ICS 103 (072)

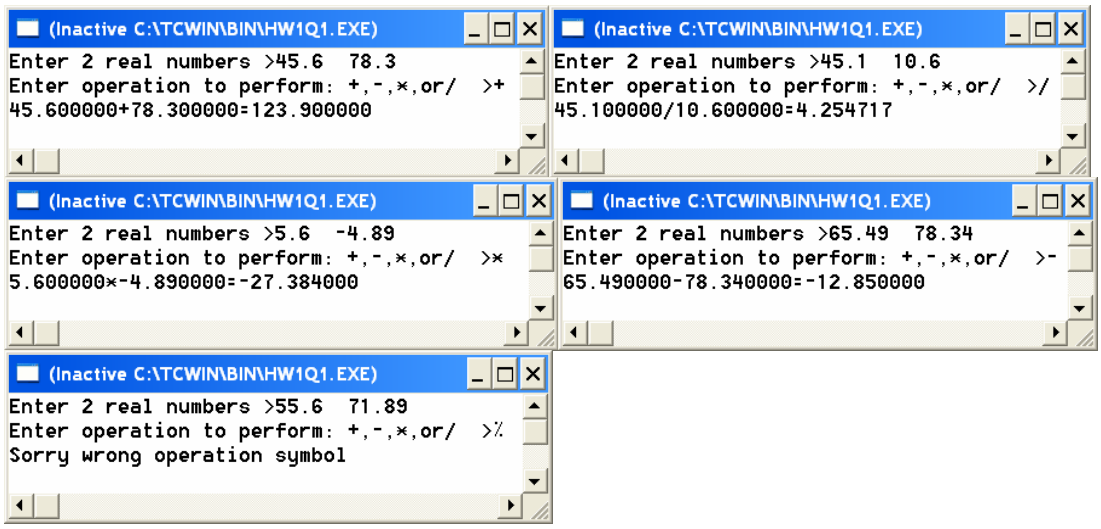
HW1

Due Date: **Friday March 21, 2008**

Question 1: (35 points)

Write a program that uses the switch statement to select the operation between two real numbers. You program will ask the user to enter two real numbers, then it ask him to enter the symbol of the operation to perform between the numbers (+,-,*,/). After that the program performs the right operation and displays the result as shown in the sample runs. Your program should handle the case of wrong operation symbol.

Note: call the function getchar() after reading the 2 real numbers so that the reading of the symbol is done correctly.

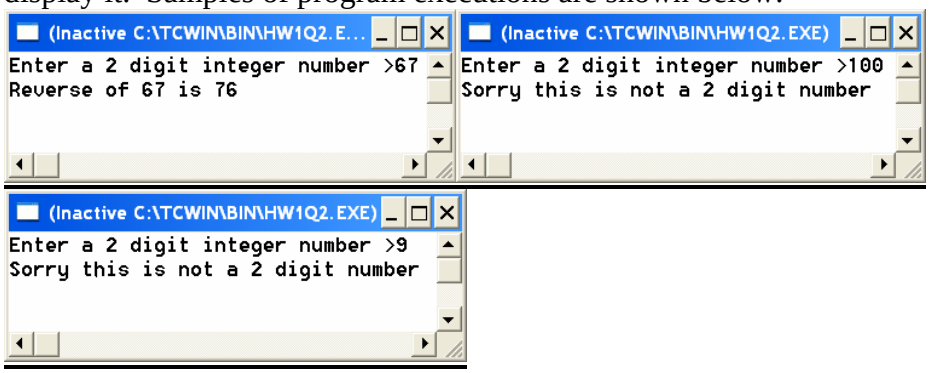



```
#include <stdio.h>
int main() {
double n1,n2,result;
char op;
int correct=1;
printf("Enter 2 real numbers >");
scanf("%lf%lf",&n1,&n2);
getchar();
printf("Enter operation to perform: +,-,*,or/ >");
scanf("%c",&op);
switch(op) {
 case '+':
            result=n1+n2;
            break;
 case '-':
```

```
            result=n1-n2;
            break;
case '*':
           result=n1*n2;
            break;
case '/':
            result=n1/n2;
            break;
default :
           printf("Sorry wrong operation symbol");
       correct=0;
}
if(correct)
printf("%f%c%f=%f",n1,op,n2,result);
return 0;
}
```

Question 2: (30 points)

Write a program that reads a positive integer with 2 digits (from 10 to 99). Your program should check for the correct range. After reading the number, it will reverse it and display it. Samples of program executions are shown below.




```
#include <stdio.h>
int main() {
int number,number2,ones, tens,reverse;
printf("Enter a 2 digit integer number >");
scanf("%d",&number);
if(number > 99 || number < 10)
  printf("Sorry this is not a 2 digit number");
else {
  ones=number%10;
  tens=number/10;
  reverse=ones*10+tens;
  printf("Reverse of %d is %d",number,reverse);
}
 return 0;
 }
```

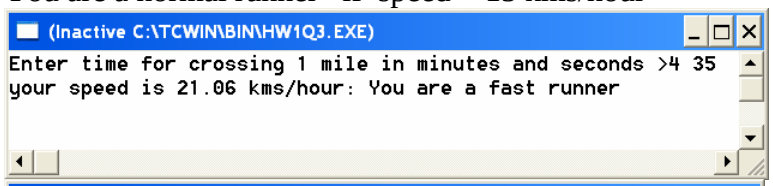
Question 3: (35 points)

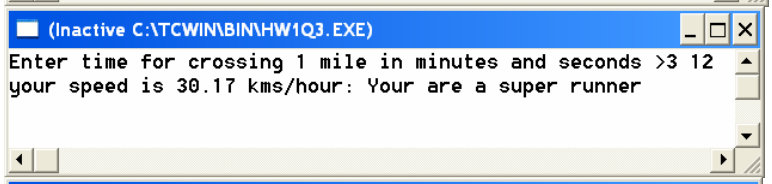
Write a program that asks the user about the time he took to cross 1 mile. The time will be input in minutes and seconds as integer numbers. Your program should check the correctness of input (0<= minutes, seconds <60). Then your program will display the user speed in kms/hour with one of the following messages.

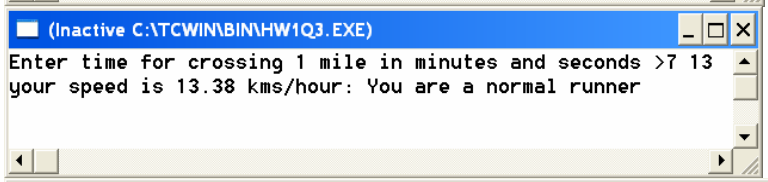
You are a super runner if speed >= 30 kms/hour

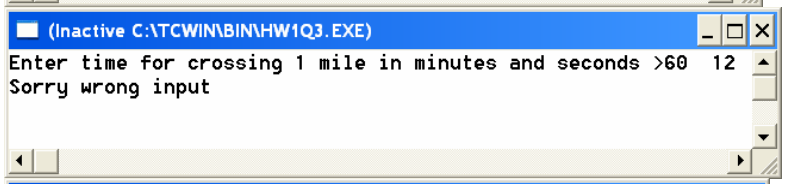
You are a fast runner if 15 kms/hour <= speed < 30 kms/hour

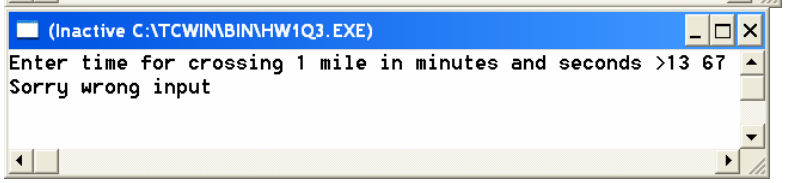
You are a normal runner if speed < 15 kms/hour












```
#include <stdio.h>
#define KMS_PER_MILE  1.609
int main() {
double speed,time;
int minutes, seconds;
printf("Enter time for crossing 1 mile in minutes and seconds >");
scanf("%d%d",&minutes,&seconds);
if(minutes <0 ||minutes >59 ||seconds < 0 || seconds >59)
  printf("Sorry wrong input");
else {
  time=(double)minutes/60+(double)seconds/3600;
  speed= KMS_PER_MILE/time;
  printf("your speed is %.2f kms/hour",speed);
  if(speed >= 30)
```

```
   printf(": Your are a super runner");
  else if (speed >= 15)
   printf(": You are a fast runner");
  else
   printf (": You are a normal runner");
}
 return 0;
}
```

Instructions:

- Change your WebCT password if you have not done so. This is your responsibility. Some cheating cases involved students getting to accounts of other students without their knowledge.

-You need to write 3 files quest1.cpp, quest2.cpp, and quest3.cpp (the files you save from the turbo compiler)

-upload the files one by one using the "upload file" button of webct.

- submit it through WebCT by clicking "submit assignment" option of webCT.

This should be no later than **Friday March 21, 2008 at midnight.**

- No group work is allowed. The homework solution has to be your own work. any cheating will lead to severe consequences.