```
#include <stdio.h>
#include <stdlib.h>
#include<cstring>
#include<string.h>
struct StudentInfo {
   int rollNo;
   char studName[20];
   int marks;

   //default constructor definiton
   StudentInfo() {
      this->rollNo=0;
      strcpy(this->studName,"NULL");
      this->marks=0;
   }

   //parameterized constructor definition
   StudentInfo(int roll,char* name,int marks) {
      this->rollNo=roll;
      strcpy(this->studName,name);
      this->marks=marks;
   }

   //setters definition
   void setRollNo(int roll) {
      this->rollNo=roll;
   }
   void setStudName(char* name) {
      strcpy(this->studName,name);
   }
   void setMarks(int marks) {
      this->marks=marks;
```

```
    }

    //getters
    int getRollNo() {
        return this->rollNo;
    }

    char* getStudName() {
        return this->studName;
    }
    int getMarks() {
        return this->marks;
    }

    void display() {
        printf("\nDisplay function");
        printf("\nRollNo   = %d",this->rollNo);
        printf("\nStudName = %s",this->studName);
        printf("\nMarks    = %d",this->marks);
    }
};
int main() {
    //Object creation
    StudentInfo s1,s2,s3(30,"Arnav",
                    95);      //default constructors called for s1,s2 for s3 parameterized called

    //setters
    s1.setRollNo(10);
    s1.setStudName("Suraj");
    s1.setMarks(80);

    //getters
    printf("\ns1 values using setters");
```

```
    printf("\nRollNo   = %d",s1.getRollNo());
    printf("\nStudName = %s",s1.getStudName());
    printf("\nMarks    = %d",s1.getMarks());

    //defaultconstructor values
    printf("\n\ns2 values using default constructor");
    printf("\nRollNo   = %d",s2.getRollNo());
    printf("\nStudName = %s",s2.getStudName());
    printf("\nMarks    = %d",s2.getMarks());

    //parameterized constructor values
    printf("\n\ns3 values using parameterized constructor");
    printf("\nRollNo   = %d",s3.getRollNo());
    printf("\nStudName = %s",s3.getStudName());
    printf("\nMarks    = %d",s3.getMarks());

    s1.display();
    s2.display();
    s3.display();
}
```

```
s1 values using setters
RollNo   = 10
StudName = Suraj
Marks    = 80

s2 values using default constructor
RollNo   = 0
StudName = NULL
Marks    = 0

s3 values using parameterized constructor
RollNo   = 30
StudName = Arnav
Marks    = 95
Display function
RollNo   = 10
StudName = Suraj
Marks    = 80
Display function
RollNo   = 0
StudName = NULL
Marks    = 0
```

```
#include <stdio.h>
#include <string.h>
#include <stdlib.h>
#include<cstdio>
struct EmployeeInfo {
   int empId;
   char empName[20];
   double empSalary;

   //setters
   setempId(int id) {
      this->empId=id;
   }
   setempName(char* name) {
      strcpy(this->empName,name);
   }
   setempSalary(int sal) {
      this->empSalary=sal;
   }

//     getters
   int getempId() {
      return this->empId;
   }
   char* getempName() {
      return this->empName;
   }
   double getempSalary() {
      return this->empSalary;
   }

   //default constructor
```

```
    EmployeeInfo() {
        printf("\ndefault");
        this->empId=0;
        strcpy(this->empName,"NULL");
        this->empSalary=0;
    }
    //parameterized constructor
    EmployeeInfo(int id,char* name, double sal) {
        printf("\nPara");
        this->empId=id;
        strcpy(this->empName,name);
        this->empSalary=sal;
    }
    void display() {
        printf("\nDisplay");
        printf("\nId     = %d",this->empId);
        printf("\nName   = %s",this->empName);
        printf("\nSalary = %.1lf",this->empSalary);
    }
};

int main() {
    EmployeeInfo e1,e2,e3(30,"vishankh",45000);

    e1.setempId(10);
    e1.setempName("Shekhar");
    e1.setempSalary(30000);

    printf("\ne1 values");
    printf("\nId     = %d",e1.getempId());
    printf("\nName   = %s",e1.getempName());
    printf("\nSalary = %.1lf",e1.getempSalary());
```

```
    printf("\n\ne2 values");
    printf("\nId     = %d",e2.getempId());
    printf("\nName   = %s",e2.getempName());
    printf("\nSalary = %.1lf",e2.getempSalary());

    printf("\n\ne3 values");
    printf("\nId     = %d",e3.getempId());
    printf("\nName    = %s",e3.getempName());
    printf("\nSalary  = %.1lf",e3.getempSalary());

    e1.display();
    e2.display();
    e3.display();
}
```

```
default
default
Para
e1 values
Id     = 10
Name   = Shekhar
Salary = 30000.0

e2 values
Id     = 0
Name   = NULL
Salary = 0.0

e3 values
Id      = 30
Name    = vishankh
Salary  = 45000.0
Display
Id     = 10
Name   = Shekhar
Salary = 30000.0
Display
Id     = 0
Name   = NULL
```

```
#include <stdio.h>
#include <string.h>
#include <stdlib.h>
#include<cstdio>
struct AdminInfo {
   int adminId;
   char adminName[20];
   double adminSalary;
   double adminAllowance;

   void setAdminId(int id) {
      this->adminId=id;
   }
   void setAdminName(char* name) {
      strcpy(this->adminName,name);
   }
   void setAdminSalary(double sal) {
      this->adminSalary=sal;
   }
   void setAdminAllowance(double allow) {
      this->adminAllowance=allow;
   }

   int getAdminId() {
      return this->adminId;
   }
   char* getAdminName() {
      return this->adminName;
   }
   double getAdminSalary() {
      return this->adminSalary;
   }
```

```
    double getAdminAllowance() {
        return this->adminAllowance;
    }

    AdminInfo() {
        this->adminId=0;
        strcpy(this->adminName,"NULL");
        this->adminSalary=0;
        this->adminAllowance=0;
    }

    AdminInfo(int id,char* name,double sal,
            double allow) {
        this->adminId=id;
        strcpy(this->adminName,name);
        this->adminSalary=sal;
        this->adminAllowance=allow;
    }

    void display() {
        printf("\nDisplay");
        printf("\nAdmin Id     = %d",this->adminId);
        printf("\nAdmin Name   = %s",this->adminName);
        printf("\nAdmin Salary = %.1lf",
              this->adminSalary);
        printf("\nAllowance    = %.1lf",
              this->adminAllowance);

    }

};
int main() {
```

```
AdminInfo ad1,ad2,ad3(30,"Nihal",45000,3000);

ad1.setAdminId(10);
ad1.setAdminName("Srikant");
ad1.setAdminSalary(30000);
ad1.setAdminAllowance(4000);

printf("\nAdmin 1 info");
printf("\nAdmin Id     = %d",ad1.getAdminId());
printf("\nAdmin Name   = %s",ad1.getAdminName());
printf("\nAdmin Salary = %.1lf",
     ad1.getAdminSalary());
printf("\nAllowance    = %.1lf",
     ad1.getAdminAllowance());

printf("\n\nAdmin 2 info");
printf("\nAdmin Id     = %d",ad2.getAdminId());
printf("\nAdmin Name   = %s",ad2.getAdminName());
printf("\nAdmin Salary = %.1lf",
     ad2.getAdminSalary());
printf("\nAllowance    = %.1lf",
     ad2.getAdminAllowance());

printf("\n\nAdmin 3 info");
printf("\nAdmin Id     = %d",ad3.getAdminId());
printf("\nAdmin Name   = %ss",ad3.getAdminName());
printf("\nAdmin Salary = %.1lf",
     ad3.getAdminSalary());
printf("\nAllowance    = %.1lf",
     ad3.getAdminAllowance());

     ad1.display();
```

```
        ad2.display();
        ad3.display();
}
```

```
Admin 1 info
Admin Id     = 10
Admin Name   = Srikant
Admin Salary = 30000.0
Allowance    = 4000.0

Admin 2 info
Admin Id     = 0
Admin Name   = NULL
Admin Salary = 0.0
Allowance    = 0.0

Admin 3 info
Admin Id     = 30
Admin Name   = Nihals
Admin Salary = 45000.0
Allowance    = 3000.0
Display
Admin Id     = 10
Admin Name   = Srikant
Admin Salary = 30000.0
Allowance    = 4000.0
Display
```

```
#include <stdio.h>
#include <string.h>
#include <stdlib.h>
#include <cstdio>
struct HRInfo
{
   int HRId;
   const char  HRName[20];
   double HRSalary;
   double HRCommision;

   void setHRId(int id)
   {
      this->HRId = id;
   }
   void setHRName(char *name)
   {
      strcpy(this->HRName, name);
   }
   void setHRSalary(double sal)
   {
      this->HRSalary = sal;
   }
   void setHRCommision(double com)
   {
      this->HRCommision = com;
   }

   int getHRId()
   {
      return this->HRId;
   }
```

```
char *getHRName()
{
   return this->HRName;
}
double getHRSalary()
{
   return this->HRSalary;
}
double getHRCommision()
{
   return this->HRCommision;
}

HRInfo()
{
   this->HRId = 0;
   strcpy(this->HRName, "NULL");
   this->HRSalary = 0;
   this->HRCommision = 0;
}
HRInfo(int id, char *name, double sal,
     double com)
{
   this->HRId = id;
   strcpy(this->HRName, name);
   this->HRSalary = sal;
   this->HRCommision = com;
}
void display()
{
   printf("\nDisplay");
   printf("\nHR Id     = %d",this->HRId);
```

```
        printf("\nHR Name   = %s",this->HRName);
        printf("\nHR Salary = %.1lf", this->HRSalary);
        printf("\nHR Comm   = %.1lf",this->HRCommision);
    }
};
int main()
{
    HRInfo h1, h2, h3(30, "Suraj", 40000, 5000);

    h1.setHRId(10);
    h1.setHRName("Tiger");
    h1.setHRSalary(35000);
    h1.setHRCommision(2500);

    printf("\nHR1 Info");
    printf("\nHR Id     = %d", h1.getHRId());
    printf("\nHR Name   = %s", h1.getHRName());
    printf("\nHR Salary = %.1lf", h1.getHRSalary());
    printf("\nHR Comm   = %.1lf", h1.getHRCommision());

    printf("\n\nHR2 Info");
    printf("\nHR Id     = %d", h2.getHRId());
    printf("\nHR Name   = %s", h2.getHRName());
    printf("\nHR Salary = %.1lf", h2.getHRSalary());
    printf("\nHR Comm   = %.1lf", h2.getHRCommision());

    printf("\n\nHR3 Info");
    printf("\nHR Id     = %d", h3.getHRId());
    printf("\nHR Name   = %s", h3.getHRName());
    printf("\nHR Salary = %.1lf", h3.getHRSalary());
    printf("\nHR Comm   = %.1lf", h3.getHRCommision());
}
```

```
HR1 Info
HR Id     = 10
HR Name   = Tiger
HR Salary = 35000.0
HR Comm   = 2500.0

HR2 Info
HR Id     = 0
HR Name   = NULL
HR Salary = 0.0
HR Comm   = 0.0

HR3 Info
HR Id     = 30
HR Name   = Suraj
HR Salary = 40000.0
HR Comm   = 5000.0
PS D:\FirstBit Solutions\CPP Programming\Assignnments\Assignment_1> ./a.exe
```

```
#include <stdio.h>
#include <string.h>
#include <stdlib.h>
#include <cstdio>
struct SalesManagerInfo
{
   int smId;
   char smName[20];
   double smSalary;
   double smIncentive;
   int smTarget;

   // setters
   void setSmId(int id)
   {
      this->smId = id;
   }
   void setSmName(char* name)
   {
      strcpy(this->smName, name);
   }
   void setSmSalary(double sal)
   {
      this->smSalary = sal;
   }
   void setSmIncentive(double inc)
   {
      this->smIncentive = inc;
   }
   void setSmTarget(int tar)
   {
```

```
    this->smTarget = tar;
}

// getters
int getSmId()
{
    return this->smId;
}
char *getSmName()
{
    return this->smName;
}
double getSmSalary()
{
    return this->smSalary;
}
double getSmIncetive()
{
    return this->smIncentive;
}
int getSmTarget()
{
    return this->smTarget;
}

// default constructor
SalesManagerInfo()
{
    this->smId = 0;
    strcpy(this->smName ,"NULL");
    this->smSalary = 0;
```

```
    this->smIncentive = 0;
    this->smTarget = 0;
  }

  //parameterized constructor
  SalesManagerInfo(int id,char* name,double sal,double inc, int target)
  {
    this->smId=id;
    strcpy(this->smName,name);
    this->smSalary=sal;
    this->smIncentive=inc;
    this->smTarget=target;
  }

  void display()
  {
    printf("\n\nDisplay");
    printf("\nSMId = %d",this->smId);
    printf("\nSMName = %s",this->smName);
    printf("\nSMSalary = %.0lf",this->smSalary);
    printf("\nSMIncentive = %.0lf",this->smIncentive);
    printf("\nSMTarget = %.0lf",this->smTarget);
  }
};
int main()
{
  // SalesManagerInfo s1,s2,s3(30,"Srihari",80000,4000,40);
  SalesManagerInfo s1,s2,s3(30,"Shreya",45000,2000,120);
  s1.setSmId(10);
  s1.setSmName("Nikhil");
  s1.setSmSalary(65000);
```

```
    s1.setSmIncentive(5000);
    s1.setSmTarget(156);


    s1.display();
    s2.display();
    s3.display();
}
```

```
SMName = Nikhil
SMSalary = 65000
SMIncentive = 5000
SMTarget = 5000

Display
SMId = 0
SMName = NULL
SMSalary = 0
SMIncentive = 0
SMTarget = 0

Display
SMId = 30
SMName = Shreya
SMSalary = 45000
SMIncentive = 2000
SMTarget = 2000
```

```
#include <stdio.h>
#include <string.h>
#include <stdlib.h>
#include <cstdio>
struct DateInfo
{
   int day;
   int month;
   int year;

   // setters
   void setDay(int day)
   {
      this->day = day;
   }
   void setMonth(int month)
   {
      this->month = month;
   }
   void setYear(int year)
   {
      this->year = year;
   }

   // getters
   int getDay()
   {
      return this->day;
   }
   int getMonth()
```

```
    {
        return this->month;
    }
    int getYear()
    {
        return this->year;
    }

    // default
    DateInfo()
    {
        this->day = 0;
        this->month = 0;
        this->year = 0;
    }

    DateInfo(int day, int month, int year)
    {
        this->day = day;
        this->month = month;
        this->year = year;
    }

    void display()
    {
        printf("\nDisplay");
        printf("\nDay   = %d", this->day);
        printf("\nMonth = %d", this->month);
        printf("\nYear  = %d", this->year);
    }
};
```

```
int main()
{
   DateInfo d1, d2, d3(25, 10, 2023);

   d1.setDay(22);
   d1.setMonth(1);
   d1.setYear(1994);

   printf("\nDate 1 Info");
   printf("\nDay   = %d", d1.getDay());
   printf("\nMonth = %d", d1.getMonth());
   printf("\nYear  = %d", d1.getYear());

   printf("\nDate 2 Info");
   printf("\nDay   = %d", d2.getDay());
   printf("\nMonth = %d", d2.getMonth());
   printf("\nYear  = %d", d2.getYear());

   printf("\nDate 3 Info");
   printf("\nDay   = %d", d3.getDay());
   printf("\nMonth = %d", d3.getMonth());
   printf("\nYear  = %d", d3.getYear());

   d1.display();
   d2.display();
   d3.display();
}
```

```
Date 1 Info
Day   = 22
Month = 1
Year  = 1994
Date 2 Info
Day   = 0
Month = 0
Year  = 0
Date 3 Info
Day   = 25
Month = 10
Year  = 2023
Display
Day   = 22
Month = 1
Year  = 1994
Display
Day   = 0
Month = 0
Year  = 0
```

```
#include <stdio.h>
#include <string.h>
#include <stdlib.h>
#include <cstdio>
struct TimeInfo
{
   int hour;
   int minute;
   int seconds;

   // setters
   void setHour(int h)
   {
      this->hour = h;
   }
   void setMinute(int m)
   {
      this->minute = m;
   }
   void setSeconds(int s)
   {
      this->seconds = s;
   }

   // getters
   int getHour()
   {
      return this->hour;
   }
   int getMinute()
   {
```

```
    return this->minute;
  }
  int getSeconds()
  {
    return this->seconds;
  }

  // default
  TimeInfo()
  {
    this->hour = 0;
    this->minute = 0;
    this->seconds = 0;
  }

  // parameterized
  TimeInfo(int h, int m, int s)
  {
    this->hour = h;
    this->minute = m;
    this->seconds = s;
  }

  void display()
  {
    printf("\nDisplay");
    printf("\nHours   = %d", this->hour);
    printf("\nMinutes = %d", this->minute);
    printf("\nSeconds = %d", this->seconds);
  }
};
```

```
int main()
{
   TimeInfo t1, t2, t3(11, 23, 53);

   t1.setHour(10);
   t1.setMinute(20);
   t1.setSeconds(33);

   printf("\nT1 info");
   printf("\nHours   = %d",t1.getHour());
   printf("\nMinutes = %d",t1.getMinute());
   printf("\nSeconds = %d", t1.getSeconds());

   printf("\nT2 info");
   printf("\nHours   = %d",t2.getHour());
   printf("\nMinutes = %d",t2.getMinute());
   printf("\nSeconds = %d", t2.getSeconds());

   printf("\nT3 info");
   printf("\nHours   = %d",t3.getHour());
   printf("\nMinutes = %d",t3.getMinute());
   printf("\nSeconds = %d", t3.getSeconds());

   t1.display();
   t2.display();
   t3.display();
}
```

```
T1 info
Hours   = 10
Minutes = 20
Seconds = 33
T2 info
Hours   = 0
Minutes = 0
Seconds = 0
T3 info
Hours   = 11
Minutes = 23
Seconds = 53
Display
Hours   = 10
Minutes = 20
Seconds = 33
Display
Hours   = 0
Minutes = 0
Seconds = 0
Display
Hours   = 11
Minutes = 23
Seconds = 53
```

```
#include <stdio.h>
#include <string.h>
#include <stdlib.h>
#include <cstdio>
struct DistanceInfo
{
   int feet;
   int inch;

   // setters
   void setFeet(int f)
   {
      this->feet = f;
   }
   void setInch(int i)
   {
      this->inch = i;
   }

   // getters
   int getFeet()
   {
      return this->feet;
   }
   int getInch()
   {
      return this->inch;
   }

   DistanceInfo()
   {
```

```
        this->feet = 0;
        this->inch = 0;
    }

    DistanceInfo(int f, int i)
    {
        this->feet = f;
        this->inch = i;
    }

    void display()
    {
        printf("\nDisplay");
        printf("\nFeet = %d", this->feet);
        printf("\nInch = %d", this->inch);
    }
};
int main()
{
    DistanceInfo d1, d2, d3(10, 20);

    d1.setFeet(9);
    d1.setInch(22);

    printf("\nDistance 1 Info");
    printf("\nFeet = %d", d1.getFeet());
    printf("\nIncg = %d", d1.getInch());

    printf("\nDistance 2 Info");
    printf("\nFeet = %d", d2.getFeet());
    printf("\nIncg = %d", d2.getInch());
```

```
    printf("\nDistance 3 Info");
    printf("\nFeet = %d", d3.getFeet());
    printf("\nIncg = %d", d3.getInch());

    d1.display();
    d2.display();
    d3.display();
}
```

```
Distance 1 Info
Feet = 9
Incg = 22
Distance 2 Info
Feet = 0
Incg = 0
Distance 3 Info
Feet = 10
Incg = 20
Display
Feet = 9
Inch = 22
Display
Feet = 0
Inch = 0
Display
Feet = 10
Inch = 20
```

```
#include <stdio.h>
#include <string.h>
#include <stdlib.h>
#include <cstdio>
struct ComplexInfo
{
   int real;
   int imaginary;

   // SETTERS
   void setReal(int real)
   {
      this->real = real;
   }
   void setImaginary(int img)
   {
      this->imaginary = img;
   }

   // getters
   int getReal()
   {
      return this->real;
   }
   int getImaginary()
   {
      return this->imaginary;
   }

   // default
   ComplexInfo()
```

```
    {
        this->real = 0;
        this->imaginary = 0;
    }
    // parameterized
    ComplexInfo(int real, int img)
    {
        this->real = real;
        this->imaginary = img;
    }

    void display()
    {
        printf("\n\nDisplay");
        printf("\nReal      = %d", this->real);
        printf("\nImaginary = %di", this->imaginary);
    }
};
int main()
{
    ComplexInfo c1, c2, c3(20, 5);

    c1.setReal(10);
    c1.setImaginary(9);

    printf("\nC1");
    printf("\nReal      = %d", c1.getReal());
    printf("\nImaginary = %di", c1.getImaginary());

    printf("\nC2");
    printf("\nReal      = %d", c2.getReal());
```

```
    printf("\nImaginary = %di", c2.getImaginary());


    printf("\nC3");
    printf("\nReal      = %d", c3.getReal());
    printf("\nImaginary = %di", c3.getImaginary());


    c1.display();
    c2.display();
    c3.display();
}
```

```
C1
Real      = 10
Imaginary = 9i
C2
Real      = 0
Imaginary = 0i
C3
Real      = 20
Imaginary = 5i

Display
Real      = 10
Imaginary = 9i

Display
Real      = 0
Imaginary = 0i

Display
Real      = 20
Imaginary = 5i
```

```
#include <stdio.h>
#include <string.h>
#include <stdlib.h>
#include <cstdio>
struct ProductInfo
{
   int productId;
   char productName[20];
   int productQty;
   double productPrice;

   // setters
   void setProductId(int id)
   {
      this->productId = id;
   }
   void setProductName(const char *name)
   {
      strcpy(this->productName, name);
   }
   void setProductQty(int qty)
   {
      this->productQty = qty;
   }
   void setProductPrice(double price)
   {
      this->productPrice = price;
   }

   // getters
   int getProductId()
```

```
{
   return this->productId;
}
char *getProductName()
{
   return this->productName;
}
int getProductQty()
{
   return this->productQty;
}
double getProductPrice()
{
   return this->productPrice;
}

// default
ProductInfo()
{
   this->productId = 0;
   strcpy(this->productName,"NULL");
   this->productQty = 0;
   this->productPrice = 0;
}

// parameterized
ProductInfo(int id,const char *name, int qty, double price)
{
   this->productId = id;
   strcpy(this->productName, name);
   this->productQty = qty;
```

```
        this->productPrice = price;
    }

    void display()
    {
        printf("\n\nDisplay");
        printf("\nProductId    = %d", this->productId);
        printf("\nProductName  = %s", this->productName);
        printf("\nProductQty   = %d", this->productQty);
        printf("\nProductPrice = %1lf", this->productPrice);
    }
};
int main()
{
    ProductInfo p1, p2, p3(30, "Television", 1, 45000);

    p1.setProductId(10);
    p1.setProductName("mobile");
    p1.setProductQty(2);
    p1.setProductPrice(80000);

    printf("\nP1");
    printf("\nProductId    = %d", p1.getProductId());
    printf("\nProductName  = %s", p1.getProductName());
    printf("\nProductQty   = %d", p1.getProductQty());
    printf("\nProductPrice = %1lf", p1.getProductPrice());

    printf("\n\nP2");
    printf("\nProductId    = %d", p2.getProductId());
    printf("\nProductName  = %s", p2.getProductName());
    printf("\nProductQty   = %d", p2.getProductQty());
```

```
    printf("\nProductPrice = %1lf", p2.getProductPrice());


    printf("\n\nP3");
    printf("\nProductId    = %d", p3.getProductId());
    printf("\nProductName  = %s", p3.getProductName());
    printf("\nProductQty   = %d", p3.getProductQty());
    printf("\nProductPrice = %1lf", p3.getProductPrice());


    p1.display();
    p2.display();
    p3.display();
}
```

```
P1
ProductId    = 10
ProductName  = mobile
ProductQty   = 2
ProductPrice = 80000.000000

P2
ProductId    = 0
ProductName  = NULL
ProductQty   = 0
ProductPrice = 0.000000

P3
ProductId    = 30
ProductName  = Television
ProductQty   = 1
ProductPrice = 45000.000000

Display
ProductId    = 10
ProductName  = mobile
ProductQty   = 2
ProductPrice = 80000.000000
```

```
Display
ProductId    = 0
ProductName  = NULL
ProductQty   = 0
ProductPrice = 0.000000

Display
ProductId    = 30
ProductName  = Television
ProductQty   = 1
ProductPrice = 45000.000000
```