CS 003 - FUNDAMENTALS OF COMPUTER SCIENCE II (C++)

Lab9

SEP 26, 2023

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Problem 1.

- Define a class called **Wallet** that represents number of quarters, number of dimes, number of nickels, and number of pennies. You should write a main function.

```
class Wallet
{
private:
    int quarters;  // number of quarters
    int dimes;     // number of dimes
    int nickels;   // number of nickels
    int cents;     // number of cents
public:

    // complete the class with constructors and member functions

}
```

```
Enter the number of quarters for w1 : 3
Enter the number of dimes for w1    : 4
Enter the number of nickels for w1  : 2
Enter the number of quarters for w1 : 5

Enter the number of quarters for w2 : 4
Enter the number of dimes for w2    : 5
Enter the number of nickels for w2  : 3
Enter the number of quarters for w2 : 2

W1 :
     3 quarters
     4 dimess
     2 nickels
     5 cents
     ----> amount = $1.3

W2 :
     4 quarters
     5 dimess
     3 nickels
     2 cents
     ----> amount = $1.67

w2 amount is greater than w1

Create new Wallet w3 by adding w1 and w2

W3 :
     7 quarters
     9 dimess
     5 nickels
     7 cents
     ----> amount = $2.97
```

```
Enter the number of quarters for w1 : 10
Enter the number of dimes for w1    : 2
Enter the number of nickels for w1  : 5
Enter the number of quarters for w1 : 4

Enter the number of quarters for w2 : 10
Enter the number of dimes for w2    : 3
Enter the number of nickels for w2  : 3
Enter the number of quarters for w2 : 7

W1 :
     10 quarters
     2 dimess
     5 nickels
     4 cents
     ----> amount = $2.99

W2 :
     10 quarters
     3 dimess
     3 nickels
     7 cents
     ----> amount = $3.02

w2 amount is greater than w1

Create new Wallet w3 by adding w1 and w2

W3 :
     20 quarters
     5 dimess
     8 nickels
     11 cents
     ----> amount = $6.01
```

3

```
double x = 2.5678;
double y = 3.28153;
double z = 5.1194;

cout.setf(ios::fixed);
cout.setf(ios::showpoint);
cout.precision(3);
cout << "x : " << x << endl;

cout.precision(4);
cout << "y : " << y << endl;

cout.precision(1);
cout << "z : " << z << endl;
```

```
x : 2.568
y : 3.2815
z : 5.1
```

Problem 2.

- Create an object array by reading data from the file and print all students information in the ascending order of students' numbers.

data.txt

```
13
25 Alice
11 Peter
13 Hailey
7 Tommy
10 Oliver
20 Sandy
5 Esther
2 Cathy
9 Angel
19 Farrah
17 Ruth
22 Bob
12 Diana
```

```
Enter filename : data.txt
< Original Data >
----------------
25     Alice
11     Peter
13    Hailey
 7     Tommy
10    Oliver
20     Sandy
 5    Esther
 2     Cathy
 9     Angel
19    Farrah
17      Ruth
22       Bob
12     Diana

< Sorted Data >
----------------
 2     Cathy
 5    Esther
 7     Tommy
 9     Angel
10    Oliver
11     Peter
12     Diana
13    Hailey
17      Ruth
19    Farrah
20     Sandy
22       Bob
25     Alice
```



```
13
25 Alice
11 Peter
13 Hailey
7 Tommy
10 Oliver
20 Sandy
5 Esther
2 Cathy
9 Angel
19 Farrah
17 Ruth
22 Bob
12 Diana
```

25 Alice	11 Peter	13 Hailey	7 Tommy	10 Oliver	20 Sandy	5 Esther	2 Cathy	9 Angel	19 Farrah	17 Ruth	22 Bob	12 Diana

Sorting in ascending order

2 Cathy	5 Esther	7 Tommy	9 Angel	10 Oliver	11 Peter	12 Diana	13 Hailey	17 Ruth	19 Farrah	20 Sandy	22 Bob	25 Alice