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Sample program

```
#include<stdio.h>
int main(){
   FILE *fa, *fb;
   int ca, cb;
   fa=fopen("prog.c","r");
   if(fa==NULL){
      printf("File not found");
      exit(0);
   }
   fb=fopen("q4out.c","w");
   ca=getc(fa);
   while(ca!=EOF){
      if(ca==' '){
         putc(ca,fb);
         while(ca==' '){
            ca=getc(fa);
         }
      }
      if(ca=='/'){
         cb=getc(fa);
         if(cb=='/'){
            while(ca!='/n'){
               ca=getc(fa);
            }
         }
         else if(cb=='*'){
            do{
```

```
            while(ca!='*'){
               ca=getc(fa);
            }
            ca=getc(fa);
         }while(ca!='/');
      }
      else{
         putc(ca,fb);
         putc(cb,fb);
      }
   }
   else{
      putc(ca,fb);
      ca=getc(fa);
   }

}
fclose(fa);
fclose(fb);
return 0;
}
```

Input

```
#include<stdio.h>
int main()//Hello world this is testing
{
printf("Hello world");
/* Checking the world
My name is prabhat */
return 0;
```

}

Output

```
#include<stdio.h>
int main(){
printf("Hello world");

return 0;
}
```

Q1.

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

int main()
 {
 char c1,c2;
 FILE *f1,*f2;
 f1= fopen("l2q1input.c","r");
 f2= fopen("outputl2q1.c","w");
 if(f1 == NULL || f2 ==NULL)
 {
 printf("Either the input or the output file does not exist \n");
 return 1;
 }
 c1=fgetc(f1);
 while(c1 != EOF)
 {
 if(c1 == '/')
 {
 c2 = getc(f1);
 if(c2 == '/')
 {
 putc(c1,f2);
 putc(c2,f2);
 c1 = getc(f1);
 while(c1 !='\n')
 {
 putc(c1,f2);
 c1 = getc(f1);
 }
 }
 else if(c2 == '*')
 {
 putc(c1,f2);
 putc(c2,f2);
 c1 = getc(f1);
 do
 {
 while(c1 != '*')
 {
 putc(c1,f2);
 c1 = getc(f1);
```

```
}
putc(c1,f2);
c1 = getc(f1);
} while(c1 != '/');
}
}
if(c1 == '"')
{
putc(c1,f2);
c1 = getc(f1);
while(c1 != '"')
{
putc(c1,f2);
c1 = getc(f1);
}
putc(c1,f2);
c1 = getc(f1);
}
if(c1 == ' ' || c1 == '\t')
{
putc(' ',f2);
while(c1 == ' ' || c1 == '\t')
{
c1 = getc(f1);
}
}
putc(c1,f2);
c1 = getc(f1);
}
fclose(f1);
fclose(f2);
return 0;
}
```

Input

```
#include<stdio.h>

int main()//Hello world this is testing

{

printf("Hello world");
```

```
/* Checking the world
My name is prabhat */

int a       = 5;
char c =     'x';
return 0;
}
```

Output

```
#include<stdio.h>
int main()//Hello world this is testing
{
printf("Hello world");
/* Checking the world
My name is prabhat */

int a = 5;
char c = 'x';
return 0;
}
```

Q2.

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

#define FILEINPUT "prog.c"
#define FILEOUTPUT "l2cop_out.c"

const char *direct[] = {"#include","#define"};

int is_directive(const char *str)
{
   for(int i = 0; i < sizeof(direct)/sizeof(char *); i++)
   {
      int len = strlen(direct[i]);

   if(strncmp(str, direct[i], len) == 0)
      {
         return 1;
      }
    }

   return 0;
}

int main()
{
   char buf[2048];
```

```
  FILE *f1,*f2;

f1 = fopen(FILEINPUT, "r");
f2 = fopen(FILEOUTPUT, "w");

if(f1 == NULL || f2 == NULL)
{
  perror("File doesn't exist\n");
  return 1;
}

while(fgets(buf, 2048, f1) != NULL)
{
     if(!is_directive(buf))
     {
        fputs(buf, f2);
     }
  }

fclose(f1);
fclose(f2);
f1= fopen(FILEINPUT,"w");
f2=fopen(FILEOUTPUT,"r");
char copy;
copy=getc(f2);

while(copy!=EOF)
{
  putc(copy,f1);
```

```
   copy=getc(f2);
  }

  fclose(f1);
  fclose(f2);

}
```

Input

```
#include<stdio.h>

#define Check 10

int main()//Hello              world this is testing
{
printf(" #include      Hello world");
/* Checking the #include world
My name is prabhat */
hello world
// #include what is up
int a       = 5;
char c =      'x';
return 0;
}
```

Output

```
int main()//Hello              world this is testing
{
printf(" #include      Hello world");
/* Checking the #include world
My name is prabhat */
```

```
hello world

// #include what is up

int a       = 5;

char c =      'x';

return 0;

}
```

Q3.

```
#include <stdio.h>
#include <stdlib.h>
#include<string.h>
#include<ctype.h>
#define FILEINPUT "prog.c"
const char *keywords[] = {"const", "char", "int","return", "for", "while", "do", "switch","if", "else","case", "break"};
int is_keyword(const char *str)
{for(int i = 0; i < sizeof(keywords)/sizeof(char *); ++i)
{
if(strcmp(str, keywords[i]) == 0)
{return 1;
}}
return 0;
}
void strtoupper(char *str, const int len)
{
for(int i = 0; i < len; ++i)
{
str[i] = toupper(str[i]);
}
}
enum
{
INSIDE_WORD,
OUTSIDE_WORD
};
int main()
```

```
{
FILE *f1,*f2;
int line=1,col=1,k=0;
char c,buf[512];
f1 = fopen(FILEINPUT, "r");
if(f1 == NULL){
perror("The input file doesn't exist\n");return 1;}
int state = OUTSIDE_WORD;
printf("Keywords : \n");
while((c = fgetc(f1)) != EOF){
switch(state)
{
case INSIDE_WORD:
if(isalpha(c))
{
buf[k++]=c;
}
else
{
buf[k]='\0';
if(is_keyword(buf))
{
strtoupper(buf, k);
printf("%s : at (%d , %d)\n", buf, line, col - k);
}
k=0;state=OUTSIDE_WORD;}
break;
case OUTSIDE_WORD:
if(isalpha(c))
```

```
{
buf[k++]=c;
state=INSIDE_WORD;}break;
}
if(c == '\n')
{
++line;
col = 1;
}
else
{
++col;
}
}
fclose(f1);
}
```

Input

```
#include<stdio.h>

#define Check 10

int main()//Hello              world this is testing
{
printf(" #include      Hello world");
/* Checking the #include world
My name is prabhat */
hello world
// #include what is up
int a       = 5;
```

```
char c =      'x';

return 0;

}
```

Output