



UNIVERSITI TEKNOLOGI MALAYSIA

FINAL EXAMINATION

SEMESTER I 2014/2015

SOLUTIONS

SUBJECT CODE : SCJ1013 / SCSJ1013
SUBJECT NAME : PROGRAMMING TECHNIQUE I
YEAR/COURSE : 1 (SCSJ / SCSV / SCSB / SCSR)
TIME : 2 HOURS AND 30 MINUTES
DATE :
VENUE :

1. (5 marks @ 0.5 each)

```

#include <iostream>
#include <fstream>          //(i)
using namespace std;

int main()
{
    ifstream inData;        //(ii)
    ofstream outFile;       //(iii)

    int score;
    int total = 0;

    inData.open("numbers.txt"); //(iv)
    outFile.open("tot_scores.txt"); //(v)

    while (!inData.eof())    //(vi)
    {
        inData >> score;    //(vii)
        total += score;
    }

    cout << "Total score is " << total << endl;
    outFile << total << endl;    //(viii)

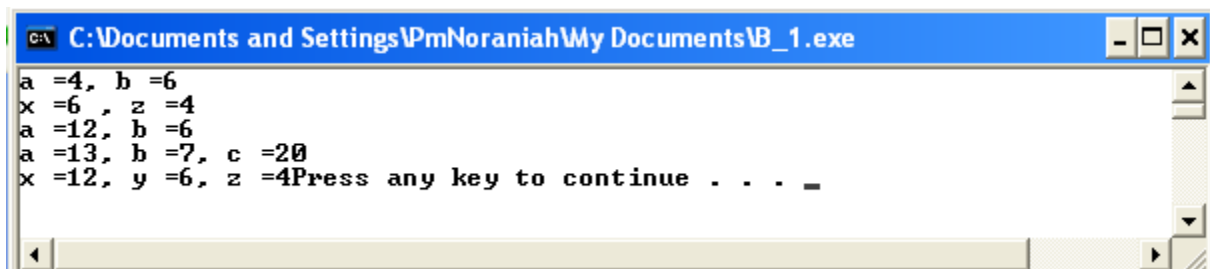
    inData.close();          //(ix)
    outFile.close();         //(x)

    cout << "Done!" << endl;

    return 0;
}

```

2. (6 marks @ 0.5 each)



```

C:\Documents and Settings\PmNoranah\My Documents\B_1.exe
a =4, b =6
x =6, z =4
a =12, b =6
a =13, b =7, c =20
x =12, y =6, z =4
Press any key to continue . . . _

```

3. (3 marks @ 0.5 each)

```

C:\Documents and Settings\PmNoraniah\My Documents\Prog3.exe
3 5 16
3 5 19
Press any key to continue . . .

```

4. (a) (5 marks)

```

float yardToMile (float yd, float ft) // 2m @ 0.5 each underlined
{
    float mi = ((yd * 3) + ft) / 5280; // 2m @ 0.5 each underlined

    return mi; // 1 m
}

```

(b) (1 marks)

```
float mile = yardToMile (8, 2); // 0.25m each
```

OR

```
float yard = 8, feet = 2, mile;
mile = yardToMile (yard, feet);
```

5.

a) (3 marks @ 0.5 each)

```

C:\Documents and Settings\PmNoraniah\My Documents\Prog5.exe
0 2 8
2 8 18
Press any key to continue . . .

```

b)

(5 marks)

```

void calculate(double a[][NCOL]) //1m
{
    double sum=0; //0.5m
    for (int i=0; i<NROW; ++i) //1m
    {
        for (int j=0; j<NCOL; ++j) //1m
            sum += a[i][j]; //1m
    }
    cout << "\nSqrt of sum: " << sqrt(sum) << endl; //0.5m
}

```

c) calculate(numbers); (1 mark)

6.

a) [2 marks]

```

void inputData(int a[])    // 0.75m @0.25m each
{
    for (int i=0; i<SIZE; i++){ //1m @ 0.25 each
        cout << "Enter number :" << endl;
        cin >> a[i];    // 0.25m
    }
}

```

b) [3.5 marks]

```

void compare(int a[],int b[]) //1m @ 0.25m each
{
    for (int i=0; i<SIZE; i++) //1m @ 0.25m each
    {
        if (a[i] != b[i]) //1m @ 0.25m each
            cout << "Not equal" << endl; //0.25m
        else
            cout << "Equal" << endl; //0.25m
    }
}

```

c) [5.5 marks]

```

int compute(int a[],int b[]) //1m @ 0.25m each
{
    int c[SIZE], // 0.25m
        sum=0; // 0.25m

    for (int i=0; i<SIZE; i++) //1m @ 0.25m each
        c[i] = a[i] * b[i]; //0.75m @ 0.25 each

    for (int i=0; i<SIZE; i++) //1m @ 0.25m each
        sum += c[i]; //0.75m @ 0.25 each

    return sum; //0.5m
}

```

7.

(a) . (5 marks)

```

struct Ward    //0.75m
{
    int    floor;    //0.25m each field
    char   gender;
};

struct Date    //0.75m
{
    int    day,      //0.25m each field
          month,
          year;
};

struct PatientRecord    //0.75m
{
    string    name;        //0.25m
    string    doctor;      //0.25m
    Ward      pWard;        //0.5m
    Date      admitDate;    //0.5m
};

```

(b) (2 marks @ 0.5 each)

```

PatientRecord pRec[50];
pRec[19].name = "Robert Kwok";
pRec[19].pWard.floor = 5;
pRec[19].pWard.gender = 'M';

```

(c)

i. (2 marks @ 0.5 each)

```

cin >> pRec[34].doctor;
cin >> pRec[34].admitDate.day;
cin >> pRec[34].admitDate.month;
cin >> pRec[34].admitDate.year;

```

ii. (3 marks)

```
int totalMale=0;    //0.25m
int totalFemale=0; //0.25m

for (int i=0; i<50; i++) //1m @ 0.25 each
{
    if (pRec[i].pWard.floor==2) //0.5m
    {
        if (pRec[i].pWard.gender=='F') //0.5m
            totalFemale++; //0.25m
        else totalMale++; //0.25m
    }
}
```

8.

(a) (1m)

```
enum CHOICE {ONE, TWO};
```

(b) (1m)

```
union U_TYPE
{
    char choice1;
    int  choice2;
};
```

9.

a.

i. (6 marks)

```

void readRecord(SalesRecord list[]) //1m
{
    for (int i=0; i<20; i++) //1m
    {
        cout << "Enter the id and name: ";
        cin >> list[i].id; //0.75m @ 0.25 each

        cin.ignore();
        cin.getline(list[i].name,30); //0.75m @ 0.25 each

        cout << "Enter the sales for the four quarters: ";
        for (int j=0; j<4; j++) //1m
            cin >> list[i].quarterlySales[j]; //1.5m @ 0.5 each

        cin.ignore();
    }
}

```

ii. (2 marks)

```

readRecord(salesRep);

```

b. (3 marks)

```

for (int i=0; i<20; i++) //1m
    getAnnualSale(salesRep[i].quarterlySales); //2m

```

c. (3 marks)

```

SalesRecord getSalesman(const SalesRecord list[], int id) //1m
{
    for (int i=0; i<20; i++) //1m

        if (list[i].id == id) //0.5m
            return list[i]; //0.5m
}

```