

COMP 248 EE – Test 2

Instructions:

Date: October 14th, 2011

Time: 17:45 – 18:15 (30 minutes)

Only ENCS-approved calculators (with the ENCS sticker) are allowed.

No other electronic devices (including cell phones) are allowed.

No books, papers or extra notes are allowed.

Answer directly on this questionnaire.

Identification:

Last Name: _____

First Name : _____

Student ID : _____

Signature: _____

Marking scheme:

TOTAL:	_____/100
--------	-----------

Question (100pts) Write a complete program to evaluate a hand of 3 cards. Your program should:

1. Ask the user for 3 integers and 3 strings. The integers will represent the values of the cards, and the strings will represent their suits.
 - You must check that the integers entered by the user are valid. If they are not between 1 and 13 (1=ace, 2=2, ..., 11=jack, 12=queen, 13=king), you must display an error message and quit the program.
 - You can assume that the strings will be valid. You are guaranteed that the user will enter the strings "hearts" (♥), "spades" (♠), "diamonds" (♦) or "clubs" (♣).
2. Use a switch statement, to display on the screen the first card only in plain English. This means that the values 2 to 10 can be written in numeric form, but values 1, 11, 12 and 13 must be written in alphabetic form (1="ace", 11="jack", 12="queen", 13="king"). For example if the user enters 11 for the value and "hearts" for the suit, you must display "jack of hearts".
3. Use if statements, to display on the screen the type of hand that these 3 cards compose. The possible types of hand are:
 - a) if all 3 cards have the same value (eg. 2♠ 2♣ 2♥) then you display "TRIO"
 - b) if only 2 cards have the same value (eg. 5♥ 6♠ 6♦) then you display "PAIR"
 - c) if all 3 cards are of the same suit (eg. 3♥ 7♥ 13♥) then you display "FLUSH"
 - d) if all 3 cards are in sequence, but with a different suit (eg. 9♥ 10♠ 11♦) then you display "STRAIGHT". (see hint#2 below)
 - e) if all 3 cards are in sequence and of the same suit (eg. 9♦ 10♦ 11♦) then you display "STRAIGHT FLUSH". (see hint#2 below)
 - f) otherwise, you display "NOTHING"

Note: You need to write a complete program, but no comments are necessary.

Hints :

1. Do not be overwhelmed by the problem. Write the program one step at a time. Partial marks will be given for partial solutions.
2. You can assume that the cards will be entered in non-decreasing order of value (useful for points d) and e) above). For example, you can assume that a 2 (of any suit) will always be entered before a 3 (of any suit).

Here are some examples of how your program should behave:

```
Enter the value and suit of card 1: 0 diamonds
Enter the value and suit of card 2: 3 hearts
Enter the value and suit of card 3: 6 spades

Invalid value - bye bye
```

```
Enter the value and suit of card 1: 1 hearts
Enter the value and suit of card 2: 3 spades
Enter the value and suit of card 3: 15 diamonds

Invalid value - bye bye
```

```
Enter the value and suit of card 1: 2 clubs
Enter the value and suit of card 2: 6 diamonds
Enter the value and suit of card 3: 10 spades

Your first card is: queen of clubs
Your hand type is: NOTHING
```

```
Enter the value and suit of card 1: 5 hearts
Enter the value and suit of card 2: 5 clubs
Enter the value and suit of card 3: 5 diamonds

Your first card is: 5 of hearts
Your hand type is: TRIO
```

```
Enter the value and suit of card 1: 3 diamonds
Enter the value and suit of card 2: 11 diamonds
Enter the value and suit of card 3: 11 clubs

Your first card is: 3 of diamonds
Your hand type is: PAIR
```

```
Enter the value and suit of card 1: 2 spades
Enter the value and suit of card 2: 4 spades
Enter the value and suit of card 3: 9 spades

Your first card is: 2 of spades
Your hand type is: FLUSH
```

```
Enter the value and suit of card 1: 1 spades
Enter the value and suit of card 2: 2 hearts
Enter the value and suit of card 3: 3 diamonds

Your first card is: ace of spades
Your hand type is: STRAIGHT
```

```
Enter the value and suit of card 1: 11 hearts
Enter the value and suit of card 2: 12 hearts
Enter the value and suit of card 3: 13 hearts

Your first card is: jack of hearts
Your hand type is: STRAIGHT FLUSH
```

[illegible]

[illegible]

End of the Exam