CD LAB : WEEK2 PROGRAMS ANS SCREENSHOTS

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SEC-B
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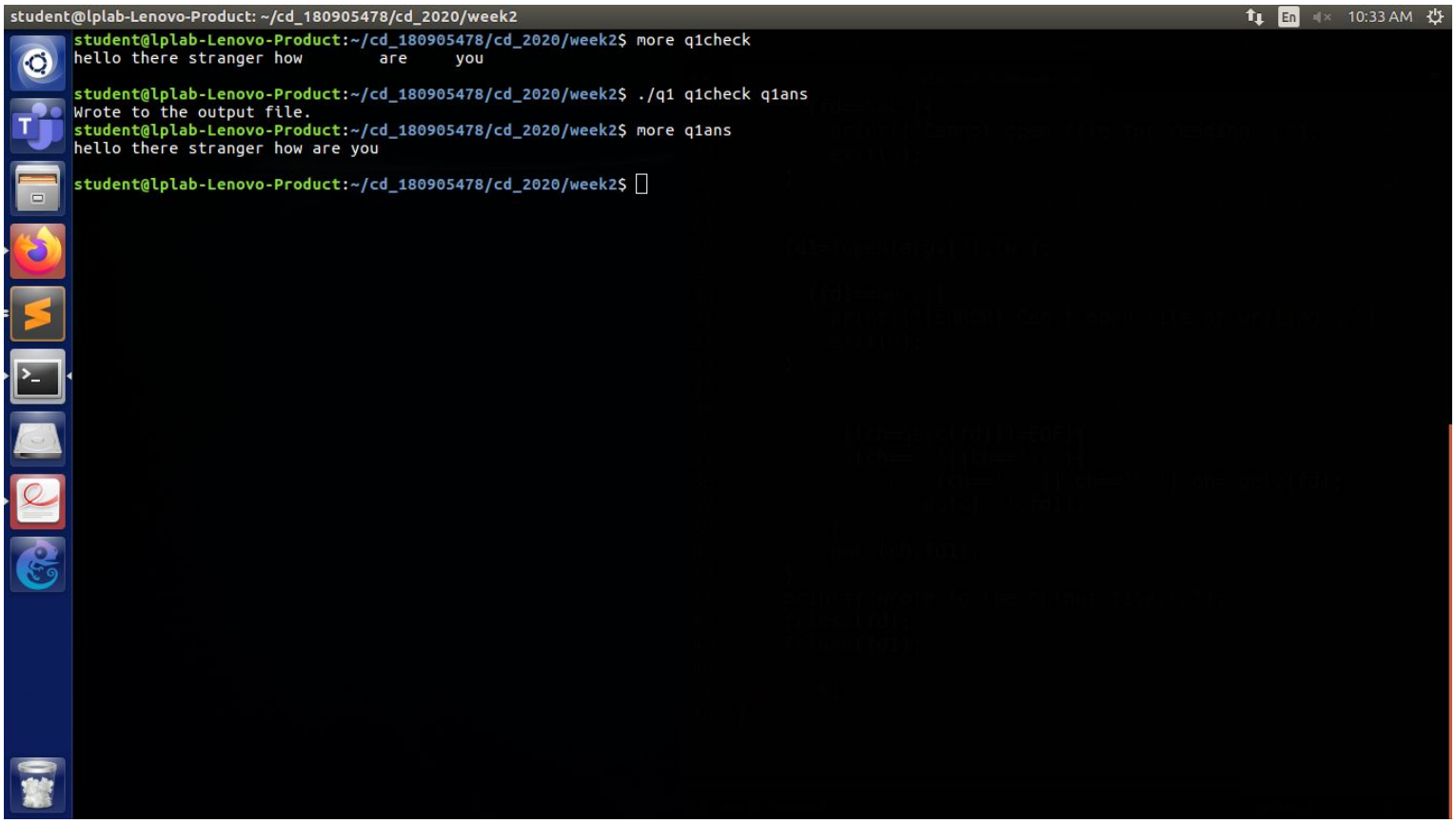
1. Program that takes file as input and replaces blank spaces and tabs by single space and writes the output to a file.

CODE :

```
/*
AUTHOR: SAGNIK CHATTERJEE
DATE : 9 DEC,2020
USAGE: ./q1 file1 file2
file1 is the input file
file2 is the output file

*/

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


int main(int argc ,char **argv){
    FILE *fd , *fd1;
    char buffer[1024],ch ;

    //argv[1] is the name of the input file passed
    fd=fopen(argv[1],"r");

    if(fd==NULL){
        printf("Cannot open file for reading \n");
        exit(0);
    }
```

```
    //argv[2] is the name of the output file to which result is
written

    fd1=fopen(argv[2],"w");

    if(fd1==NULL){
        printf("[ERROR] Can't open file or writing \n");
        exit(0);
    }

    //discard extra whitespace and tabs
    while((ch=getc(fd))!=EOF){
        if(ch==' '||ch=='\t'){
            while(ch==' ' || ch=='\t') ch= getc(fd);
                putc(' ',fd1);
        }
        putc(ch,fd1);
    }
    printf("Wrote to the output file.\n");
    fclose(fd);
    fclose(fd1);

return 0;}
```

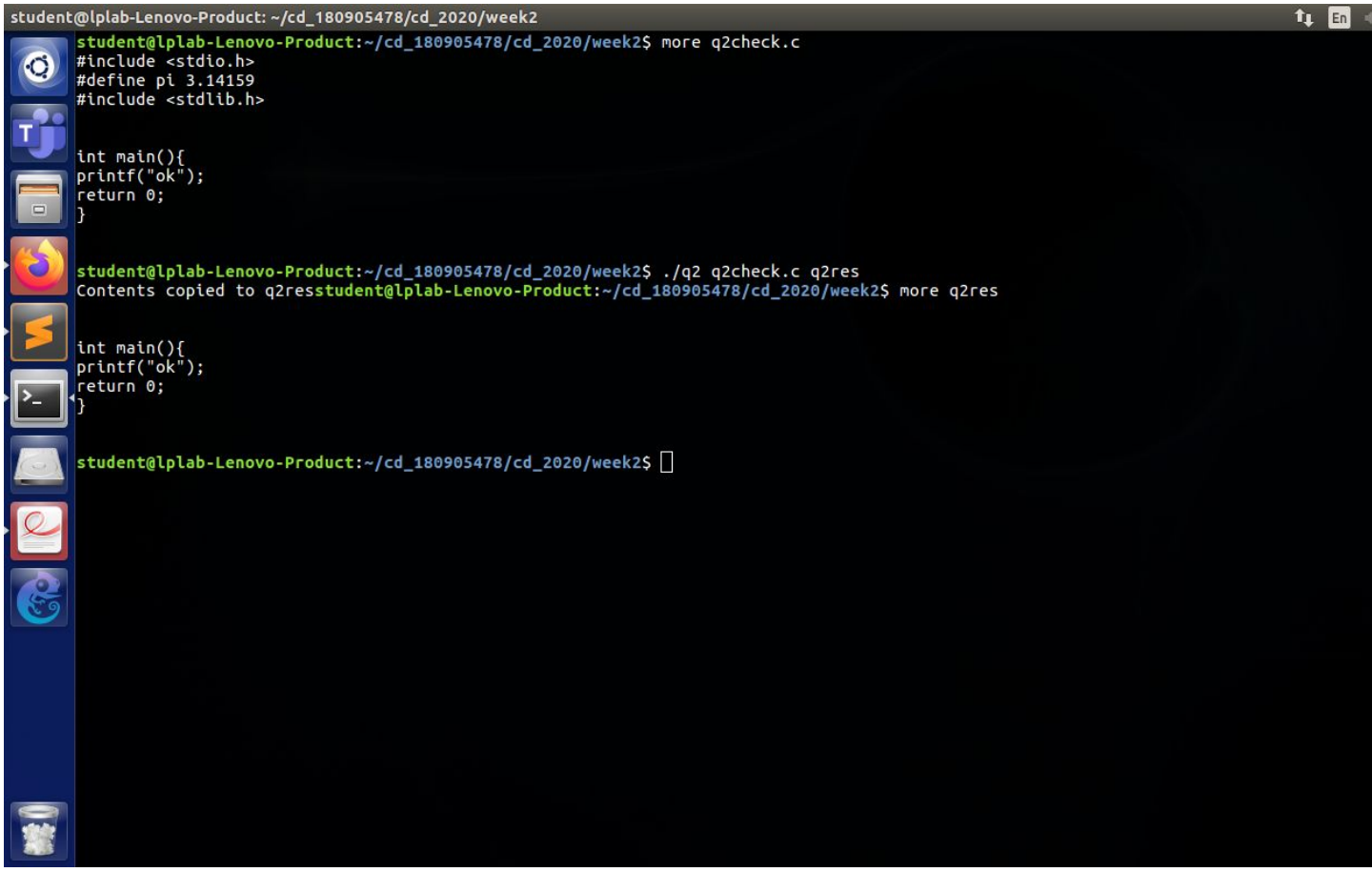


Q2 Program to discard processor directives from the given input c file.

CODE:

```
/*
AUTHOR :SAGNIK CHATTERJEE
DATE :dec9,2020
Usage : ./q2 file1  file2

file1 is the input C file
file2 is the result file

Here input taken from file1check.c and written to file2
*/

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

int main(int argc,char **argv){
    FILE *fa, *fb;
    //argv[1] is the input file for reading

    char ch;
    fa=fopen(argv[1],"r");
    fb=fopen(argv[2],"w");
    if(fa==NULL){
        printf("[ERROR] Couldnt the open for reading .\n");
        exit(0);
    }
    if(fb==NULL){
        printf("[ERROR] Couldn't open the file for writing.\n");
        exit(0);
    }
    char buffer[1024];//the buffer from whcih we will write to fd
    char ignore[1024];//we would read the line but will write to this
ignore array
```

```
    char *line=NULL;
    size_t len=0;
    ssize_t read;
    buffer[1023]='\n';
    while((read =getline(&line,&len,fa))!=-1){
        if(strstr(line,"#define")!=NULL ||
strstr(line,"#include")!=NULL){
        continue;
        }
        else{
            fputs(line,fb);
        }
    }


    printf("Contents copied to %s",argv[2]);
    fclose(fa);
    fclose(fb);
    return 0;
}
```



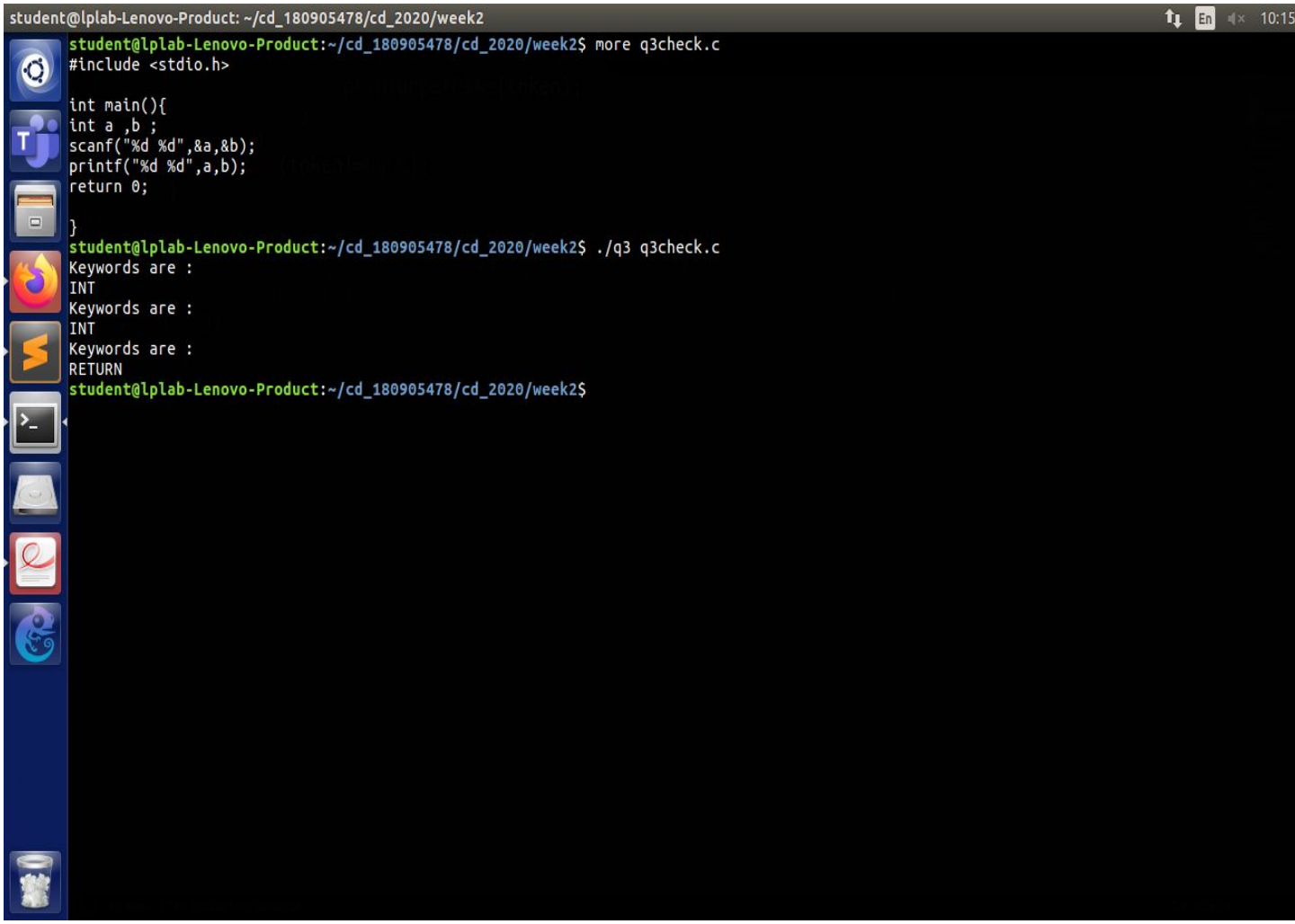
3. Program takes c file as input and recognise all the keywords and prints them in upper case.

Code :

```
/*
AUTHOR: SAGNIK CHATTERJEE
DATE : DEC 9,2020
USAGE : ./q3 file1
where file1 is the input c file

prints the result to the console
*/

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

```
#include <ctype.h>
//#include <stdbool.h>
#include <stddef.h>

const char *keywords[32] = {
      "auto","double","int","struct","break","else","long",
      "switch","case","enum","register","typedef","char",
      "extern","return","union","continue","for","signed",
      "void","do","if","static","while","default",
      "goto","sizeof","volatile","const","float","short",
      "unsigned"
};

const char delimiters[]=" .,;:!-()\n\t";

int isKeyword (char *word) {
      int i;
      for (i = 0; i < 32; ++i) {
            if (strcmp(word, keywords[i]) == 0) {
                  return 1;
            }
      }
      return 0;
}


void printUpperCase (char *word) {
      int l = strlen(word);
      char z;
      int i;
      printf("Keywords are :\n");
      for (i = 0; i < l; ++i) {
            z = word[i];
            printf("%c", z > 96 ? z - 32 : z);
      }
      printf("\n");
}
```

```
int main(int argc ,char **argv){


      FILE *fd1;

      //argv[1] is the input c file we give
      fd1=fopen(argv[1],"r");

      if(fd1==NULL){
            printf("[ERROR] Can't open the file to read from. \n");
            exit(0);
      }
      char buffer[1024];
      while(fgets(buffer,1024,fd1) >0){
            //temp copy of string
            char *cp =(char*)malloc(1024*sizeof(char));
            strcpy(cp,buffer);

            char *token=(char*)malloc(256*sizeof(char));

            do {//strsep :- extract the token from string,returns null
if token not found
                  token =strsep(&cp,delimiters);
                  if(token!=NULL)
                  {
                        if(isKeyword(token)){
                              printUpperCase(token);
                        }
                  }
            }while(token!=NULL);
      }

      fclose(fd1);
      //while writing to file use toupper() to make it capital
      //since toupper() runs on a char , run a loop or can use ascii
style
return 0;
}
```


student@lplab-Lenovo-Product: ~/cd_180905478/cd_2020/week2
En
10:15
student@lplab-Lenovo-Product:~/cd_180905478/cd_2020/week2$ more q3check.c
#include <stdio.h>
int main(){
int a ,b ;
scanf("%d %d",&a,&b);
printf("%d %d",a,b);
return 0;
}
student@lplab-Lenovo-Product:~/cd_180905478/cd_2020/week2$ ./q3 q3check.c
Keywords are :
INT
Keywords are :
INT
Keywords are :
RETURN
student@lplab-Lenovo-Product:~/cd_180905478/cd_2020/week2$