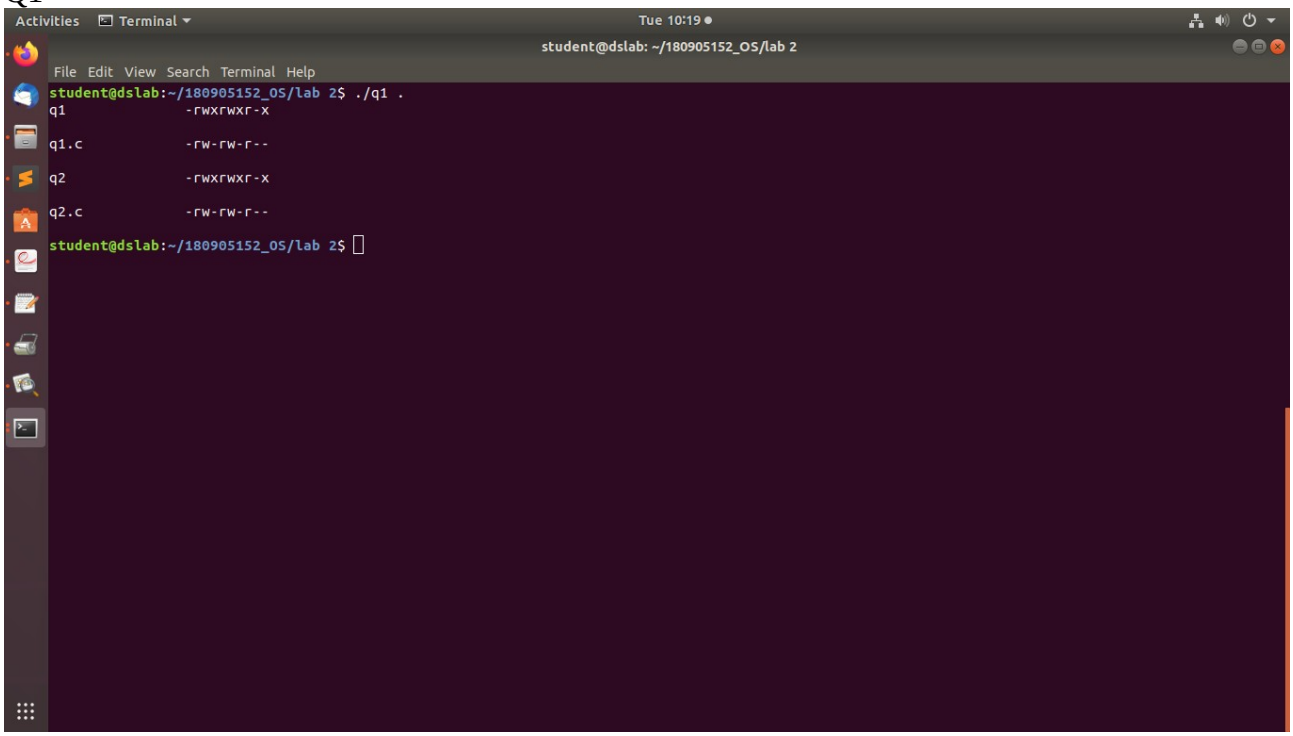
Lab 2

Q1



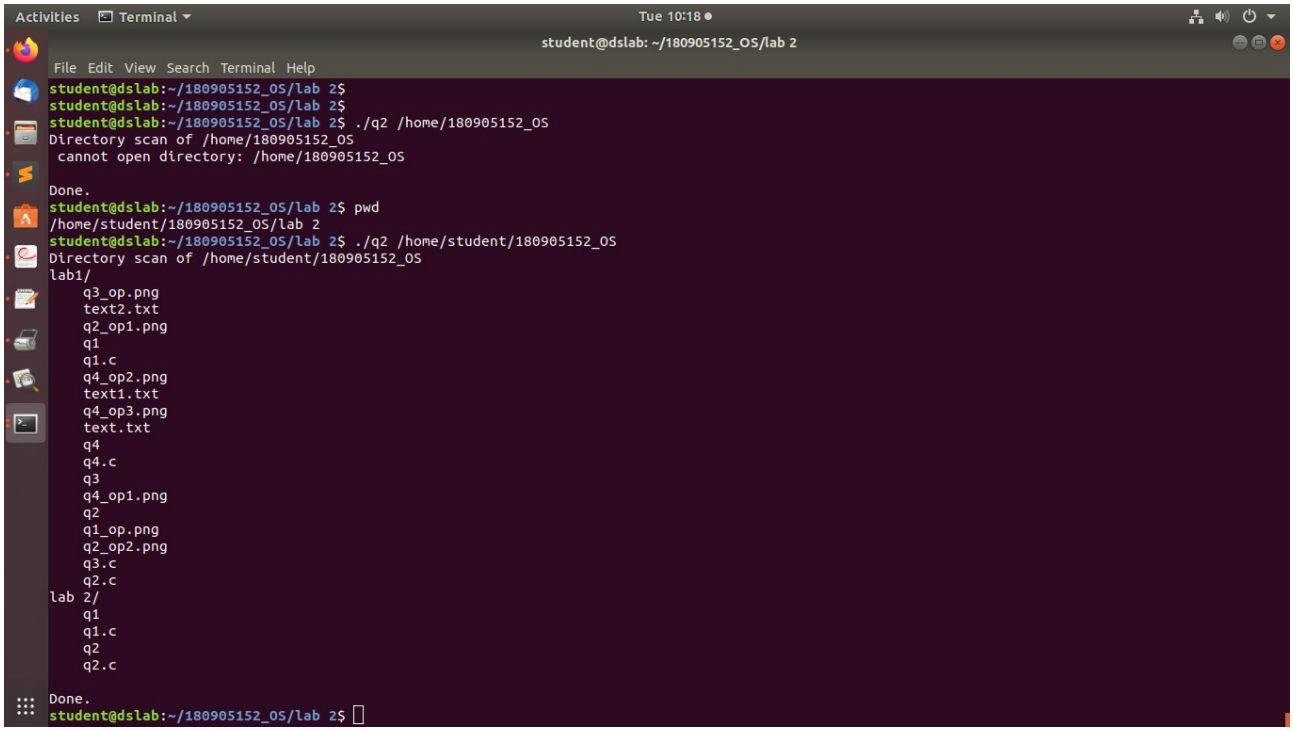
Code:

```
#include <unistd.h>
#include <stdio.h>
#include <sys/stat.h>
#include <sys/types.h>
#include <dirent.h>
#include <stdlib.h>

int main(int argc, char** argv)
{
   if(argc<2){
      printf("Error!");
      exit(0);
   }
   DIR * dp;
   struct dirent * entry;
   struct stat statbuf;
   if((dp = opendir(argv[1])) == NULL) {
      printf("Cannot open directory \n");
      return 0;
   }
   chdir(argv[1]);
   while((entry = readdir(dp)) != NULL)
   {
      lstat(entry->d_name,&statbuf);
```

```
        if(!S_ISDIR(statbuf.st_mode)){
            printf("%s \t",entry->d_name);
            printf( (S_ISDIR(statbuf.st_mode)) ? "d" : "-");
            printf( (statbuf.st_mode & S_IRUSR) ? "r" : "-");
            printf( (statbuf.st_mode & S_IWUSR) ? "w" : "-");
            printf( (statbuf.st_mode & S_IXUSR) ? "x" : "-");
            printf( (statbuf.st_mode & S_IRGRP) ? "r" : "-");
            printf( (statbuf.st_mode & S_IWGRP) ? "w" : "-");
            printf( (statbuf.st_mode & S_IXGRP) ? "x" : "-");
            printf( (statbuf.st_mode & S_IROTH) ? "r" : "-");
            printf( (statbuf.st_mode & S_IWOTH) ? "w" : "-");
            printf( (statbuf.st_mode & S_IXOTH) ? "x" : "-");
            printf("\n\n");
        }
    }
}
```

Q2

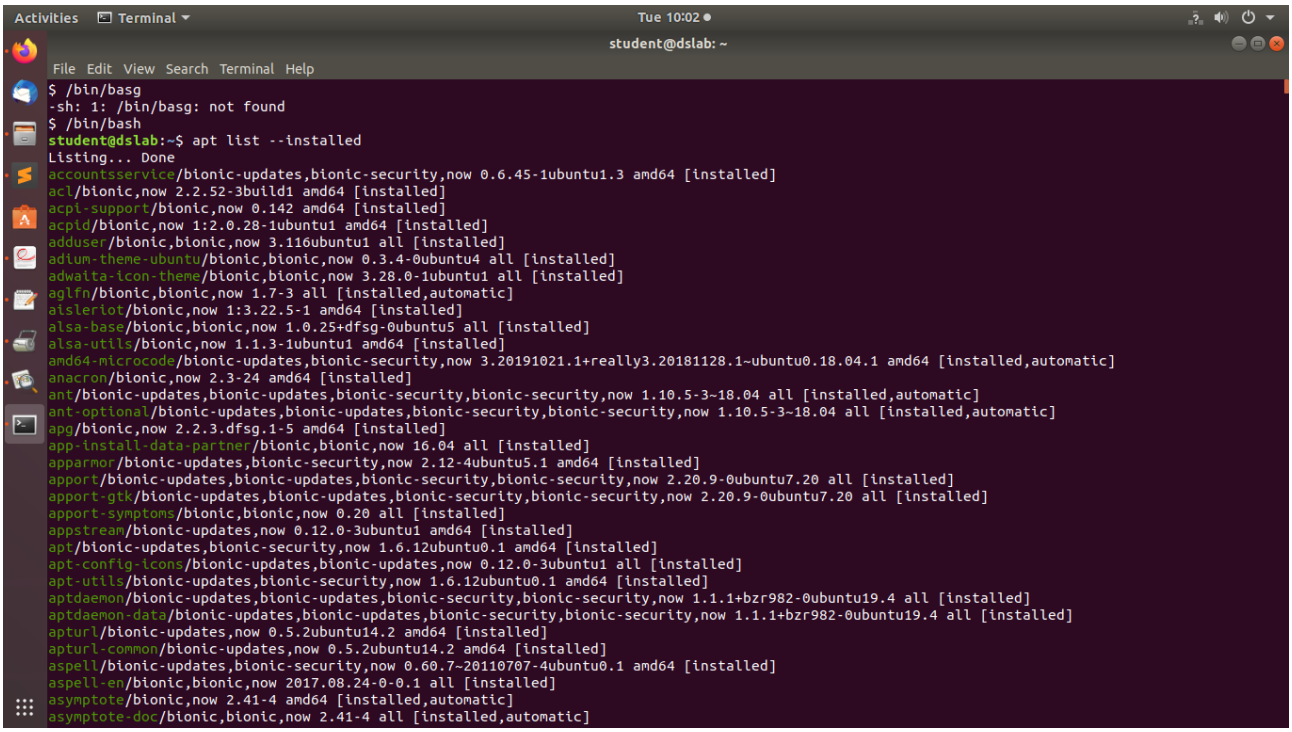


Code:

```
#include <unistd.h>
#include <stdio.h>
#include <dirent.h>
#include <string.h>
#include <sys/stat.h>
#include <stdlib.h>
void printdir(char *dir, int depth)
{
        DIR *dp;
        struct dirent *entry;
        struct stat statbuf;
```

```
        if((dp = opendir(dir)) == NULL)
        {
                fprintf(stderr," cannot open directory: %s\n", dir);
                return;
        }
        chdir(dir);
        while((entry = readdir(dp)) != NULL)
        {
                lstat(entry->d_name,&statbuf);
                if(S_ISDIR(statbuf.st_mode))
                {
                        if(strcmp(".",entry->d_name) == 0 || strcmp("..",entry->d_name) == 0)
                                continue;
                        printf("%*s%s/\n",depth,"",entry->d_name);
                        printdir(entry->d_name,depth+4);
                }
                else
                        printf("%*s%s\n",depth,"",entry->d_name);
        }
        chdir("..");
        closedir(dp);
}
int main(int argc, char ** argv)
{
         if(argc<2){
      printf("Error!");
      exit(0);
   }
        printf("Directory scan of %s\n",argv[1]);
        printdir(argv[1],0);
        printf("\nDone.\n");
        exit(0);
}
```

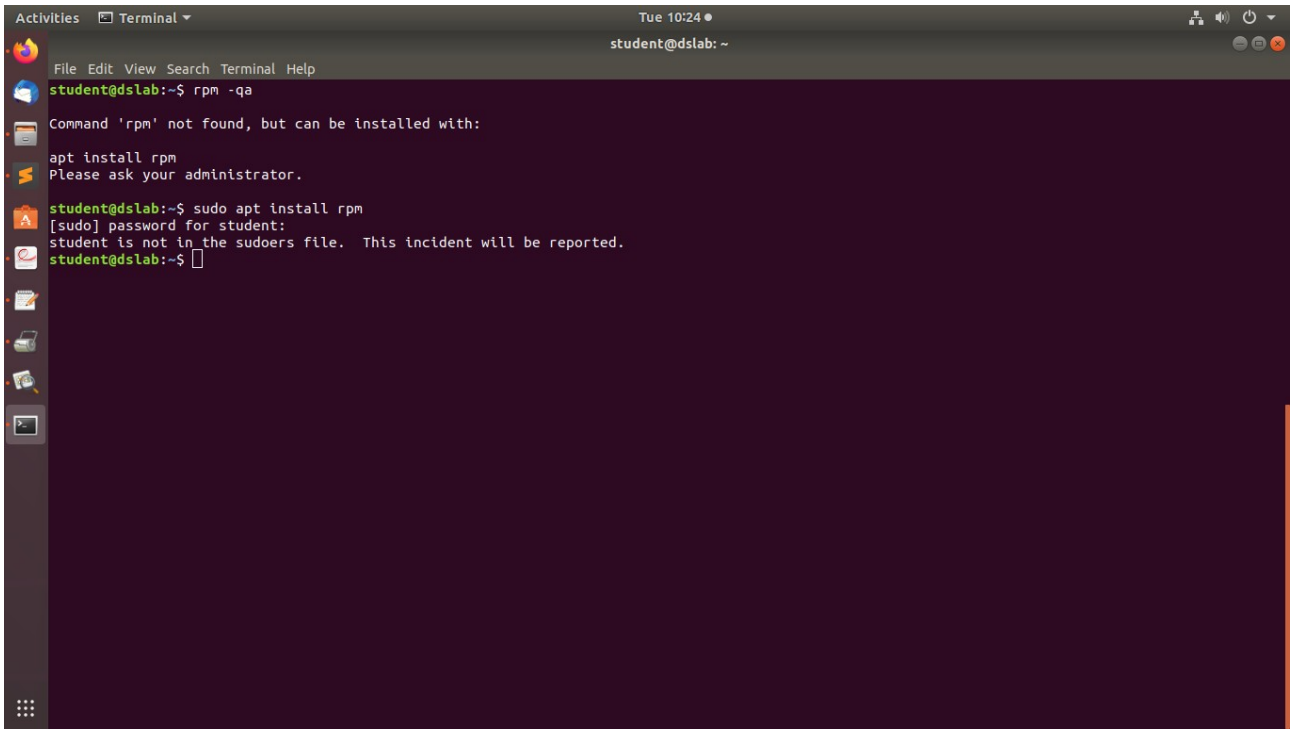
Q3



Command:

apt list --installed

Q4



Command:

rpm -qa