Computer Programming

Quiz1

Apr. 14, 2023

Problem 1 (pr1.c)

- Write a program that calculates the price of an amusement park pass. Entrance fees are determined under the following conditions. The current time and the user's age are input, and the fee to be paid is displayed. Time uses 24-hour units. That is, 18:00 means 6:00 pm.

	Adult	Kid (3-12 years old) Adults 65+
Free pass (before 5pm)	34,000	25,000
Night pass (after 5pm)	10,000	

Problem 1 (pr1.c)

- **Program output**

```
[ohyong@cse Quiz1_s456]$ vi pr1.c
[ohyong@cse Quiz1_s456]$ gcc pr1.c -o pr1
[ohyong@cse Quiz1_s456]$ ./pr1
Enter current time and age (time, age): 14 20
The fee is 34000.
```

```
[ohyong@cse Quiz1_s456]$ ./pr1
Enter current time and age (time, age): 10 10
The fee is 25000.
```

```
[ohyong@cse Quiz1_s456]$ ./pr1
Enter current time and age (time, age): 10 72
The fee is 25000.
```

```
[ohyong@cse Quiz1_s456]$ ./pr1
Enter current time and age (time, age): 18 21
The fee is 10000.
```

Problem 2 (pr2.c)

- Write a program that *reverses* the number of integer digits less than one billion entered by the user. For example, if the user enters 20230414, the output should be 41403202.

Problem 2 (pr2.c)

- **Program output**

```
[ohyong@cse Quiz1_s456]$ vi pr2.c
[ohyong@cse Quiz1_s456]$ gcc pr2.c -o pr2
[ohyong@cse Quiz1_s456]$ ./pr2
Enter an integer: 20230414
41403202
```

```
[ohyong@cse Quiz1_s456]$ ./pr2
Enter an integer: 12345
54321
```

```
[ohyong@cse Quiz1_s456]$ ./pr2
Enter an integer: 1230
0321
```

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Problem 3 (pr3.c)

- To determine if a number is divisible by 3, we can add up each digit of the number to find its sum. If the original number is divisible by 3, then this sum is also divisible by 3. This process can be repeated until a single digit sum is reached. If this single digit sum is equal to 3, 6, or 9, then the original number is divisible by 3. For example,

    $13542 \rightarrow 1+3+5+4+2 = 15$

    $15 \quad \rightarrow 1 + 5 = 6$ (divisible by 3)

- Write a program to read in an integer from the user and determine if it is divisible by 3 using the above rule.

Problem 3 (pr3.c)

- **Program output**

```
[ohyong@cse Quiz1_s456]$ vi pr3.c
[ohyong@cse Quiz1_s456]$ gcc pr3.c -o pr3
[ohyong@cse Quiz1_s456]$ ./pr3
Enter n : 13542
The number 13542 is divisible by 3
```

```
[ohyong@cse Quiz1_s456]$ ./pr3
Enter n : 123456789
The number 123456789 is divisible by 3
```

```
[ohyong@cse Quiz1_s456]$ ./pr3
Enter n : 20230414
The number 20230414 is not divisible by 3
```

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Submission

- **Submit to CSE server**

  At the end of the Quiz1, submit your C source files by typing

  ~gs1401/bin/submit Quiz1_s456 pr1.c pr2.c pr3.c   // due - 4:00 pm

  You may check that you have submitted your source code correctly by typing

  ~gs1401/bin/submit -check