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(3)

```
#include <stdio.h>
#include <conio.h>
int main()
{
  int n;
printf("Enter the number : ");
scanf("%d",&n);
int i, j, d=1;
for(i=1;i<=n;i++)
{
   for(j=1 ; j<=i, j++)
   {
        printf("%d ",d);
        d++;
   }
   printf("\n");
}
  return 0;
}
```

(4)

```
#include <stdio.h>
#include <conio.h>
int main()
{
   int n;
   printf("Enter the no. of students : ");
   scanf("%d",&n);
   int i
```

(4) (a)

```
#include <stdio.h>
#include <conio.h>
struct student
{
    int CIE;
    int SEE;
    char Grade;
};

int main()
{
    int n;
    printf("Enter the no. of students : ");
    scanf("%d",&n);
    int i, t=0;
    struct student S[n];
    printf("Enter the details of students : \n");
    for(i=0;i<n;i++)
    {
        printf("Enter the details of %d student ",i+1);
        scanf("%d %d",&S[i].CIE,&S[i].SEE);
    }
    for(i=0;i<n;i++)
    {
        t=S[i].CIE + (S[i].SEE/2);
```

```
if (t >=90)
{
    s[i].Grade = 'S';
}
else if(t >=80 && t<90)
{
    s[i].Grade = 'A';
}
else if (t>=70 && t<80)
{
    s[i].Grade = 'B';
}
else if (t>=60 && t<70)
{
    s[i].Grade = 'C'
}
else if (t>=50 && t<60)
{
    s[i].Grade = 'D'
}
else
{
    s[i].Grade = 'F';
}
}
for(i=0;i<n;i++)
{
    Printf("The grade of %d student is %c", i+1, s[i].Grade);
}
return 0;
}
```

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(5)

```
#include <stdio.h>
#include <conio.h>
int isprime (int x)
{
    int i, d = 0;
    for (i = 1; i <= x; i++)
    {
        if (x % i == 0)
            d++;
    }
    if (d > 2)
        return 0;
    return 1;
}
int main()
{
    int a, b;
    printf (" Enter the two numbers : \n");
    scanf ("%d %d", &a, &b);
    printf ("The prime numbers between %d and %d are :\n");
    int i;
    for (i = a ; i <= b; i++)
    {
        if (isprime(i) == 1)
            printf ("%d\n", i);
    }
    return 0;
}
```

(6)

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

Void cylinder();
Void cone();
Void sphere();
int main()
{
    int i=1;
    while(i!=0)
    {
      printf("Enter 1 for the Area and volume of cylinder \n");
      printf("Enter 2 for the Area and volume of cone \n");
      printf("Enter 3 for the Area and volume of sphere \n");
      printf("Enter 0 for exit \n");
      scanf("%d",&n);
      if(i==0)
        break;
      if(i==1)
        ~~sphere~~ cylinder();
      else if(i==2)
        cone();
      else if(i==3)
        sphere();
    }
    return 0;
}
```

```
Void cylinder ()
{
    int r, h;
    printf("Enter the radius and height \n");
    scanf("%d %d", &r, &h);
    float A, V;
    A = 2*(3.14)*r*h + 2*(3.14)*r*r;
    V = (3.14)*r*r*h;
    printf("The Area is : %f", A);
    printf("The volume is : %f", V);
}

Void Cone ()
{
    int r, h;
    printf("Enter the radius and height \n");
    scanf("%d %d", &r, &h);
    float A, V;
    A = (3.14)*(r + sqrt(r*r + h*h))
    V = ((3.14)*r*r*h)/3;
    printf("The Area is %f", A);
    printf("The volume is %f", V);
}

Void Sphere ()
{
    int r;
    printf("Enter the radius of sphere \n");
    scanf("%d", &r);
```

```
float V,A;
A= 4*(3.14)*r*r;
V= (4/3)*(3.14)*r*r;
printf("The Area is %f", A);
printf("The volume is %f",V);
}
```

(7)

```
#include<stdio.h>
#include<conio.h>
struct student
{
    char name[50];

int main()
{
```

(7)

```
#include <stdio.h>
#include <conio.h>
struct student
{
    char name[50];
    int d;
};
int main()
{
    int n;
    printf("Enter the no. of students :");
    scanf("%d", &n);
    int i;
    struct student s[n];
    printf("Enter the details of students : \n");
    printf("Enter the subject code 1 for Internet of things \n");
    printf("Enter the subject code 2 for Advanced Java \n");
    printf("Enter the subject code 3 for Advanced data structures \n");
    for(i=0;i<n;i++)
    {
        printf("Enter the details of %d student : \n", i+1);
        scanf("%s", s[i].name);
        scanf("%d", s[i].d);
    }
    int x;
    printf("Enter a subject code : \n");
    printf("t
    scanf("%d", &x);
```

printf(" The name of the students who selected the subject you entered are :\n");

~~for(;;)~~

```
for(i=0 ; i<n ; i++)
{
    if(sc[i].d == x)
    {
        printf(" %s\n", sc[i].name);
    }
}
int count1=0 , count2=0 , count3=0;
for(i=0; i<n; i++)
{
    if (sc[i].d == 1)
        count1++;
    else if (sc[i].d == 2)
        count2++;
    else
        count3++;
}
```

printf(" The number of students who selected 1 subject are %d\n", count1);

printf(" The numbers of students who selected 2 subject are %d\n", count2);

printf(" The numbers of students who selected 3 subject are %d\n", count3);

```
if (count1 < 30)
{
    printf("The subject 1 is removed and reselect from
            the other two\n");
    x = count1;
}
else if (count2 < 30)
{
    printf("The subject 2 is removed and reselect
            from the other two\n");
    x = count2;
}
else if (count3 < 30)
{
    printf("The subject 3 is removed and reselect
            from the other two\n");
    x = count3;
}
printf(" The subject %d is removed and reselect from
        the other two\n", x);
for(i=0; i<n; i++)
{
    if(s[i].d == x)
    {
        printf(" Enter the subject code other than %d for %s
                student", x, s[i].name);
        scanf("%d", s[i].d);
    }
}
```

```
count1=0
count2=0
count3=0
for(i=0; i<n; i++)
{
    if(sc[i].d==1)
    {
        count1++;
    }
    else if(sc[i].d==2)
        count2++;
    else
        count3++;
}
printf("The number of students who selected subject 1 are:
    %d \n", count1);
printf("The number of students who selected subject 2 are
    %d \n", count2);
printf("The number of students who selected subject 3 are
    %d \n", count3);
if(count1>0)
{
    printf("The students who selected subject 1 as the
        elective are :\n");
    for(i=0; i<n; i++)
    {
        if(sc[i].d==1)
            printf("%s\n", s[i].name);
    }
}
```

```
if(count2>0)
{
    printf(" The name of the student who selected
            subject 2 as elective are :\n");
    for(i=0;i<n;i++)
    {
        if(s[i].d==2)
            printf("%s\n",s[i].name);
    }
}
if(count3>0)
{
    printf(" The name of the student who selected
            subject 3 as the elective are :\n");
    for(i=0;i<n;i++)
    {
        if(s[i].d==3)
            printf("%s\n",s[i].name);
    }
}
return 0;
}
```