10 Branching

Branching statements are used when making a choice between two or more sequences of instructions to execute. We'll practise using **if, if-else** and **if-elif-else** constructs in this section.

Create a new file and copy the code below into the file using the Spyder editor:

```
import random
i = random.randint( 1, 10 )
print 'i = ' + str( i )
if ( i < 5 ):
print 'i is less than 5'
else:
print 'i is not less than 5'

```

Run the program. What does it do?

→ Modify the program so that it prints out three different messages:

(a) if the randomly chosen number is less than 3,
(b) if the randomly chosen number is between 3 and 6, and
(c) if the randomly chosen number is greater than 6.

Save your modified program, test and debug it.

→ Modify the program so that it converts the random number to an integer between 0 and 100. Then print out one of three different messages, indicating whether the randomly chosen number is even or odd or zero. Save your modified program, test and debug it.

→ Create a new file and copy the code below into the file using the Spyder editor:

```
myword = raw_input( 'enter a word: ' )
print( 'you entered: ' + myword )
i = myword.find( 'A' )
print( 'i = ' + str( i ))

```

Run the program. What does it do?

→ Modify the program so that it prints out a message indicating if the word entered by the user contains the letter **A** or not. Save your modified program, test and debug it.

→ Modify the program so that it prints out a message indicating if the word entered by the user contains the letter **A**, a different message if the word contains the letter **E**, a different message if the word contains the letter **I**, a different message if the word contains the letter **O**, a different message if the word contains the letter **U**, or a different message indicating that the word contains none of those letters. Save your modified program, test and debug it.

→ Modify your program so that it prints one message if the word entered by the user contains any vowels or not. Save your modified program, test and debug it.

→ Go back to the last program you wrote in the previous section (where you select a random number in the range [0; 51]). Each card has associated with it a suit (diamonds, clubs, hearts or spades) and a value (2-10, Jack, Queen, King, Ace). Each number in the range [0; 51] can be associated with a suit as follows:

- [0; 12] are diamonds,
- [13; 25] are clubs,
- [26; 38] are hearts,
- [39; 51] are spades;

and with a value as follows:

- n%13 = [0; 8] → [2; 10]
- n%13 = 9 → Jack
- n%13 = 10 → Queen
- n%13 = 11 → King
- n%13 = 12 → Ace

Modify your program so that in addition to printing the random value [0; 51], you also print the associated suit and value of the card, e.g., 5 -> 7 of diamonds.