- linked with the static library liblinklist.a, which contains the implementation of the linked list functions.
- **./my_exe** --- for executing the file