1.

```
#include<stdio.h>
class Calculator {
	public:
		//addition
		int add(int a,int b) {
			return a+b;
		}
		float add(int a,float b) {
			return a+b;
		}
		float add(float a,int b) {
			return a+b;
		}
		float add(float a,float b) {
			return a+b;
		}
		//subtraction
		int sub(int a,int b) {
			return a-b;
		}
		float sub(int a,float b) {
			return a-b;
		}
		float sub(float a,int b) {
			return a-b;
		}
		float sub(float a,float b) {
			return a-b;
		}
		//multiplication
```

```
		int mult(int a,int b) {
			return a*b;
		}
		float mult(int a,float b) {
			return a*b;
		}
		float mult(float a,int b) {
			return a*b;
		}
		float mult(float a,float b) {
			return a*b;
		}
		//division
		int division(int a,int b) {
			return a/b;
		}
		float division(int a,float b) {
			return a/b;
		}
		float division(float a,int b) {
			return a/b;
		}
		float division(float a,float b) {
			return a/b;
		}
};
int main() {
	Calculator c;
	int a=10,b=20;
	float t=6.2,d=5.2;
```

```
        printf("Sum=%d\n",c.add(a,b));
        printf("Sum=%f\n",c.add(a,t));
        printf("Sum=%f\n",c.add(t,a));
        printf("Sum=%f\n",c.add(t,d));
        printf("\n");
        printf("subtraction=%d\n",c.sub(a,b));
        printf("subtraction=%f\n",c.sub(a,t));
        printf("subtraction=%f\n",c.sub(t,a));
        printf("subtraction=%f\n",c.sub(t,d));
        printf("\n");
        printf("mult=%d\n",c.mult(a,b));
        printf("mult=%f\n",c.mult(a,t));
        printf("mult=%f\n",c.mult(t,a));
        printf("mult=%f\n",c.mult(t,d));
        printf("\n");
        printf("division=%d\n",c.division(a,b));
        printf("division=%f\n",c.division(a,t));
        printf("division=%f\n",c.division(t,a));
        printf("division=%f\n",c.division(t,d));
        printf("\n");
        return 0;
}
```

2.

```
#include<stdio.h>

struct Shapes {
        int r,l,b,h,base;
        float side;
        const int pi=3.14;
```

```
        Shapes() {
                this->r=0;
                this->l=0;
                this->b=0;
                this->h=0;
                this->base=0;
        }
        int area(int a,int b,int c) {
                //recatangle
                this->l=a;
                this->b=b;
                this->h=c;
                return l*b*h;
        }
        float area(float a) {
                //square
                this->side=a;
                return side*side;
        }
        float area(int a) {
                //circle
                this->r=a;
                return this->pi*r*r;
        }
        float area(int a,int b) {
                //triangle
                this->base=a;
                this->h=b;
                return 0.5*base*h;
        }
};
```

```
int main() {
	int l=10,h=10,b=10;
	float side=10.2;
	int r=10;
	int base=10,hight=20;
	Shapes rectangle,square,circle,triangle;

	printf("Enter choise=\n1)Rectangle\n2)Sqaure\n3)circle\n4)Triangle\n");
	int n;
	scanf("%d",&n);

	switch(n) {
		case 1:printf("area of rectangle=%d\n",rectangle.area(l,b,h));
			break;
		case 2:printf("area of square=%f\n",square.area(side));
			break;
		case 3:  printf("area of circle=%f\n",circle.area(r));
			break;
		case 4:  printf("area of triangle=%f\n",triangle.area(base,hight));
			break;
		default:
			printf("Please enter valid choise\n");
	}
}
```

3.

```
#include<stdio.h>
#include<string.h>

struct Employee {
	int eID;
```

```
char eName[30];
double eSallary;   //anual

Employee() {
	eID=0;
	strcpy(eName,"null");
	eSallary=0;
}
Employee(int eID,char*name,double sallary) {
	this->eID=eID;
	strcpy(this->eName,name);
	this->eSallary=eSallary;
}
//setters
void setEID(int id) {
	eID=id;
}
void setEName(char*name) {
	strcpy(this->eName,name);

}
void setESallary(double sal) {
	this->eSallary=sal;
}
//getters
int getEID() {
	return this->eID;
}
char* getEName() {
	return this->eName;
```

```
	}
	double getESallary() {
		return this->eSallary;
	}
	void display() {
		printf("\nid=%d\n",eID);
		printf("Name=%s\n",eName);
		printf("sallary=%.2lf\n",eSallary);
	}
};
struct Student {
	int sRoll;
	char sName[20];
	int marks;    //in percent
	Student() {
		this->sRoll=0;
		strcpy(this->sName,"null");
		this->marks=0;

	}
	Student(int roll,char*name,int marks) {
		this->sRoll=roll;
		strcpy(this->sName,name);
		this->marks=marks;
	}
//setters
	void setRoll(int roll) {
		this->sRoll=roll;
	}
	void setName(char*name) {
		strcpy(this->sName,name);
```

```
	}
	void setMarks(int marks) {
		this->marks=marks;
	}
	//getters
	int getRoll() {
		return this->sRoll;
	}
	char* getName() {
		return this->sName;
	}
	int getMarks() {
		return this->marks;
	}

	void display() {
		printf("\n******************\n");
		printf("Roll no=%d\n",sRoll);
		printf("name=%s\n",sName);
		printf("Marks=%d\n",marks);
	}


};
int main() {
	printf("Enter choise\n1)Student\n2)Employee\n");
	int n;
	scanf("%d",&n);
	switch(n) {
		case 1: {
			int id;
```

```
		char name[10];
		int marks;
		printf("Please enter id,name and marks in percentage=");
		scanf("%d",&id);
		fflush(stdin);
		gets(name);
		scanf("%d",&marks);

		Student s1;
		s1.setMarks(marks);
		s1.setName(name);
		s1.setRoll(id);

		if(s1.getMarks()>80)
			printf("Loan amount 2 lack is approved\n");
		else if(s1.getMarks()<80 && s1.getMarks()>60)
			printf("Loan amount 1 lack is approved\n");
		else if(s1.getMarks()<60 && s1.getMarks()>40)
			printf("Loan amount 50k is approved\n");
		else if(s1.getMarks()<40)
			printf("no loan approved\n");

}
break;
case 2: {
		int id;
		char name[10];
		double sallary;// in LPA;
		printf("Please enter id,name and in Sallary=");
		scanf("%d",&id);
		fflush(stdin);
```

```
                gets(name);
                scanf("%lf",&sallary);
                Employee s2;
                s2.setEID(id);
                s2.setEName(name);
                s2.setESallary(sallary);


                if(s2.getESallary()>1200000)
                        printf("Loan amount 7 lack is approved\n");
                else if(s2.getESallary()<120000 && s2.getESallary()>100000)
                        printf("Loan amount 6 lack is approved\n");
                else if(s2.getESallary()<100000 && s2.getESallary()>600000)
                        printf("Loan amount 5 lack is approved\n");
                else if(s2.getESallary()<600000 && s2.getESallary()>400000)
                        printf("Loan amount 4 lack is approved\n");
                else if(s2.getESallary()<400000)
                        printf("no loan approved\n");

        }
        break;
        default:
                printf("Wrong choise\n");
    }



    return 0;
}
```