COMP6010 Practical Week 4

1. Assume the following interest rates for bank deposit. Write a program to calculate the interest of a given deposit.

1) deposit $1-$1,000, interest rate: 1%

2) deposit $1,001-$10,000, interest rate: 1.5%

3) deposit $10,001-$50,000, interest rate: 1.8%

4) deposit $50,001-$100,000, interest rate: 2%

5) deposit $100,001 and above, interest rate: 2.5%

ANS (bankinterest.py):

```
deposit = int(input("Enter your deposit $"))
interest = 0
rate = 0
if deposit >= 1 and deposit <= 1000:
  rate = 0.01
elif deposit >= 1001 and deposit <= 10000:
  rate = 0.015
elif deposit >= 10001 and deposit <= 50000:
  rate = 0.018
elif deposit >= 50001 and deposit <= 100000:
  rate = 0.02
else:
  rate = 0.025
interest = "{:.2f}".format(deposit * rate) # using "{:.2f}".format()
to have 2 decimal places
print("Your interest rate is " + str(rate))
print("Your total intertest is $" + str(interest))
```

2. Refer to the tax rates below, write a program to calculate the tax of an income.

Australian income tax rates for 2020–21 and 2021–22 (residents)

Income thresholds	Rate	Tax payable on this income
$0 – $18,200	0%	Nil
$18,201 – $45,000	19%	19c for each $1 over $18,200
$45,001 – $120,000	32.5%	$5,092 plus 32.5c for each $1 over $45,000
$120,001 – $180,000	37%	$29,467 plus 37c for each $1 over $120,000
$180,001 and over	45%	$51,667 plus 45c for each $1 over $180,000

You can refer to ATO tax calculator webpage (here) for testing your program.

ANS:

```python
income = int(input('enter income: '))
tax = 0
if income >=0 and income <= 18200:
  tax = 0;
if income >= 18201:
  if income <= 45000:
      tax = tax + (income - 18200) * 0.19
  else:
    tax = tax + (45000 - 18200) * 0.19
if income >= 45001:
  if income <= 120000:
    tax = tax + (income - 45000) * 0.325
  else:
    tax = tax + (120000 - 45000) * 0.325
if income >= 120001:
  if income <= 180000:
    tax = tax + (income - 120000) * 0.37
  else:
    tax = tax + (180000 - 120000) * 0.37
if income >= 180001:
    tax = tax + (income - 180000) * 0.45
print(tax)
```

3. Write a while loop to calculate the sum of all odd numbers between 1 and 100 and the sum of all even numbers between 1 and 100, respectively. Write your solution using for loop too.

ANS:

1) while-loop (while-sum-odd-even.py)

```python
number = 1
sumOdd = 0
sumEven = 0
while (number <= 100):
  if number % 2 == 1:
    sumOdd += number
  else:
    sumEven += number
  number += 1
print("sum of odd = " + str(sumOdd))
print("sum of even = " + str(sumEven))
```

2) for-loop (for-sum-odd-even.py)

```python
sumOdd = 0
sumEven = 0
for number in range(1, 101):
  if number % 2 == 1:
    sumOdd += number
  else:
    sumEven += number
```

```
    number += 1
print("sum of odd = " + str(sumOdd))
print("sum of even = " + str(sumEven))
```