ISTANBUL AYDIN UNIVERSITY

Name, Surname :
Number :
Course Code : COM117
Course Name : Computer Programming I
Exam : ◌ Quiz ● Midterm ◌ Final
Date :19.11.2013

Please make sure to write your name and student number on each paper that you have used

Question Number	1	2	3	**4**	**Total**
Mark					

Note: Exam duration is 60 minutes only.

Questions

1-(30p) It contains multiple logical and syntax errors. Fix the errors. (It is not necessary to rewrite the entire code { simply indicate your modications on the original code.)

```
 /* Average.c
* =========
* This program scans in the scores of 100 students, some
undergraduate,
* some graduate. The average grade achieved by each group,
accurate
* to three digits to the right of the decimal point, is
printed. */
#include <stdio.h>
int main()
{
int i; /* loop counter */
int type, score; /* inputs */
int undergradTotal; /* sum of all scores of undergraduates
*/
int gradTotal; /* sum of all scores of graduate students */
int undergradCount; /* number of undergraduates */
int gradCount; /* number of graduate students */
for (i = 0; i < 100; ++i); {
/* obtain inputs */
printf("Enter student type (1 for undergrad, any other
number for grad): ");
scanf("%d", type);
printf("Enter the students score: ");
scanf("%d", score);
/* update the appropriate total/counter combination */
if (type = 1); {
undergradTotal += score;
++undergradCount;
} else {
gradTotal += score;
++gradCount;
}
}
/* produce output */
if (undergradCount > 0){
printf("Undergraduate Average: %.3f\n",
(double)undergradTotal / 100);}
if (gradCount > 0){
printf("Graduate Average: %.3f\n",(double) gradTotal /
100);}
return 0;
}
```

2-(50p) Calculate the value of π from the infinite series

$$\pi = 4 - \frac{4}{3} + \frac{4}{5} - \frac{4}{7} + \frac{4}{9} - \frac{4}{11} + \cdots$$

Print a table that shows the value of π approximated by one term of this series, by two terms, by three terms, and so on.

Output:

```
Accuracy set at: 40
term              pi
1              4.000000
2              2.666667
3              3.466667
4              2.895238
5              3.339683
6              2.976046
7              3.283738
8              3.017072
...
...
...
40             3.116597
```

3-(50p) *(Hollow Square of Asterisks)* Write a program that reads in the side of a square and then prints that square out of asterisks. Your program should work for squares of all side sizes between 1 and 20.so that itprints a hollow square. For example, if your program reads a size of 5, it should print

```
*****
*   *
*   *
*   *
*****
```

4-(10p) Draw the flowchart of factorial

Yrd.Doç.Dr. Oğuz Ata