WEEK1

P1:

```
#include<iostream>
using namespace std;
int main()
{
	int a,b;
	cout<<"Enter first number:";
	cin>>a;
	cout<<"Enter second number:";
	cin>>b;
	a=a+b;
	b=a-b;
	a=a-b;
	cout<<"After swapping two numbers";
	cout<<"First Number:"<<a;
	cout<<"Second Number:"<<b;
	return 0;
}
```

P2:

```
//smallest of 3 numbers
#include<iostream>
using namespace std;
int main()
{
	int a,b,c;
	cout<<"Enter three numbers:";
	cin>>a>>b>>c;
	if(a<b)
	{
```

```
        if(a<c)
            cout<<a<<"is smallest";
        else
            cout<<c<<"is smallest";
    }
    else
    {
        if(b<c)
            cout<<b<<"is smallest";
        else
            cout<<c<<"is smallest";
    }
    return 0;
}
```

P3:

```
#include<iostream>
using namespace std;
int main()
{
    int r,b,h;
    double carea,tarea;
    cout<<"Enter radius,base,height";
    cin>>r>>b>>h;
    carea=3.14*r*r;
    tarea=0.5*b*h;
    cout<<"Area of circle:"<<carea;
    cout<<"\nArea of triangle:"<<tarea;
    return 0;
}
```

P4:

```
#include<iostream>
using namespace std;
int main()
{
	int orgsecs,hrs,mins,secs;
	cout<<"Enter time in seconds";
	cin>>orgsecs;
	hrs=orgsecs/(60*60);
	mins=(orgsecs-hrs*60*60)/60;
	secs=orgsecs-(hrs*60*60)-(mins*60);
	cout<<hrs<<"hours "<<mins<<"mins "<<secs<<"seconds ";
	return 0;
}
```

P5:

```
#include<iostream>
using namespace std;
int main()
{
	int mm;
	float cm,inch,feet;
	cout<<"Enter the distance in mm:";
	cin>>mm;
	cm=mm/10;
	inch=cm/2.5;
	feet=inch/12;
	cout<<cm<<"cm "<<inch<<"inches "<<feet<<"feet ";
	return 0;
}
```

P6:

```
#include<iostream>
using namespace std;
int main()
{

	float ctemp,ftemp;
	cout<<"Enter  the temperature in fahrenheit:";
	cin>>ftemp;
	ctemp=(5.0/9)*(ftemp-32);
	cout<<"\nTemp in Celsius:";
	cout<<ctemp<<"\n";
	cout<<"Enter  the temperature in celsius:";
	cin>>ctemp;
	ftemp=((9*ctemp)/5.0)+32;
	cout<<"\nTemp in Fahrenheit:";
	cout<<ftemp;
	return 0;
}
```

P7:

```
#include <iostream>
#include <cmath>
using namespace std;

int main() {
double P, r, n, t, A;
cout<<"Enter the principal investment amount(P): ";
cin>>P;
cout<<"Enter the annual interest rate(r): ";
```

```
cin>>r;
cout<<"Enter the number of times interest is compounded per year(n): ";
cin>>n;
cout<<"Enter the time the money is invested for in years(t): ";
cin>>t;
A = P * pow((1 + r / n), n * t);
cout << "The future value of the investment/loan (A) is: " << A << endl;
return 0;
}
```

P8:

```
#include <iostream>
#include <iomanip>

using namespace std;

int main() {
    string name, regNumber, semester, year;
    double marks[5], total = 0.0, average;
    char grade;

    cout<<"Enter Student Name: ";
    cin>>name;

    cout<<"Enter Registration Number: ";
    cin>>regNumber;

    cout<<"Enter Year of Joining: ";
    cin>>year;

    cout<<"Enter Semester: ";
```

```
cin>>semester;

cout<<"Enter marks for 5 subjects (out of 100 each):\n";
string subjects[5] = {
    "Object Oriented Programming",
    "DBMS",
    "Research Methodology",
    "Computational Mathematics",
    "Web Technologies"
};

for(int i = 0; i < 5; ++i) {
    cout<<subjects[i]<<": ";
    cin>>marks[i];
    total+=marks[i];
}

average=total/5;

if(average>=90) grade='A';
else if(average>=80) grade='B';
else if(average>=61) grade='C';
else if(average>=51) grade='D';
else if(average>=41) grade='E';
else grade='F';

cout<<"\nScore Card for Student: "<<name<<endl;
cout<<"Registration Number: "<<regNumber<<endl;
cout<<"Semester: "<<semester<<endl;
cout<<"Year: "<<year<<endl;
cout<<"Grade Assigned: "<<grade<<endl;
```

```
	cout<<"--------------------------------------------------------------------------------"<<endl;
	cout<<"Subject Name\t\tMarks Scored (out of 100)"<<endl;

	for(int i = 0; i < 5; ++i) {
		cout<<setw(25)<<left<<subjects[i]<<setw(5)<<marks[i]<<endl;
	}

	cout<<"Total: "<<total<<endl;
	cout<<fixed<<setprecision(1);
	cout<<"Average: "<<average<<endl;
	cout<<"Grade: "<<grade<<endl;

	return 0;
}
```

Bonus:

```
#include <iostream>
using namespace std;

int main() {
	string number;
	cout<<"Enter a 3-digit number:";
	cin>>number;
	if(number.length()!=3) {
		cout<<"Invalid input. Please enter a 3-digit number."<<endl;
		return 1;
	}
	char a=number[0];
	char b=number[1];
	char c=number[2];
	cout<<a<<b<<c<<endl;
```

```
    cout<<a<<c<<b<<endl;
    cout<<b<<a<<c<<endl;
    cout<<b<<c<<a<<endl;
    cout<<c<<a<<b<<endl;
    cout<<c<<b<<a<<endl;
    return 0;
}
```

WEEK2