Perl & Awk Scripting

Foss Lab

Submitted by

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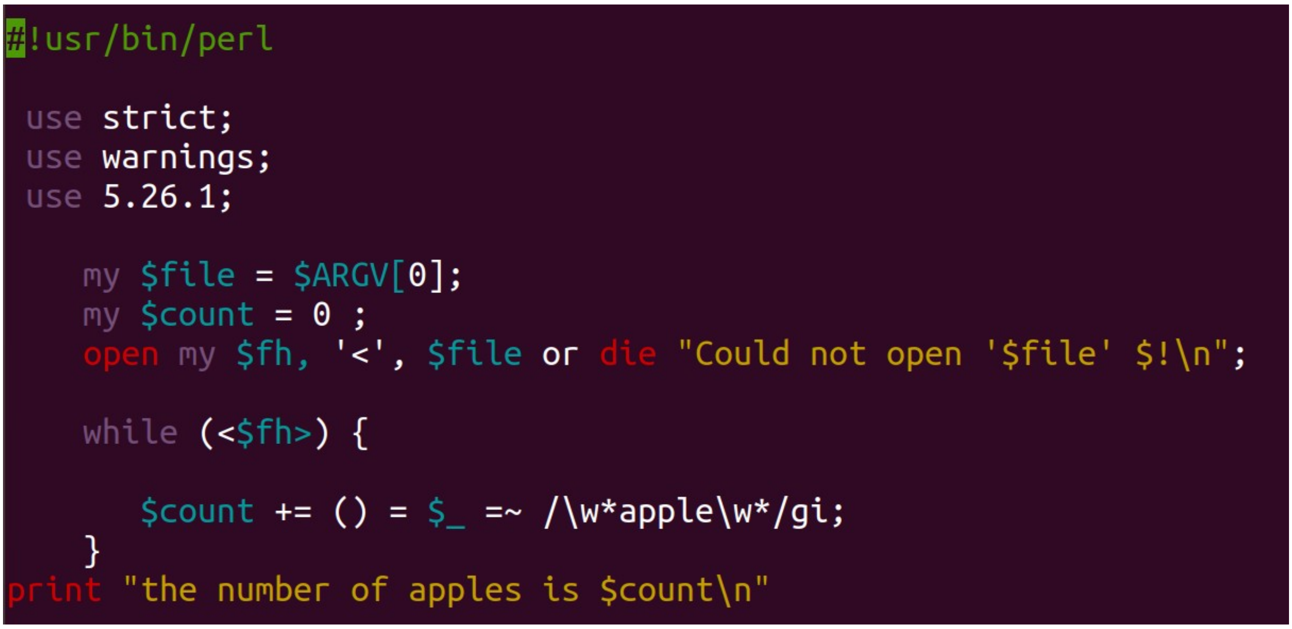
S3 CSE

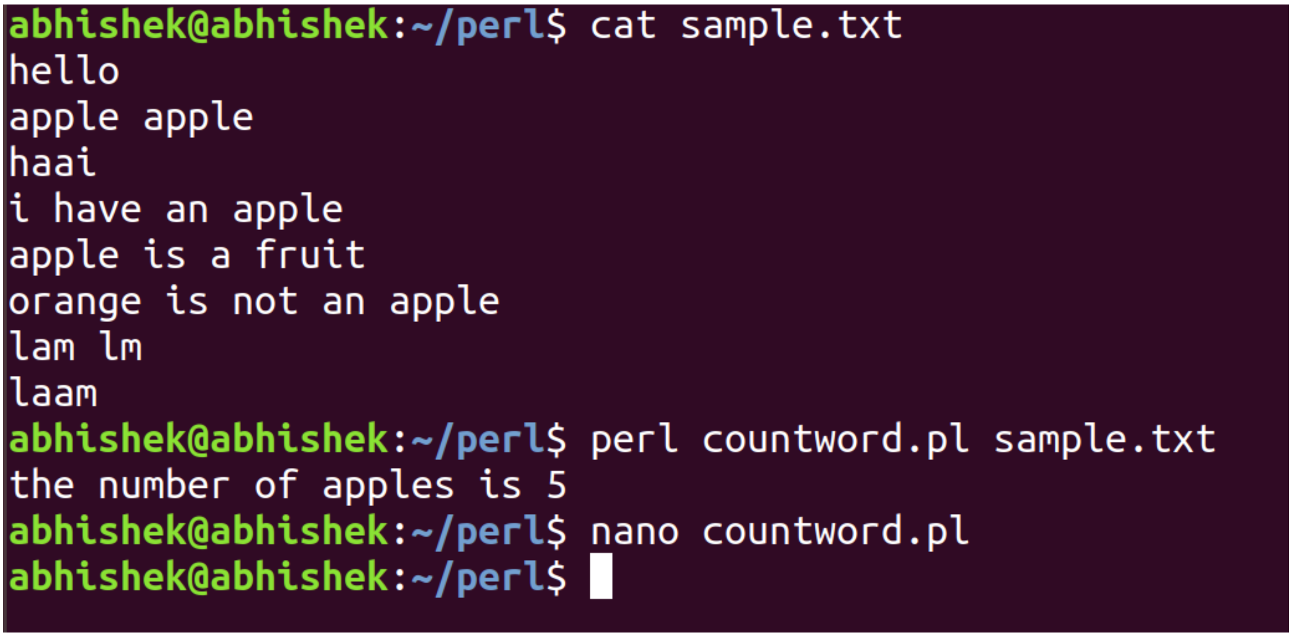
1. Create a text file and answer the following queries :
a) Search for the pattern ‘apple’ in the file and display the number of occurences.

Script



```
#!usr/bin/perl

 use strict;
 use warnings;
 use 5.26.1;

    my $file = $ARGV[0];
    my $count = 0 ;
    open my $fh, '<', $file or die "Could not open '$file' $!\n";

    while (<$fh>) {

       $count += () = $_ =~ /\w*apple\w*/gi;
    }
print "the number of apples is $count\n"
```

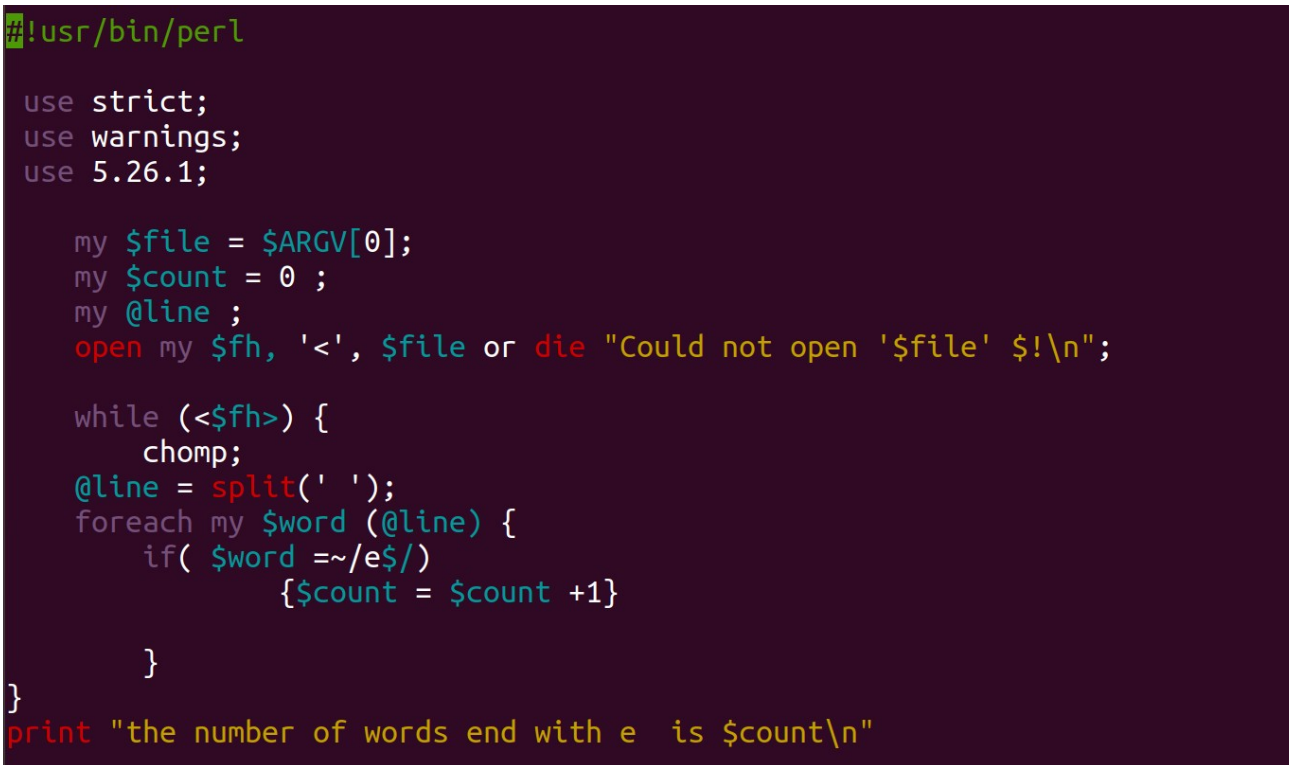
Output



```
abhishek@abhishek:~/perl$ cat sample.txt
hello
apple apple
haai
i have an apple
apple is a fruit
orange is not an apple
lam lm
laam
abhishek@abhishek:~/perl$ perl countword.pl sample.txt
the number of apples is 5
abhishek@abhishek:~/perl$ nano countword.pl
abhishek@abhishek:~/perl$ 
```

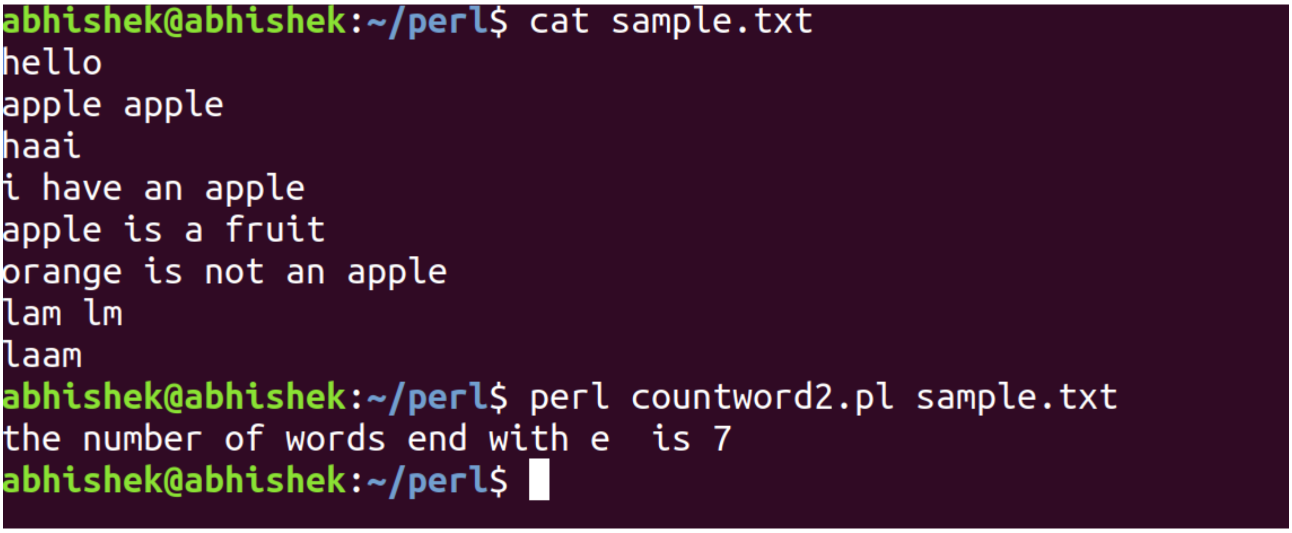
b) Count the number of words that ends with ‘e’

Script



```
#!usr/bin/perl

 use strict;
 use warnings;
 use 5.26.1;

    my $file = $ARGV[0];
    my $count = 0 ;
    my @line ;
    open my $fh, '<', $file or die "Could not open '$file' $!\n";

    while (<$fh>) {
        chomp;
    @line = split(' ');
    foreach my $word (@line) {
        if( $word =~/e$/)
                {$count = $count +1}

        }
}
print "the number of words end with e  is $count\n"
```

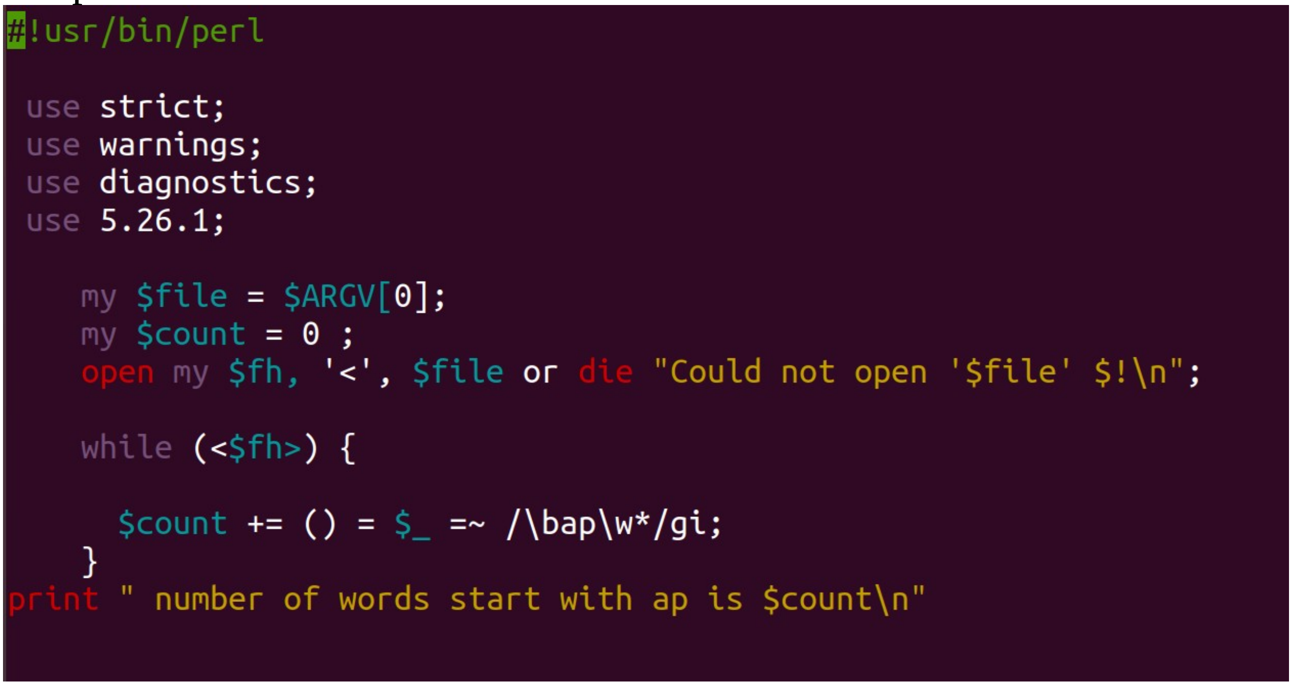
Output



```
abhishek@abhishek:~/perl$ cat sample.txt
hello
apple apple
haai
i have an apple
apple is a fruit
orange is not an apple
lam lm
laam
abhishek@abhishek:~/perl$ perl countword2.pl sample.txt
the number of words end with e  is 7
abhishek@abhishek:~/perl$ 
```

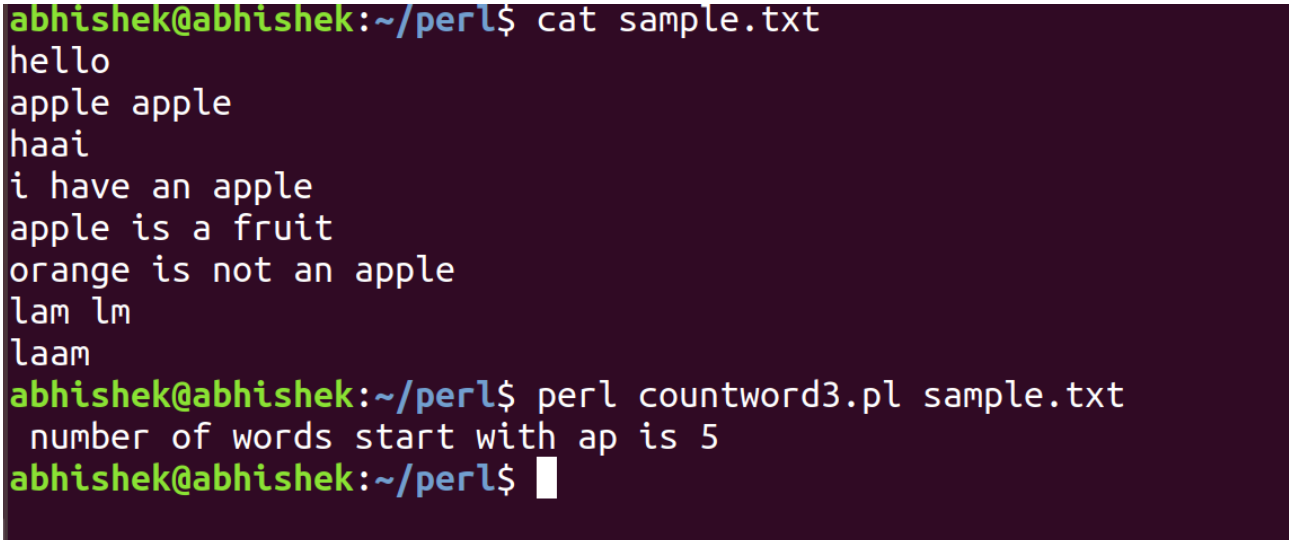
c) Count the number of words that starts with ‘ap’

Script



```
#!usr/bin/perl

 use strict;
 use warnings;
 use diagnostics;
 use 5.26.1;

    my $file = $ARGV[0];
    my $count = 0 ;
    open my $fh, '<', $file or die "Could not open '$file' $!\n";

    while (<$fh>) {

      $count += () = $_ =~ /\bap\w*/gi;
    }
print " number of words start with ap is $count\n"
```

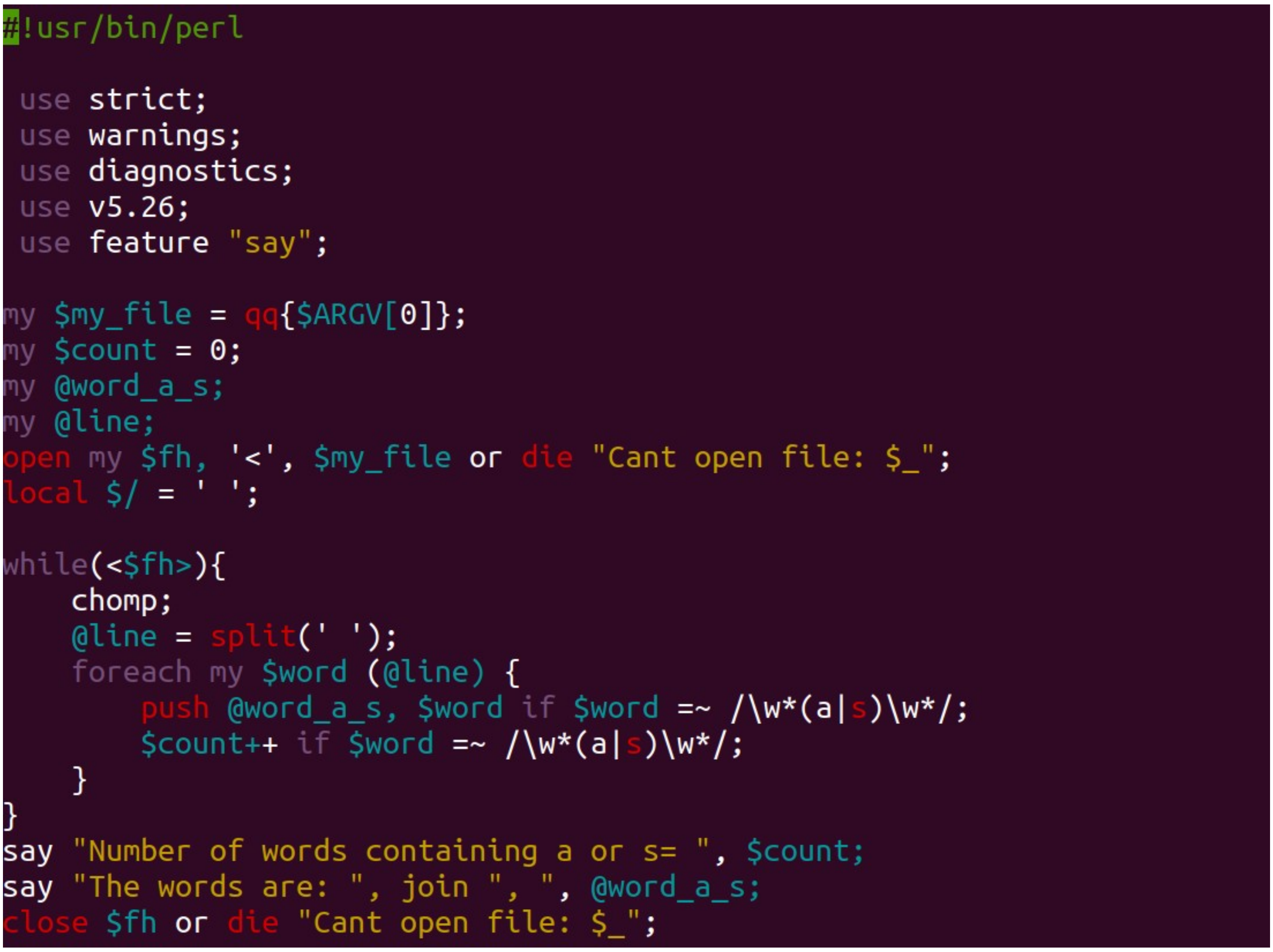
Output



```
abhishek@abhishek:~/perl$ cat sample.txt
hello
apple apple
haai
i have an apple
apple is a fruit
orange is not an apple
lam lm
laam
abhishek@abhishek:~/perl$ perl countword3.pl sample.txt
 number of words start with ap is 5
abhishek@abhishek:~/perl$ 
```

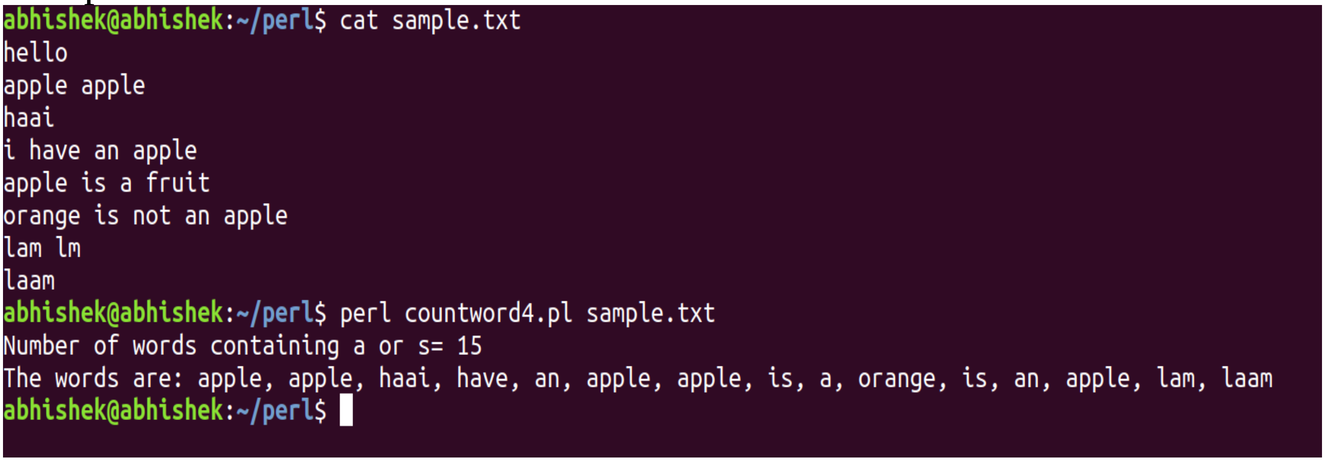
d) Search for words containing ‘a’ or ‘s’

Script



```
#!usr/bin/perl

 use strict;
 use warnings;
 use diagnostics;
 use v5.26;
 use feature "say";

my $my_file = qq{$ARGV[0]};
my $count = 0;
my @word_a_s;
my @line;
open my $fh, '<', $my_file or die "Cant open file: $_";
local $/ = ' ';

while(<$fh>){
    chomp;
    @line = split(' ');
    foreach my $word (@line) {
        push @word_a_s, $word if $word =~ /\w*(a|s)\w*/;
        $count++ if $word =~ /\w*(a|s)\w*/;
    }
}
say "Number of words containing a or s= ", $count;
say "The words are: ", join ", ", @word_a_s;
close $fh or die "Cant open file: $_";
```

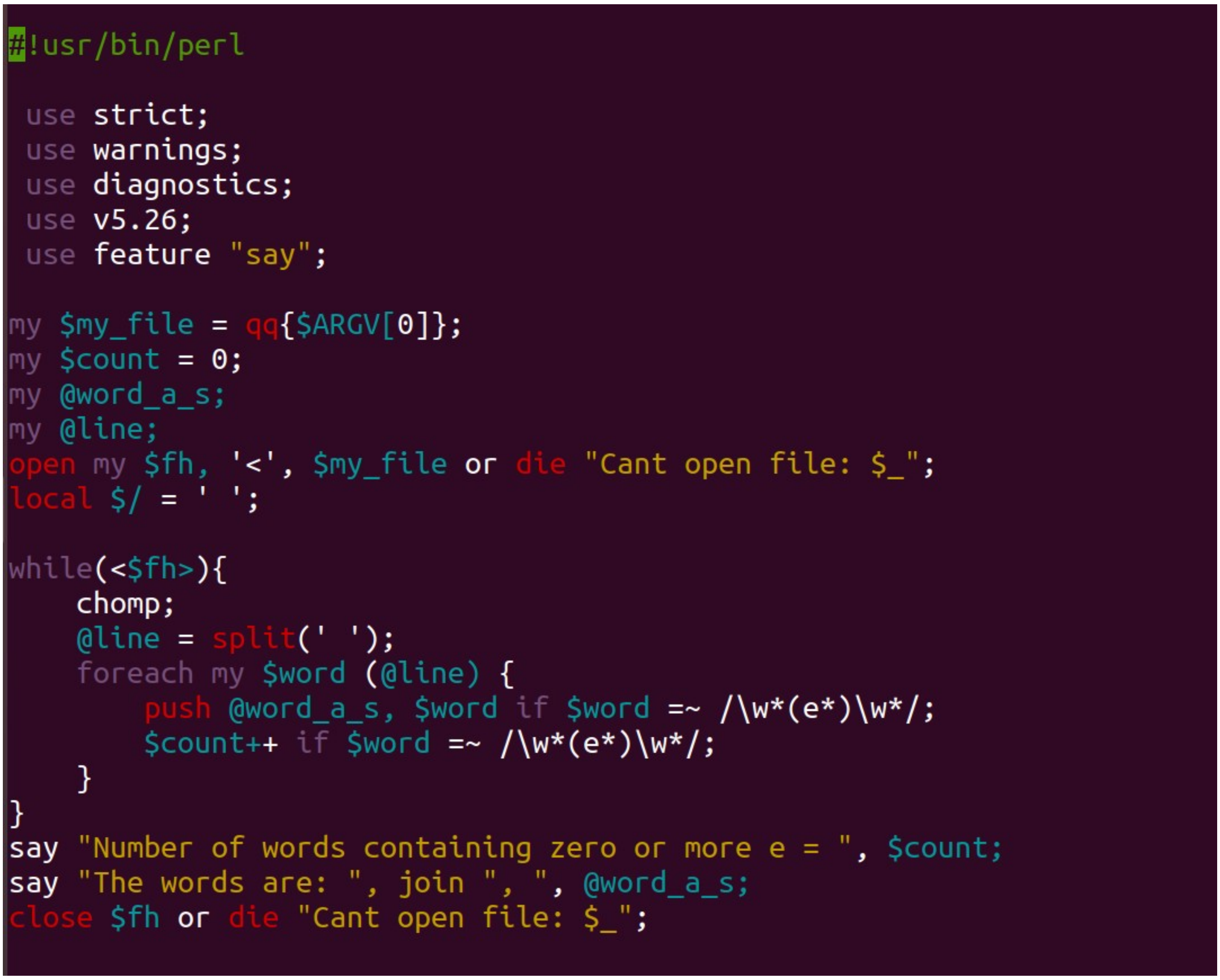
Output



```
abhishek@abhishek:~/perl$ cat sample.txt
hello
apple apple
haai
i have an apple
apple is a fruit
orange is not an apple
lam lm
laam
abhishek@abhishek:~/perl$ perl countword4.pl sample.txt
Number of words containing a or s= 15
The words are: apple, apple, haai, have, an, apple, apple, is, a, orange, is, an, apple, lam, laam
abhishek@abhishek:~/perl$ 
```

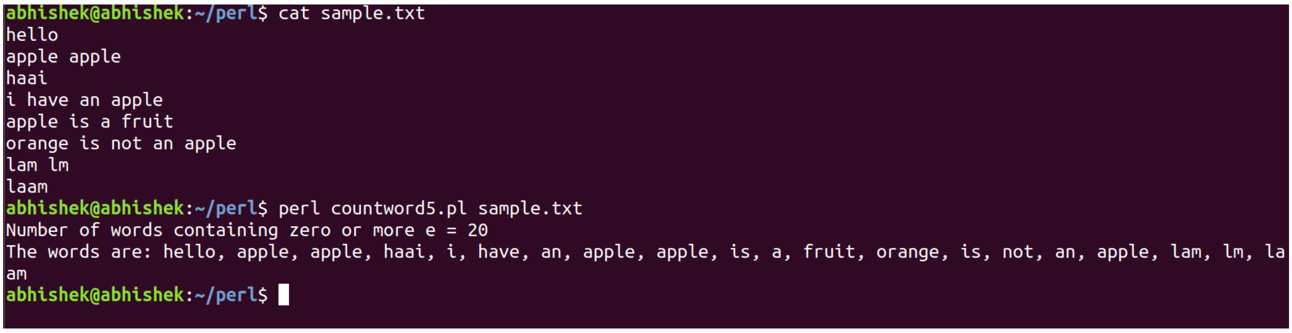
e) Search for words containing zero or more occurrence of ‘e’

Script



```
#!usr/bin/perl

 use strict;
 use warnings;
 use diagnostics;
 use v5.26;
 use feature "say";

my $my_file = qq{$ARGV[0]};
my $count = 0;
my @word_a_s;
my @line;
open my $fh, '<', $my_file or die "Cant open file: $_";
local $/ = ' ';

while(<$fh>){
    chomp;
    @line = split(' ');
    foreach my $word (@line) {
        push @word_a_s, $word if $word =~ /\w*(e*)\w*/;
        $count++ if $word =~ /\w*(e*)\w*/;
    }
}
say "Number of words containing zero or more e = ", $count;
say "The words are: ", join ", ", @word_a_s;
close $fh or die "Cant open file: $_";
```

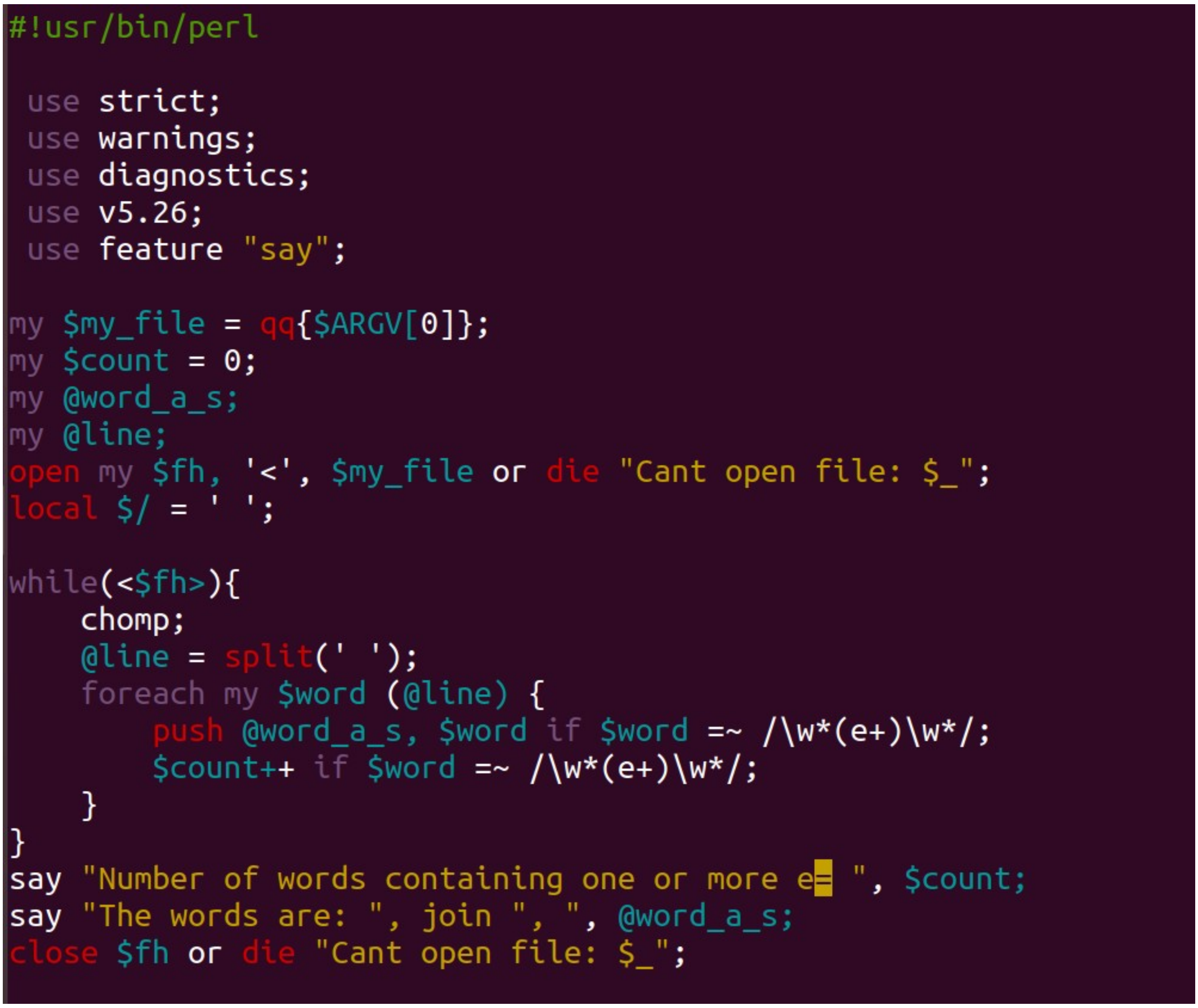
Output



```
abhishek@abhishek:~/perl$ cat sample.txt
hello
apple apple
haai
i have an apple
apple is a fruit
orange is not an apple
lam lm
laam
abhishek@abhishek:~/perl$ perl countword5.pl sample.txt
Number of words containing zero or more e = 20
The words are: hello, apple, apple, haai, i, have, an, apple, apple, is, a, fruit, orange, is, not, an, apple, lam, lm, la
am
abhishek@abhishek:~/perl$ █
```

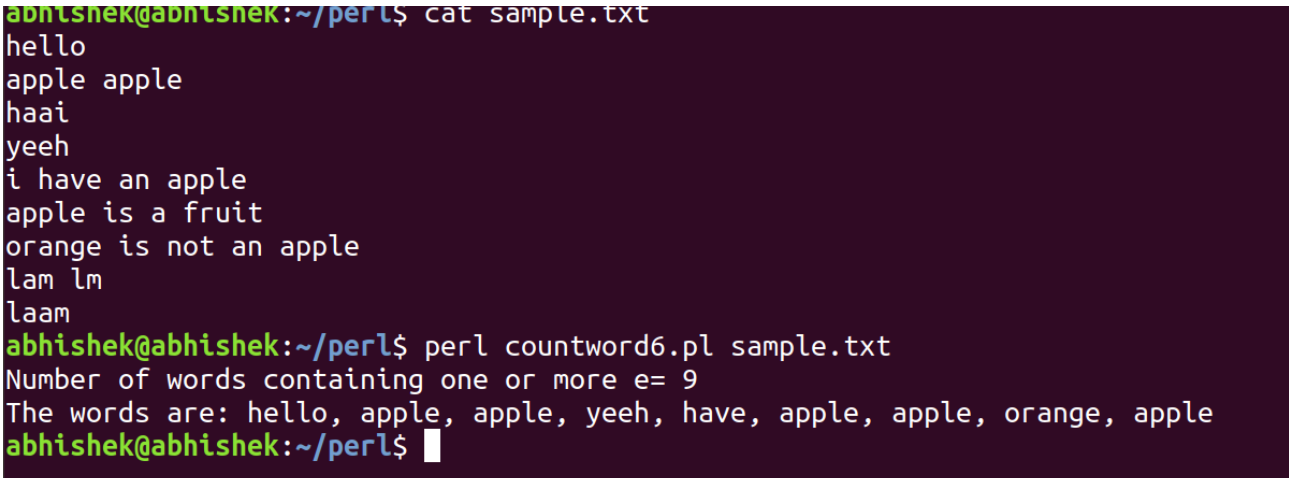
f) Search for words containing one or more occurrence of ‘e’

Script



```
#!usr/bin/perl

 use strict;
 use warnings;
 use diagnostics;
 use v5.26;
 use feature "say";

my $my_file = qq{$ARGV[0]};
my $count = 0;
my @word_a_s;
my @line;
open my $fh, '<', $my_file or die "Cant open file: $_";
local $/ = ' ';

while(<$fh>){
    chomp;
    @line = split(' ');
    foreach my $word (@line) {
        push @word_a_s, $word if $word =~ /\w*(e+)\w*/;
        $count++ if $word =~ /\w*(e+)\w*/;
    }
}
say "Number of words containing one or more e= ", $count;
say "The words are: ", join ", ", @word_a_s;
close $fh or die "Cant open file: $_";
```

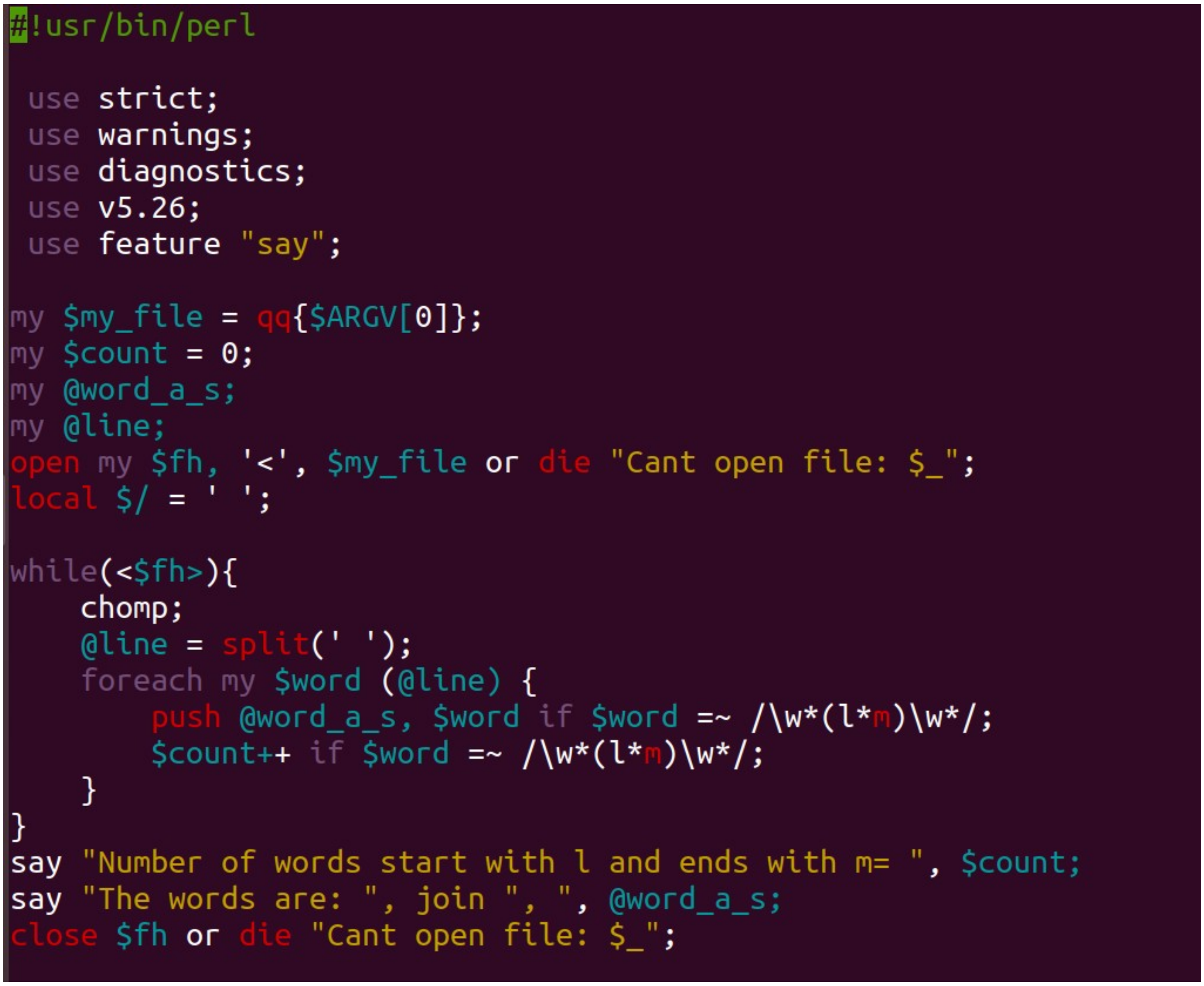
Output



```
abhishek@abhishek:~/perl$ cat sample.txt
hello
apple apple
haai
yeeh
i have an apple
apple is a fruit
orange is not an apple
lam lm
laam
abhishek@abhishek:~/perl$ perl countword6.pl sample.txt
Number of words containing one or more e= 9
The words are: hello, apple, apple, yeeh, have, apple, apple, orange, apple
abhishek@abhishek:~/perl$ 
```

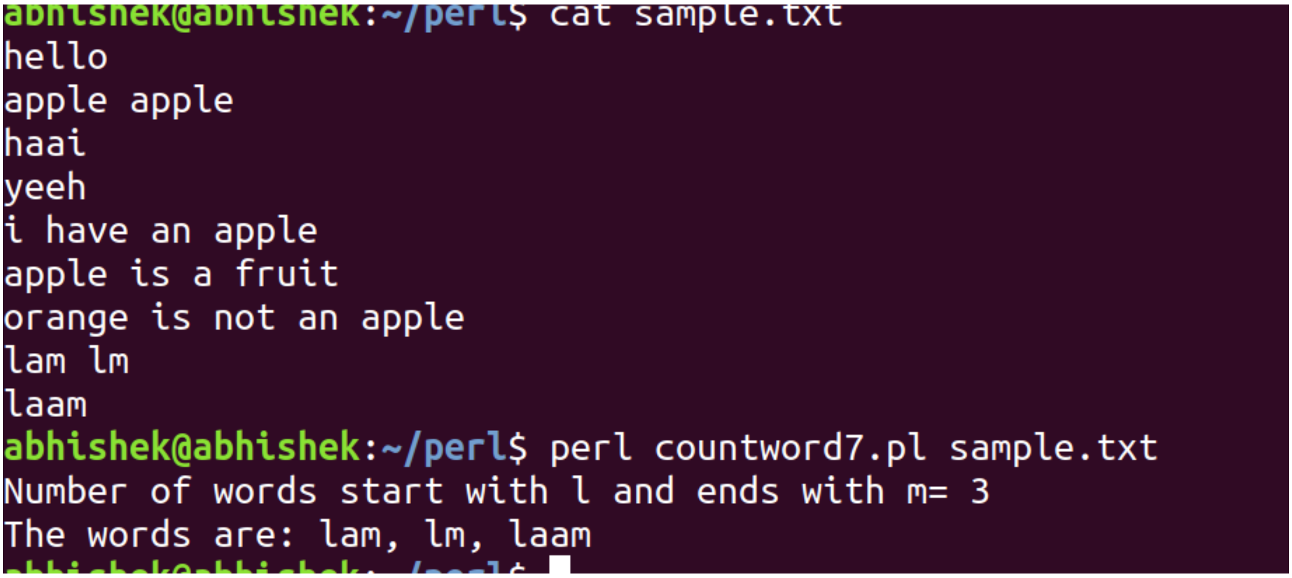
g) Search for words containing the letters ‘l’ and ‘m’, with any number of characters in between

Script



```
#!usr/bin/perl

 use strict;
 use warnings;
 use diagnostics;
 use v5.26;
 use feature "say";

my $my_file = qq{$ARGV[0]};
my $count = 0;
my @word_a_s;
my @line;
open my $fh, '<', $my_file or die "Cant open file: $_";
local $/ = ' ';

while(<$fh>){
    chomp;
    @line = split(' ');
    foreach my $word (@line) {
        push @word_a_s, $word if $word =~ /\w*(l*m)\w*/;
        $count++ if $word =~ /\w*(l*m)\w*/;
    }
}
say "Number of words start with l and ends with m= ", $count;
say "The words are: ", join ", ", @word_a_s;
close $fh or die "Cant open file: $_";
```

Output

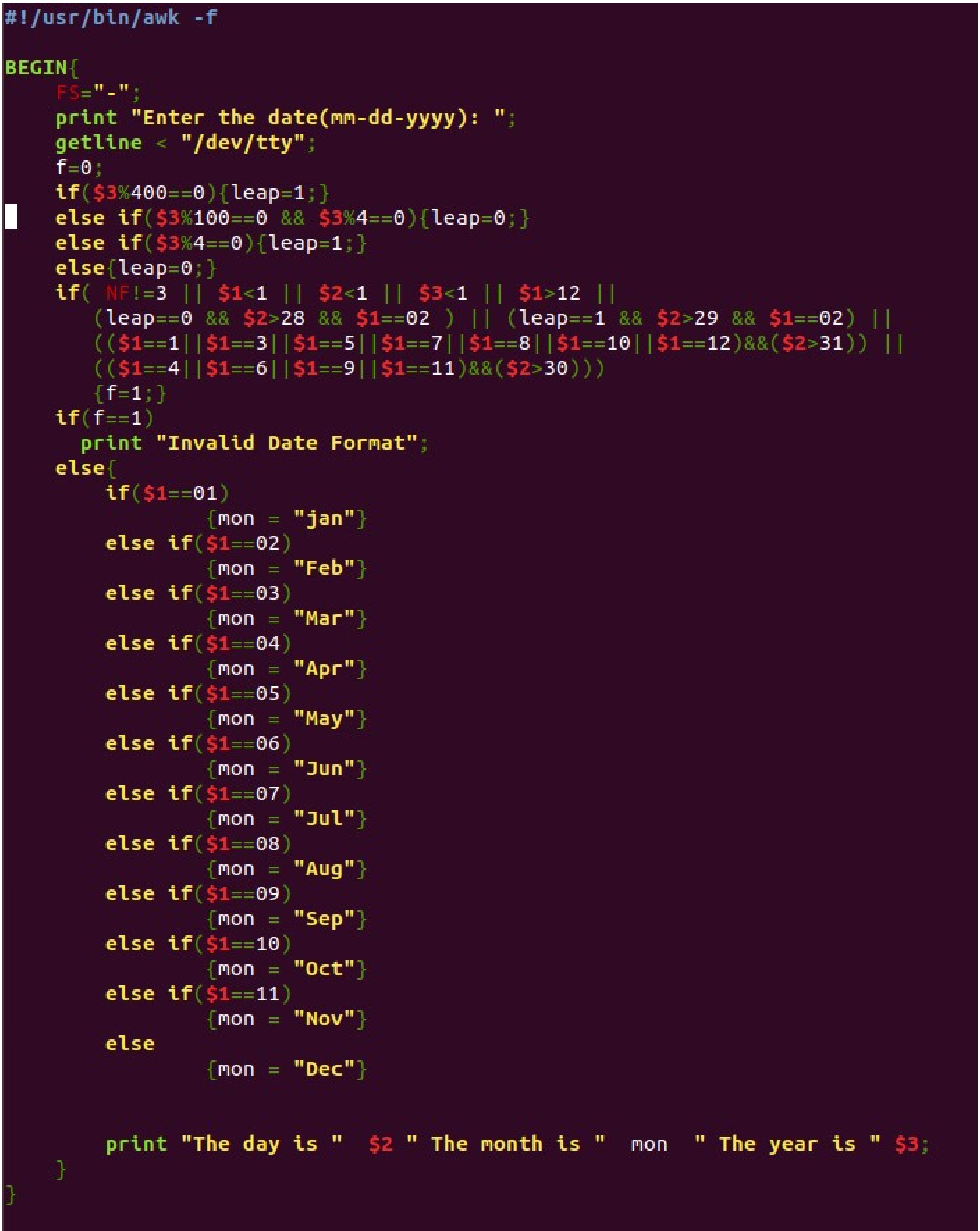


```
abhishek@abhishek:~/perl$ cat sample.txt
hello
apple apple
haai
yeeh
i have an apple
apple is a fruit
orange is not an apple
lam lm
laam
abhishek@abhishek:~/perl$ perl countword7.pl sample.txt
Number of words start with l and ends with m= 3
The words are: lam, lm, laam
abhishek@abhishek:~/perl$
```

Awk Scripting

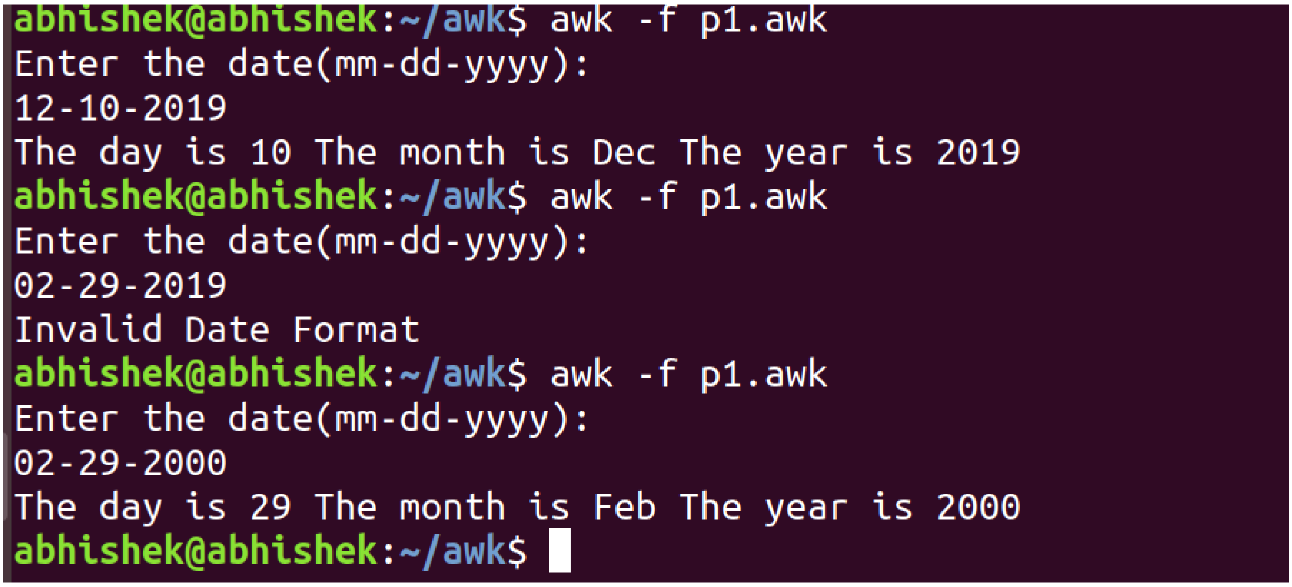
1. Write a awk script that accepts date argument in the form of mm-dd-yy and displays it in the following format. The script should check the validity of the argument and in the case of error, display a suitable message.

Script



```
#!/usr/bin/awk -f

BEGIN{
    FS="-";
    print "Enter the date(mm-dd-yyyy): ";
    getline < "/dev/tty";
    f=0;
    if($3%400==0){leap=1;}
    else if($3%100==0 && $3%4==0){leap=0;}
    else if($3%4==0){leap=1;}
    else{leap=0;}
    if( NF!=3 || $1<1 || $2<1 || $3<1 || $1>12 ||
       (leap==0 && $2>28 && $1==02 ) || (leap==1 && $2>29 && $1==02) ||
       (($1==1||$1==3||$1==5||$1==7||$1==8||$1==10||$1==12)&&($2>31)) ||
       (($1==4||$1==6||$1==9||$1==11)&&($2>30)))
       {f=1;}
    if(f==1)
      print "Invalid Date Format";
    else{
        if($1==01)
                {mon = "jan"}
        else if($1==02)
                {mon = "Feb"}
        else if($1==03)
                {mon = "Mar"}
        else if($1==04)
                {mon = "Apr"}
        else if($1==05)
                {mon = "May"}
        else if($1==06)
                {mon = "Jun"}
        else if($1==07)
                {mon = "Jul"}
        else if($1==08)
                {mon = "Aug"}
        else if($1==09)
                {mon = "Sep"}
        else if($1==10)
                {mon = "Oct"}
        else if($1==11)
                {mon = "Nov"}
        else
                {mon = "Dec"}


        print "The day is "  $2 " The month is "  mon  " The year is " $3;
    }
}
```

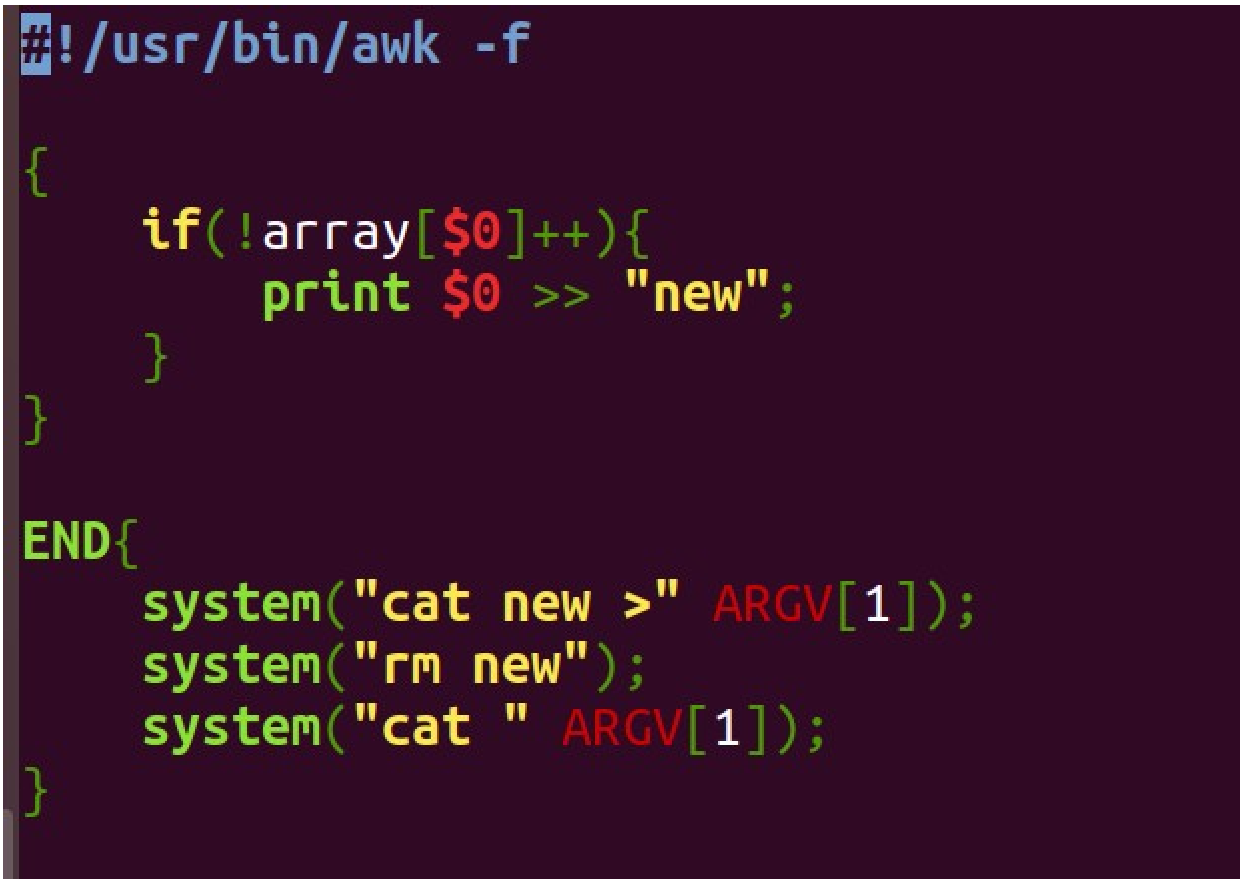
Output



```
abhishek@abhishek:~/awk$ awk -f p1.awk
Enter the date(mm-dd-yyyy):
12-10-2019
The day is 10 The month is Dec The year is 2019
abhishek@abhishek:~/awk$ awk -f p1.awk
Enter the date(mm-dd-yyyy):
02-29-2019
Invalid Date Format
abhishek@abhishek:~/awk$ awk -f p1.awk
Enter the date(mm-dd-yyyy):
02-29-2000
The day is 29 The month is Feb The year is 2000
abhishek@abhishek:~/awk$ 
```

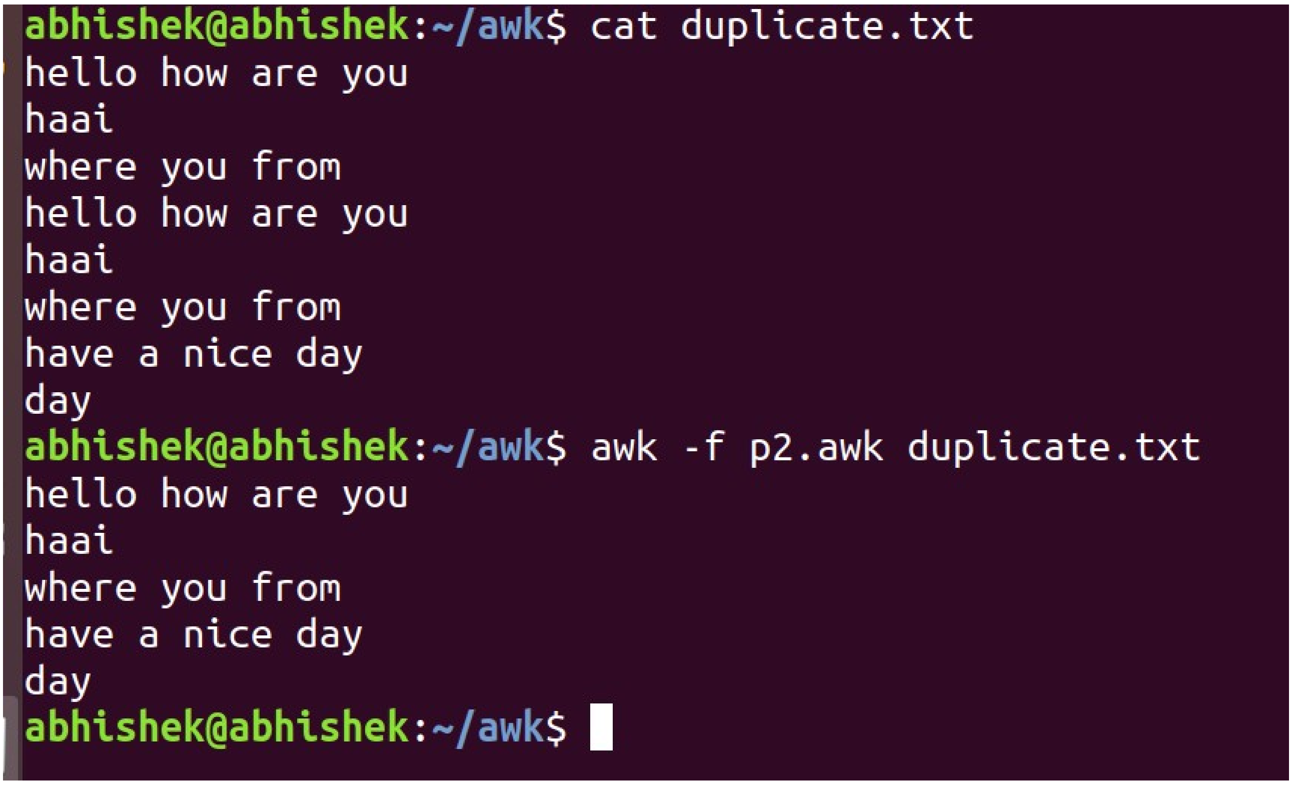
2) Write an awk script to delete duplicated line from a text file. The order of the original lines must remain unchanged

Script



```
#!/usr/bin/awk -f

{
    if(!array[$0]++){
        print $0 >> "new";
    }
}

END{
    system("cat new >" ARGV[1]);
    system("rm new");
    system("cat " ARGV[1]);
}
```

Output

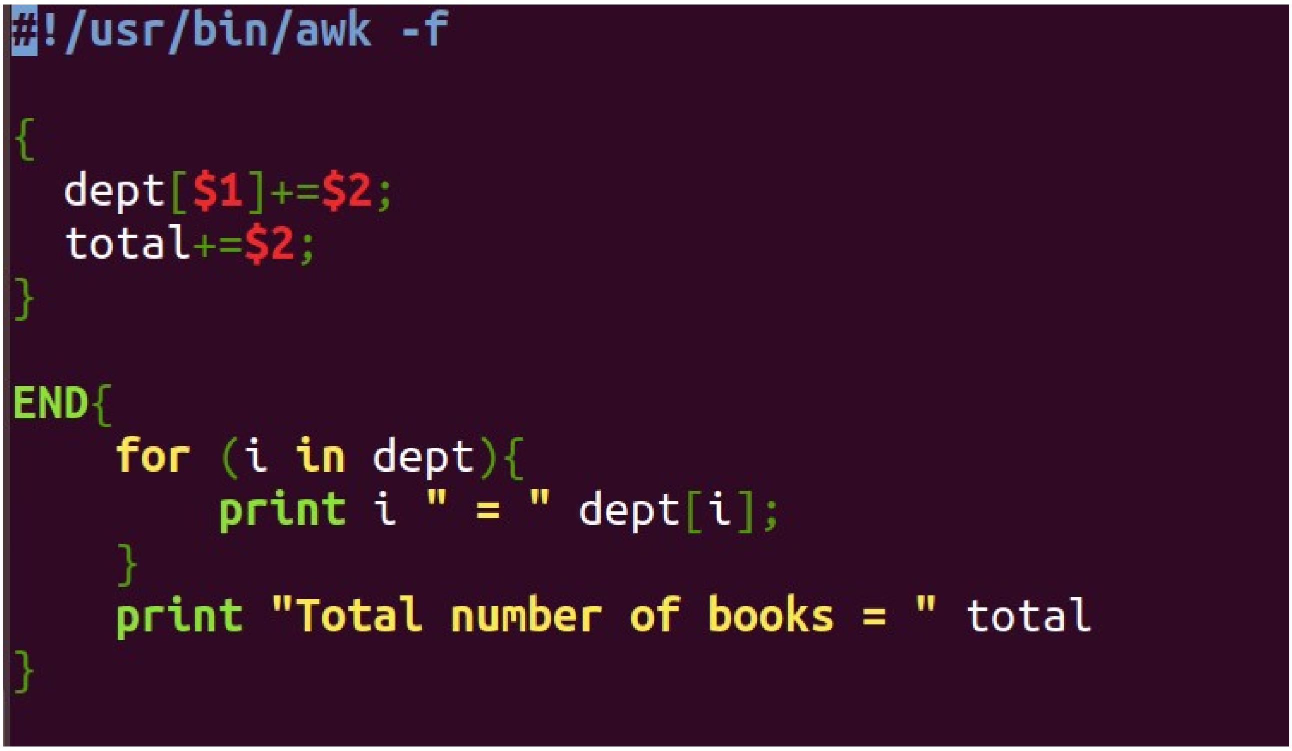


```
abhishek@abhishek:~/awk$ cat duplicate.txt
hello how are you
haai
where you from
hello how are you
haai
where you from
have a nice day
day
abhishek@abhishek:~/awk$ awk -f p2.awk duplicate.txt
hello how are you
haai
where you from
have a nice day
day
abhishek@abhishek:~/awk$ 
```

3) Write an awk script to find out total number of books sold in each discipline as well as total book sold based on the given table

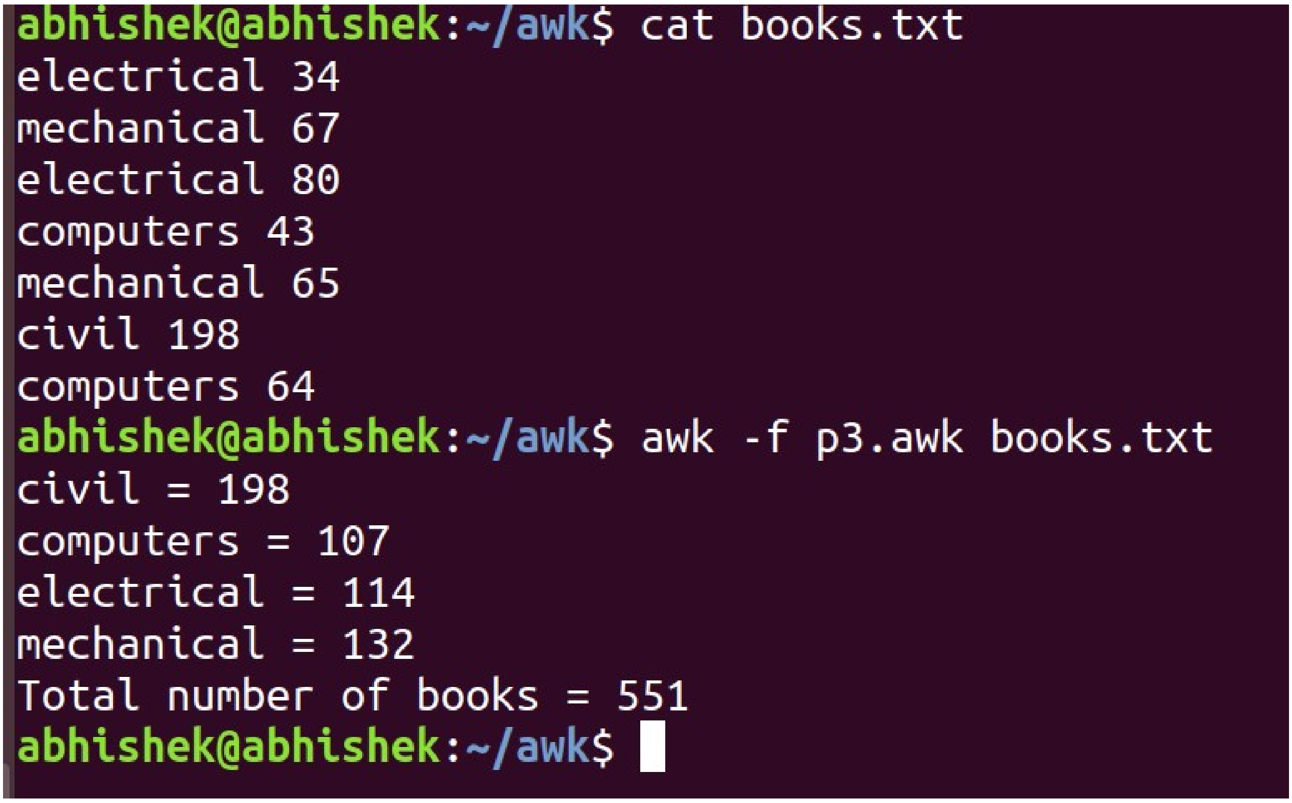
electrical	34
mechanical	67
electrical	80
computers	43
mechanical	65
civil	198
computers	64

Script



```
#!/usr/bin/awk -f

{
  dept[$1]+=$2;
  total+=$2;
}

END{
    for (i in dept){
        print i " = " dept[i];
    }
    print "Total number of books = " total
}
```

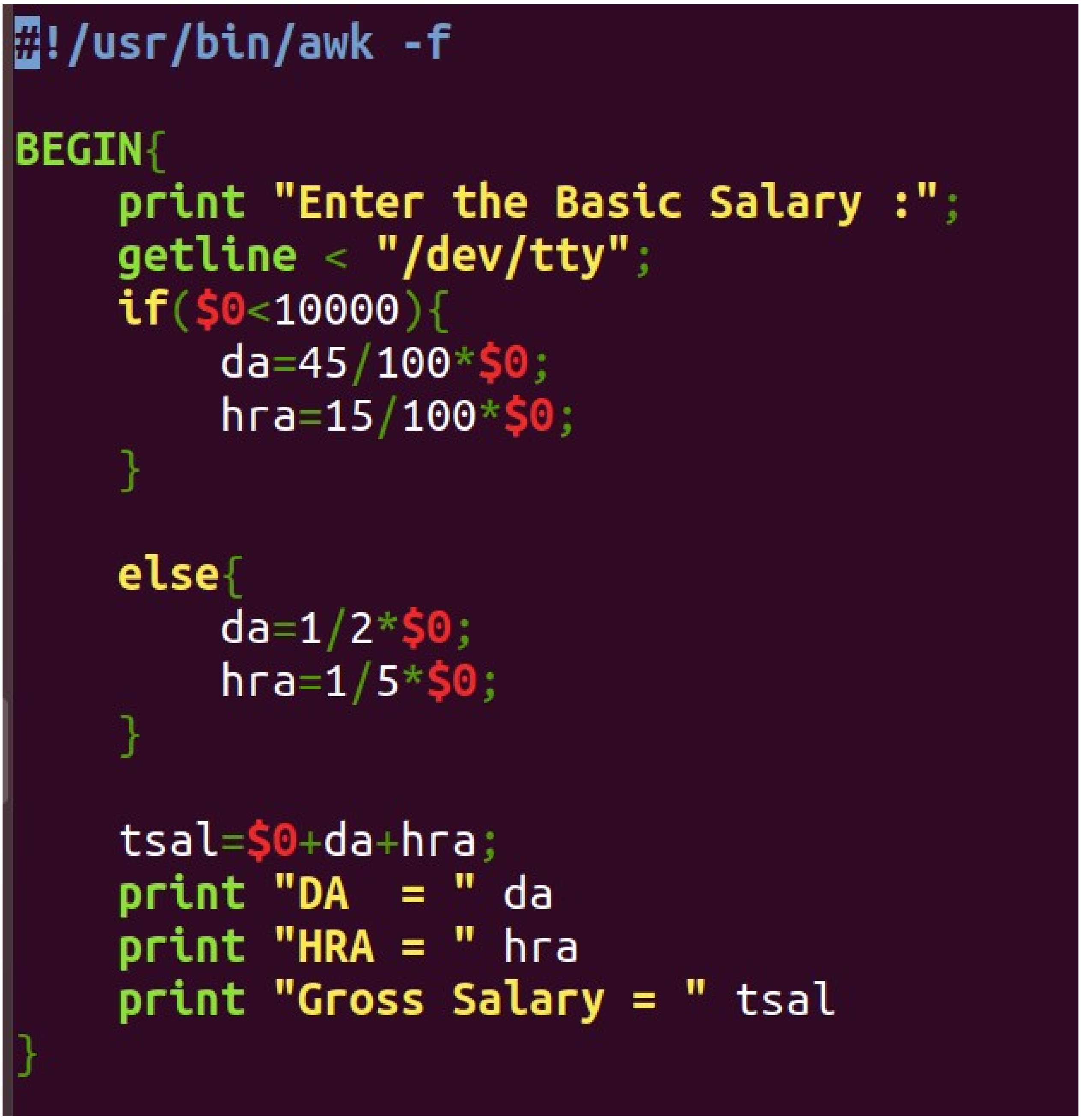
Output



```
abhishek@abhishek:~/awk$ cat books.txt
electrical 34
mechanical 67
electrical 80
computers 43
mechanical 65
civil 198
computers 64
abhishek@abhishek:~/awk$ awk -f p3.awk books.txt
civil = 198
computers = 107
electrical = 114
mechanical = 132
Total number of books = 551
abhishek@abhishek:~/awk$ 
```

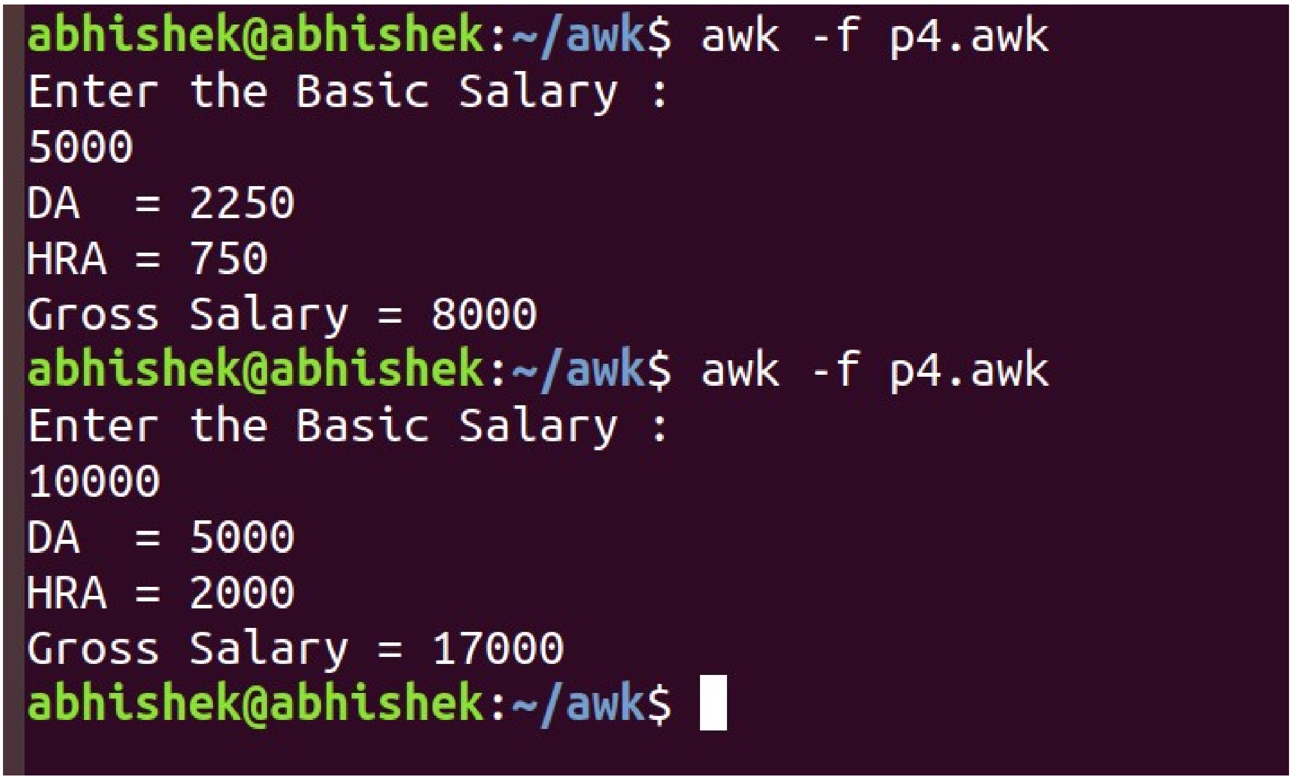
4) Write an awk script to compute gross salary of an employee accordingly to rule given below : If basic salary < 10000 then DA = 45% of the basic and HRA =15% of basic If basic salary >= 10000 then DA =50% of the basic and HRA =20% of basic.

Script



```
#!/usr/bin/awk -f

BEGIN{
    print "Enter the Basic Salary :";
    getline < "/dev/tty";
    if($0<10000){
        da=45/100*$0;
        hra=15/100*$0;
    }

    else{
        da=1/2*$0;
        hra=1/5*$0;
    }

    tsal=$0+da+hra;
    print "DA  = " da
    print "HRA = " hra
    print "Gross Salary = " tsal
}
```

Output



```
abhishek@abhishek:~/awk$ awk -f p4.awk
Enter the Basic Salary :
5000
DA  = 2250
HRA = 750
Gross Salary = 8000
abhishek@abhishek:~/awk$ awk -f p4.awk
Enter the Basic Salary :
10000
DA  = 5000
HRA = 2000
Gross Salary = 17000
abhishek@abhishek:~/awk$ 
```