Q. Efficiency of Car

Create a class called Car with the following private data members / member variables, startMiles, endMiles and litres (All of type float)
startMiles corresponds to the starting odometer reading, endMiles corresponds to the ending odometer reading and liters correspond to the amount of diesel consumed or used between the 2 readings.
Include the following public member functions or methods
initializeData() that accepts 3 arguments and its return type is void. This function is used to set the values for startMiles, endMiles and litres. The arguments are passed to this function in the same order.
getstartMiles()---to return startMiles
getEndMiles()---to return endMiles
getLitres()---to return litres
calculateMPL()---to calculate and return the miles traveled per litre.
isEconomycar()---returns true if the MPL is greater than 18 and false otherwise.
In the main method, create an objectnamed "obj" of type Car and invoke the corresponding methods.
Input Format:
start miles End Miles Litres
Output Format:
LINE 1:- call class method starting miles( )
LINE 2:- call class method ending miles( )
LINE 3:- call class method per litre( )
LINE 4:- call class method litres ( )
LINE 5 :- call class method car economical( )
Refer Sample TestCases.
Programming Language need to be used:C++

Source Code

```
#include <iostream>
using namespace std;
class Car
{
  public:
  float startMiles,endMiles,litres;
  void initializeData(float s,float e,float l)
  {
    cin>>startMiles>>endMiles>>litres;
  }
  float getstartMiles()
  {
    return startMiles;
  }
  float getEndMiles()
  {
    return endMiles;
  }
  float getLitres()
  {
    return litres;
  }
  double calculateMPL()
  {
    return ((endMiles-startMiles)/litres);
  }
  string isEconomycar()
  {
    if(calculateMPL()>18)
      return "true";
    else if(calculateMPL()<18)
      return "false";
  }
};
int main()
{
  Car obj;
  float a,b,c;
  obj.initializeData(a,b,c);
  if(obj.calculateMPL()>=0)
  {
    cout<<obj.getstartMiles()<<endl;
    cout<<obj.getEndMiles()<<endl;
    cout<<obj.calculateMPL()<<endl;
    cout<<obj.getLitres()<<endl;
    cout<<obj.isEconomycar();
  }
  else
    cout<<"Improper readings";
 return 0;
}
```

Sample Input

100 300 10

Sample Output

100
300
20
10
true

Result

Thus, Program " **Efficiency of Car** " has been successfully executed

Course: OOPS **Session:** Function and Constructor Overloading **Timestamp:** 2021-4-1 10:19:48 **Register Number:** RA2031241010094

Q. Store Keeper

Store Keeper of Super market is finding it difficult to keep track of the stocks in the shop.
So he wants a automated script which pick the total nuber of consumed items from each category and calculate the remaining stock and print those details so that store keeper can order for those items.
You should use function overloading concept to do it.
Mandatory:
1.Create a class named "Store"
2.Create a function named "itemcount" under the class "Store" of type int with one parameter as "id"to get the id of the item.
3.Overload the "itemcount" function with "totalavl" and "consumed" respectively to get the total purchased item count and total number of items sold.
Note:Name of the variables should be "totalavl" and "consumed"
3.Create the objects "ob" for the "Store" class.Access the method "itemcount" using the object name from the main class to display the remaining count of items in the store.
Refer Sample Test Cases.
Programming language need to be used:C++

Source Code

```
#include <iostream>
using namespace std;
class Store
{
  public:
  int itemcount(int id)
  {
    cout<<id<<endl;
  }
  int itemcount(int totalavl,int consumed)
  {
    int a;
    a=totalavl-consumed;
    cout<<a;
  }
};
int main()
{
  Store ob;
  int a,b,id;
  cin>>id>>a>>b;
  ob.itemcount(id);
  ob.itemcount(a,b);
 return 0;
}
```

Sample Input

```
2021
125
67
```

Sample Output

```
2021
58
```

Result

Thus, Program " **Store Keeper** " has been successfully executed

Course: OOPS **Session:** Function and Constructor Overloading **Timestamp:** 2021-4-1 10:20:12 **Register Number:** RA2031241010094

Q. Olympic Gold for India

Ram is an athlete practicing hard for the upcoming Olympics in 1000 meter Relay.He practice only for 5 days in a week and participates in local tournaments onSaturday and Sunday. He has a pattern for evaluating his own performance.For the first two days he used to cover some distance X in 3 mins.For the next three days of the week he used to cover some distance Y in 3 min.

If the comparative result on applying the sum of distance in first 2 days and sum of distance of next 3 days comes as expected he believes he can achieve GOLD for INDIA in Olympics.

For finding that he need the total distance he covered in first 2 days and last 3 days.

Use Function Overloading to find the total Distance Covered by Ram.

Mandatory:

1.Create a class named "Olympic"

2.Create a function named "distance" under the class "Olympic" of type int with two parameter as "D1" and "D2" to get the distance covered by ram in Day 1 and Day 2.

3.Overload the "distance" function with "D3","D4" and "D5" respectively to find the distance covered by ram in Day 3,4 and 5.

Note:Name of the variables should be "D3","D4" and "D5" of type int.

4.Create the objects "ob" for the "Olympic" class.Access the function "distance" using the object name from the main class to calculate the total distance covered combining Day 1,2 and Day 3,4,5 Respectively.

Refer Sample Test Cases.

Programming language need to be used:C++

Source Code

```
#include <iostream>
using namespace std;
class Olympic
{
  public:
  int distance(int D1,int D2)
  {
    return D1+D2;
  }
  int distance(int D3,int D4,int D5)
  {
    return D3+D4+D5;
  }
};
int main()
{
  Olympic ob;
  int a,b,c,d,e;
  cin>>a>>b>>c>>d>>e;
  cout<<ob.distance(a,b)<<" meters"<<endl;
  cout<<ob.distance(c,d,e)<<" meters"<<endl;
 return 0;
}
```

Sample Input

```
90
63
71
34
47
```

Sample Output

```
153 meters
152 meters
```

Result

Thus, Program " **Olympic Gold for India** " has been successfully executed

Course: OOPS **Session:** Function and Constructor Overloading **Timestamp:** 2021-4-1 10:20:52 **Register Number:** RA2031241010094

Q. BCD Game

Harish is working in a company which works on developing simple mathematical automations and hosting it in online platform for the usage of online users free of cost.The company has assigned Harish the task of converting the user inputed value to the Binary BSD code.

Can you help Harish in doing that?

Mandatory:
1.Create a class named "Code" with one private integer data member called "number".

2.Create a function named "initializeData" under the class "Code" of type void with one parameter n.The initializeData function should accepts one integer argument and its return type is void. This function is used to provide an initial value to number. Assume that number is always 3-digit integer.

4.Create a function named "convertToStraightBinary" under the class "Code" of type Int with no parameter to convert the inputed integer value to the equivalent Binary Value.The size of the integer array is number 12 and it is used to hold the binary equivalent code of the number.

5.Create the objects "obj" for the "Code" class.Access the "initializeData" and "convertToStraightBinary" functions using the object name from the main class
Refer Sample Test Cases.

Programming language need to be used:C++

Source Code

```
#include <iostream>
using namespace std;
class Code
{
  int number;
  public:
  int bin[12]={0};
  void initializeData(int n)
  {
    number=n;
  }
  int getNumber()
  {
    return number;
  }
  void convertToStraightBinary()
  {
    int q,r,counter=12;
    q=getNumber();
    while(q!=0)
    {
      r=q%2;
      q=q/2;
      counter--;
      bin[counter]=r;
    }
  }
};
int main()
{
  Code obj;
  int n,i;
  cin>>n;
  obj.initializeData(n);
  obj.convertToStraightBinary();
  for(i=0;i<12;i++)
    cout<<obj.bin[i];
 return 0;
}
```

Sample Input

785

Sample Output

001100010001

Result

Thus, Program " **BCD Game** " has been successfully executed

Course: OOPS **Session:** Function and Constructor Overloading **Timestamp:** 2021-4-1 10:21:19 **Register Number:** RA2031241010094

Q. Saravana Stores

Saravana Stores in Chennai has decided to give increment in wages of its employees.And they wants the automated software which does the job of calculating the revised wages for them based on the increment amount given by the cashier.

You should use function overloading concept to do it.

Mandatory:
1.Create a class named "Salary"

2.Create a function named "Increment" under the class "Salary" of type int with one parameter as "currsal" to gets current wages of the employee.

3.Overload the "Increment" function with "currsal" and "bonus" respectively and calculate the revised salary of the employee

Note:Name of the variables should be "currsal" and "bonus" of type int.

3.Create the objects "ob" for the "Salary" class.Access the function "Increment" using the object name from the main class to calculate the revised salary of employees.

Refer Sample Test Cases.

Programming language need to be used:C++

Source Code

```
#include <iostream>
using namespace std;
class Salary
{
  public:
  int Increment(int currsal)
  {
    return currsal;
  }
  int Increment(int currsal,int bonus)
  {
    int c;
    c=currsal+bonus;
    return c;
  }
};
int main()
{
  Salary ob;
  int currsal,bonus;
   cin>>currsal>>bonus;
  cout<<ob.Increment(currsal)<<endl;
    cout<<ob.Increment(currsal,bonus)<<endl;
 return 0;
}
```

Sample Input

```
1000
251
```

Sample Output

```
1000
1251
```

Result

Thus, Program " **Saravana Stores** " has been successfully executed

Course: OOPS **Session:** Function and Constructor Overloading **Timestamp:** 2021-4-1 10:21:49 **Register Number:** RA2031241010094

Q. Smart Appraisal System

Harsh HR of a Google HQ in Bangalore is looking for the automated appraisal management system.
The current salary of the employee is fixed and based on the results of the performance monitoring software the appraisal management system have to revise the salary of the employee.
Use the Contructor Overloading Concept to develop automated appraisal management system.
The Default Salary of employees is 30000.
sal=30000
Mandatory:
1.Create a new class named "Appraisal"
2.Create a constructor for the class "Appraisal"
3.Create a variable name "sal" to get the default salary and also get the new salary of the employee.
4.Create a object named "myobj" and "myobj2" for the class "Appraisal" in the main class.
5.Access the "Appraisal" class from the main class to print the current salary and the revised salary of the employee.
Refer Sample Test Cases.
Programming Language need to be used:C++

Source Code

```
#include <iostream>
using namespace std;
class TestClass
{
  public:
class Appraisal
{
  int sal;
  public:
  void in()
  {
    cin>>sal;
  }
  void out()
  {
    cout<<"New Salary:"<<sal<<endl;
  }
  Appraisal()
  {
    sal=30000;
    cout<<"Old Salary:"<<sal<<endl;
  }
};
};
 int main()
 {
   TestClass::Appraisal myobj;
   TestClass::Appraisal myobj2();
   myobj.in();
   myobj.out();
 return 0;
}
```

Sample Input

33000

Sample Output

Old Salary:30000
New Salary:33000

Result

Thus, Program " **Smart Appraisal System** " has been successfully executed

Course: OOPS **Session:** Function and Constructor Overloading **Timestamp:** 2021-4-1 10:22:15 **Register Number:** RA2031241010094

Q. CUB

Janani the officer in City union bank is responsible for creating new accounts to its customers.
Initially she will open the zero balance account by default.After one month she has to submit the account statement of the customers she has opened accounts to the circle office.

The balance status of the account can be either POSITIVE ,NEGATIVE or Zero.

Use Constructor Overloading concept to implement it.

Mandatory:
1.Create a class named "AccBalance"

2.Create a constructor for the class "AccBalance"

3.Initially Balance will be zero so you have to print "Zero Balance" as default.

4.Take the floating point value as input to the constructor using the variable name "bal" and decide the status of the account balance .

5.Create the objects "defltBal" and "currBal" for the "AccBalance" class.Access the constructors using the object name from the main method to print the default balance and current balance of the account.

Refer Sample Test Cases.

Programming language need to be used:C++

Source Code

```
#include <iostream>
using namespace std;
class AccBalance
{
  public:
  AccBalance()
  {
    cout<<"Zero Balance"<<endl;
  }
  AccBalance(float bal)
  {
    if(bal>0)
      cout<<"Positive"<<endl;
    else if(bal<0)
      cout<<"Negative"<<endl;
    else
      cout<<"Zero"<<endl;
  }
};
int main()
{
  float amount;
  cin>>amount;
  AccBalance defltBal;
  AccBalance currBal(amount);
 return 0;
}
```

Sample Input

```
15452.23
```

Sample Output

```
Zero Balance
Positive
```

Result

Thus, Program " **CUB** " has been successfully executed

Q. Database Administrator

Dhiya have been given a task to manage student database which has student names.
Take input from user the student name and print it along with the default value "New Student" using Constructor Overloading Concept.
Mandatory:
1.Create a new class named "StudentData"
2.Create a constructor for the class "StudentData"
3.Create a variable name "stuName" to get the default string and also get the new name of the student from the user.
4.Create a object named "myobj" and "myobj2" for the class "StudentData" in the main class "TestClass".
5.Access the "StudentData" class from the main class to print the default name and the user inputted student name
Refer Sample Test Cases.
Programming Language need to be used:C++

Source Code

```
#include <iostream>
#include<string.h>
using namespace std;
class StudentData
{
  char stuName[50];
  public:
  StudentData()
  {
    cout<<"Student Name is: New Student"<<endl;
  }
  StudentData(char *n)
  {
    strcpy(stuName,n);
    cout<<"Student Name is: "<<stuName;
  }
};
class TestClass
{
  char n[50];
  public:
  TestClass()
  {
    StudentData myobj;
    cin>>n;
    StudentData myobj2(n);
  }
};
int main()
{
 TestClass t;
 return 0;
}
```

Sample Input

Harsh

Sample Output

Student Name is: New Student
Student Name is: Harsh

Result

Thus, Program " **Database Administrator** " has been successfully executed

Course: OOPS **Session:** Function and Constructor Overloading **Timestamp:** 2021-4-1 10:23:09 **Register Number:** RA2031241010094

Q. SRM Admission

Admission for the current Academic year is happening in SRM University.Once the Students got admitted they are assigned a unique Registration Number.
Admission in charges used to assign give these details in some order.But during enrollment of the student there is a specific order need to be followed.
So your task is to get the name and registration number of the student from admission in charge and to convert it to the correct format.
You should use function overloading concept to do it.
Mandatory:
1.Create a class named "Student"
2.Create a function named "Identity" under the class "student"of type void with two parameters "name" and "id".The function "identity" should accept the name and id values in any order and converter it to correct order.
Note:Name of the variables should be "name" and "id" and the dimension of character array should be 100.
3.Create the objects "s1" for the "Student" class.Access the function using the object name from the main class to print the student details in correct order.
Refer Sample Test Cases.
Programming language need to be used:C++

Source Code

```
#include <iostream>
using namespace std;
class Student
{
  public:
  void Identity(char name[100],int id)
  {
    cout<<name<<" "<<id<<endl;
  }
  void Identity(int id,char name[100])
  {
    cout<<name<<" "<<id<<endl;
  }
};
int main()
{
  char name[100];
  int id;
  cin>>name>>id;
  Student s1;
  s1.Identity(name,id);
  cin>>id>>name;
  s1.Identity(id,name);
 return 0;
}
```

Sample Input

```
Harsh
1930405078
1930405079
Amit
```

Sample Output

```
Harsh 1930405078
Amit 1930405079
```

Result

Thus, Program " **SRM Admission** " has been successfully executed

Course: OOPS **Session:** Function and Constructor Overloading **Timestamp:** 2021-4-1 10:23:40 **Register Number:** RA2031241010094

Q. Fill Water

Yash have to fill water in a box (cuboid) in shape.
Initialize Length,breadth,height to 0. Print the initial volume and then take input from the user the parameters of cuboid,based on the values calculate the volume of the water in the cuboid and print it.
Use the Constructor Overloading Concept to develop to do this.
Mandatory:
1.Create a new class named "Box"
2.Create a constructor for the class "Box"
Box(double samevalue)
3.Create a function named "volume" of type double.
4.Create a object named "mybox1" and "mybox2" for the class "Box" in the main class "TestClass".
5.Access the "Box" class from the main class to print the initial volume and the newly calculated volume of water in cuboid.
Refer Sample Test Cases.
Programming Language need to be used:C++

Source Code

```
#include <iostream>
using namespace std;
class Box
{
  double Length,breadth,height;
  public:
  Box ()
  {
    Length=0;
    breadth=0;
    height=0;
  }
  Box(double samevalue)
  {
    Length=samevalue;
    breadth=samevalue;
    height=samevalue;
  }
  double Volume()
  {
    return Length*breadth*height;
  }
};
class TestClass
{
  double a,vol,v;
  public:
  TestClass()
  {
    Box mybox1;
    v=mybox1.Volume();
    cout<<v<<endl;
    cin>>a;
    Box mybox2(a);
    vol=mybox2.Volume();
    cout<<vol;
  }
};
int main()
{
  TestClass t;
 return 0;
}
```

Sample Input

12

Sample Output

0
1728

Result

Thus, Program " **Fill Water** " has been successfully executed