

## Session 4 Handout (Solutions Only)

**Q1:** Write a program to repeatedly ask the user to input the number of hours worked, and display the total pay, assuming that the rate for first 40 hours is 10/hour, and the rate for additional hours is 15/hour. The program should terminate whenever the user inputs done.

```
[2]: from session3 import calculateWage
    while True:
        userInput=input('Enter hours worked (or done): ')
        if userInput=='done':
            break
        hours=float(userInput)
        print('Pay is',calculateWage(hours))
```

```
Enter hours worked (or done): 38
Pay is 380.0
Enter hours worked (or done): 42
Pay is 430.0
Enter hours worked (or done): done
```

**(optional) Q2:** Rewrite the code in Q1 but do not use break.

```
[ ]: from session3 import calculateWage
    prompt='Enter hours worked (or done): '
    userInput=input(prompt)

    while userInput!='done':
        hours=float(userInput)
        print('Pay is',calculateWage(hours))
        userInput=input(prompt)
```

The following function uses try and except (see PY4E Chapter 3) for checking whether a certain value is convertible to a float.

```
[3]: def isNumber(x):
    try:
        float(x)
        return True
    except:
        return False

    print(isNumber(3))
    print(isNumber('3'))
    print(isNumber('three'))
```

```
True
True
False
```

**Q3:** Modify the first example of this handout so that if the user does not input done nor an integer, then the program prints Invalid input. and asks for another input. (Hint: first write an isInteger(x) function by modifying the above, then use an if statement to decide whether to convert the input to an integer, or display Invalid input.)

```
[4]: from session3 import orderQuantity
def isInteger(x):
    try:
        if int(x)==float(x):
            return True
        else:
            return False
    except:
        return False

while True:
    userInput=input('Enter inventory (or done): ')
    if userInput=='done':
        break
    if isInteger(userInput):
        inventory=int(userInput)
        print ('Order',orderQuantity(inventory),'units.')
    else:
        print('Invalid input.')
```

```
Enter inventory (or done): 2.5
Invalid input.
Enter inventory (or done): 30
Order 70 units.
Enter inventory (or done): thirty
Invalid input.
Enter inventory (or done): done
```

**Q4:** Modify the first example of the handout to use a for loop instead of a while loop, and limit the number of iterations to at most 5.

```
[3]: from session3 import orderQuantity
for i in range(5):
    userInput=input('Enter inventory (or done): ')
    if userInput=='done':
        break
    elif userInput=='skip':
        continue
    inventory=int(userInput)
    print ('Order',orderQuantity(inventory),'units.')
```

```
Enter inventory (or done): 43
Order 57 units.
Enter inventory (or done): 23
Order 77 units.
Enter inventory (or done): 11
Order 89 units.
Enter inventory (or done): 44
Order 56 units.
Enter inventory (or done): 33
Order 67 units.
```