Pre-Assignment: Advanced Data Structures

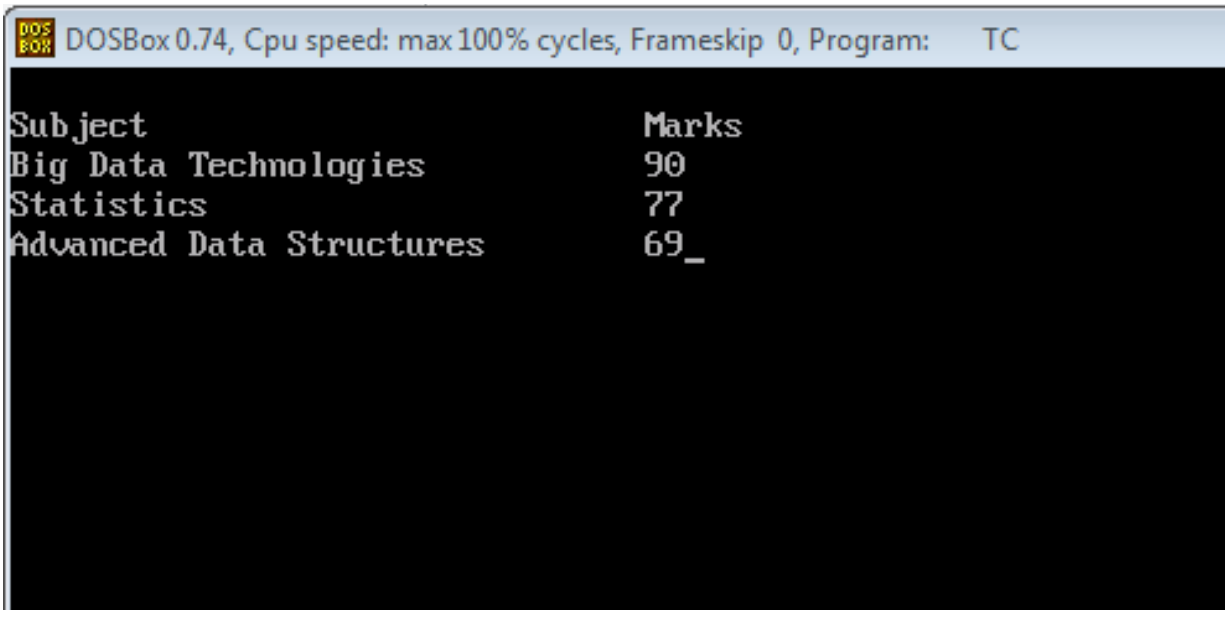
1. **Write a program to display the following output using a single cout statement.**

Subject	Marks
Big Data Technologies	90
Statistics	77
Advanced Data Structures	69

Sol:

```
#include<iostream.h>
#include<conio.h>
void main()
{
        clrscr();
        cout<<"\nSubject\t\t\t\tMarks\nBig Data
Technologies\t\t90\nStatistics\t\t\t77\nAdvanced Data Structures\t69";
        getch();
}
```

O/p:

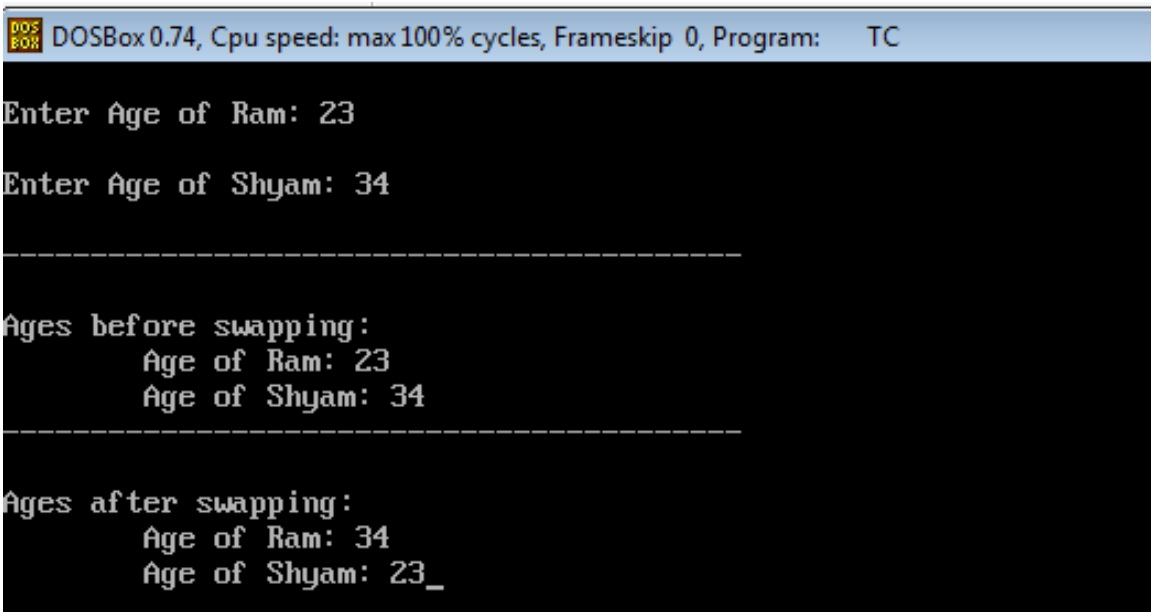


2. Write a program in c++ to swap value of two ages of Ram and Shyam without using third variable

Sol:

```
#include<iostream.h>
#include<conio.h>
void main()
{
        clrscr();
        int ram_age, shyam_age;
        cout<<"\nEnter Age of Ram: ";
        cin>>ram_age;
        cout<<"\nEnter Age of Shyam: ";
        cin>>shyam_age;
        cout<<"\n----------------------------------------";
        cout<<"\n\nAges before swapping:";
        cout<<"\n\tAge of Ram: "<<ram_age<<"\n\tAge of Shyam:
"<<shyam_age;
        ram_age = ram_age + shyam_age;
        shyam_age = ram_age - shyam_age;
        ram_age = ram_age - shyam_age;
        cout<<"\n----------------------------------------";
        cout<<"\n\nAges after swapping:";
        cout<<"\n\tAge of Ram: "<<ram_age<<"\n\tAge of Shyam:
"<<shyam_age;
        getch();
}
```

O/p:


DOSBox 0.74, Cpu speed: max 100% cycles, Frameskip 0, Program: TC
Enter Age of Ram: 23
Enter Age of Shyam: 34
Ages before swapping:
Age of Ram: 23
Age of Shyam: 34
Ages after swapping:
Age of Ram: 34
Age of Shyam: 23

3. **Write a program which accepts amount as integer and display total number of Notes of Rs. 100, 50, 20, 10, 5 and 1.**
   For example, when user enter a number, 175,
   The results would be like this...

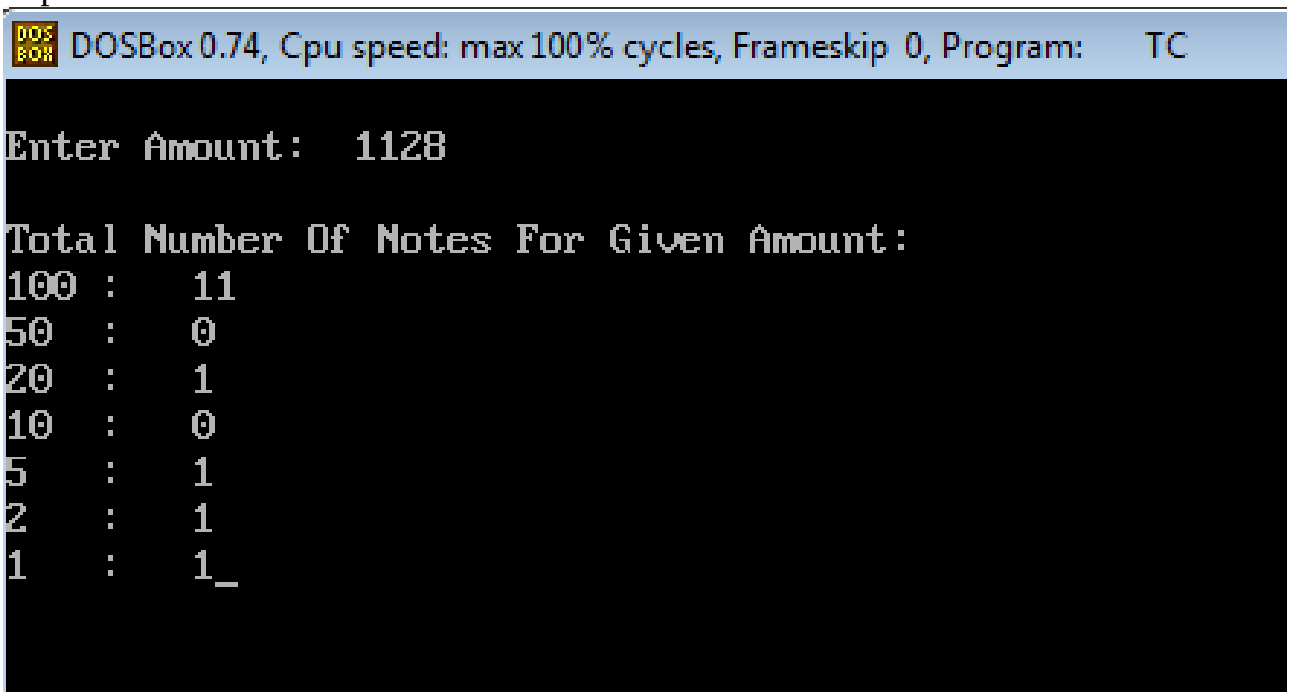
   100: 1
   50: 1
   20: 1
   10: 0
   5: 1
   1: 0

Sol:

```
#include <iostream.h>
#include<conio.h>
void main()
{
        int amt;
        int note_100, note_50, note_20, note_10, note_5, note_2, note_1;
        note_100 = note_50 = note_20 = note_10 = note_5 = note_2 = note_1 =
        0;
        clrscr();
        cout<<"\nEnter Amount:  ";
        cin>>amt;
        if(amt >= 100)
        {
                note_100 = amt/100;
                amt -= note_100 * 100;
        }
        if(amt >= 50)
        {
                note_50 = amt/50;
                amt -= note_50 * 50;
        }
        if(amt >= 20)
        {
                note_20 = amt/20;
                amt -= note_20 * 20;
        }
        if(amt >= 10)
```

```
        {
                note_10 = amt/10;
                amt -= note_10 * 10;
        }
        if(amt >= 5)
        {
                note_5 = amt/5;
                amt -= note_5 * 5;
        }
        if(amt >= 2)
        {
                note_2 = amt /2;
                amt -= note_2 * 2;
        }
        if(amt >= 1)
        {
                note_1 = amt;
        }
        cout<<"\nTotal Number Of Notes For Given Amount: ";
        cout<<"\n100 :\t"<<note_100;
        cout<<"\n50  :\t"<<note_50;
        cout<<"\n20  :\t"<<note_20;
        cout<<"\n10  :\t"<<note_10;
        cout<<"\n5   :\t"<<note_5;
        cout<<"\n2   :\t"<<note_2;
        cout<<"\n1   :\t"<<note_1;
        getch();
}
```

O/p:

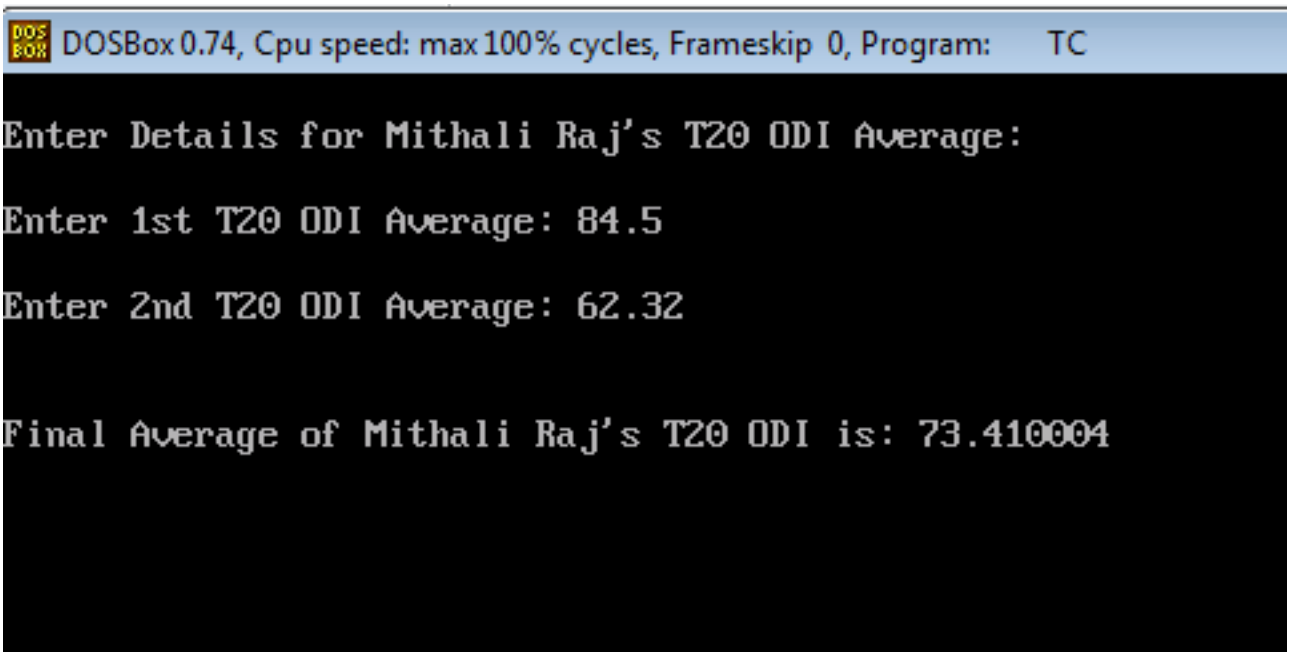

DOSBox 0.74, Cpu speed: max 100% cycles, Frameskip 0, Program: TC
Enter Amount: 1128
Total Number Of Notes For Given Amount:
100 : 11
50 : 0
20 : 1
10 : 0
5 : 1
2 : 1
1 : 1_

4. **Write a program which accept two T20 ODI'S averages of Mithali Raj and print their average**

Sol:

```
#include<iostream.h>
#include<conio.h>
void main()
{
        float odi_avg1, odi_avg2, final_avg;
        clrscr();
        cout<<"\nEnter Details for Mithali Raj's T20 ODI Average: ";
        cout<<"Enter 1st T20 ODI Average: ";
        cin>>odi_avg1;
        cout<<"Enter 2nd T20 ODI Average: ";
        cin>>odi_avg2;
        final_avg = (odi_avg1 + odi_avg2) / 2;
        cout<<"\n\nFinal Average of Mithali Raj's T20 ODI is: "<<final_avg;
        getch();
}
```

O/p:



5. **Create your account in github (https://github.com) and push the above programs to your git account.**

Sol:

https://github.com/akashborse9