week 2

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3)
```
#include <stdio.h>
int main() {
int rows, i, j, number = 1;
printf("Enter the number of rows:");
scanf("%d", &rows);
for(i=1; i<=rows; i++) {
for(j=1; j<=i; ++j) {
printf("%d", number);
++number;
}
printf("\n");
}
return 0;
}
```


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4)

```
# include < stdio . h >
int main ()
{
int cie , see ;
float total ;
printf (" Enter student marks : ");
scanf (" %d %d ", &cie, &see);
total = (cie) + see/2 ;
printf (" total = %.2f \n", total);
if ( total >= 90) {
  printf (" Grade S ");
}
else if ( total >= 80)
  {
  printf (" Grade A ");
  }
else if ( total >= 70)
  {
  printf (" Grade B");
  }
else if ( total >= 60)
  {
  printf ("Grade c");
  }
else if (total >=50)
  {
  printf (" Grade D");
  }
else if (total >= 40)
  {
  printf (" Grade E ");
  }
  else
  {
  printf (" Grade F ");
  }
return 0 ;
}
```

5)

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```
#include <stdio.h>
void main()
{
int n1,n2;
printf("Enter the first number");
scanf("%d", &n1);
printf("enter the second number");
scanf("%d", &n2);
printf("The prime numbers are :");
for(int i=n1; i<=n2; i++)
{
int c=0;
for(int j=1; j<=i; j++)
{
    if(i%j==0)
    {
        c++;
    }
}
if(c==2)
printf("%d", i);
}
}
```

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6)

```
#include <stdio.h>
#include <math.h>
#define PI 3.14
int main()
{
float radius, height;
float surface-area, volume;
int option;
while (option != -1){
printf (" == Menu == \n");
printf (" 1. Area of cylinder \n");
printf (" 2. Area of cone \n");
printf (" 3. Area of sphere \n");
printf ("enter the option from menu (-1 to
exit ) \n");
scanf (" %d", &option);
if (option == 1)
  {
printf ("Enter value for radius and height of a
a cylinder : \n");
scanf (" %f %f", &radius, &height );
surface_area = 2*(22/7)* radius *(radius + height);
volume = (22/7)* radius * radius * height;
Printf (" Surface area of cylinder is : %.3f \n", surface_area);
Printf (" In Volume of cylinder is : %.3f \n", volume );
}
else if (option == 2)
{
```

```
printf ("Enter value of radius and height of a
cone :\n");
scanf ("%f%f", &radius, &height);
surface_area = (22/7)* radius *(radius + sqrt(radius
* radius + height * height ));
volume = (1.0/3)* (22/7)* radius * radius * height;
printf (" surface area of cone is : %.3f\n",
  surface_area);
printf ("\n Volume of cone is : %.3f\n"; volume);
} else if (option == 3) {
printf ("\n Please Enter the radius of a sphere\n");
scanf ("%f", &radius);
surface_area = 4* PI * radius * radius;
volume = (4.0/3) * PI * radius * radius * radius;
Printf ("\n The Surface area of a sphere = %.2f\n",
  surface_area);
Printf ("\n The Volume of a sphere = %.2f\n", Volume);
  }
}
return 0;
}
```


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7)

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```
#include <stdio.h>
 int main()
  {
int n, i, e1=0, e2=0, e3=0, x, p, min, l=0;
struct student
 {
 int elec;
 char name [20];
 } ar [100];
printf (" Enter the number of the students \n");
scanf (" %d", &n);
printf (" choice of elective: \n1- IOT, 2- Advanced Java and
 J2EE, 3- Advanced data structures \n")
for (i=0; i<n; i++)
 {
 printf (" entter %d students' name and the choice of
 elective \n", i+1);
scanf (" %s %d", ar[i].name, &ar[i].elec);
if (ar[i].elec == 1)
  e1++;
if (ar[i].elec == 2)
 e2++;
if (ar[i].elec == 3)
 e3++;
 }
if (e1 <= e2 && e1 <= e3)
min = e1;
if (e2 <= e1 && e2 <= e3)
min = e2;
if (e3 <= e2 && e3 <= e1)
 min = e2;
  if (e3 <= e2 && e3 <= e1)
 min = e3;
 printf (" enter the course number \n");
scanf (" %d", &x);
```

Printf ("Names of students who have opted for %d: \n", x);
for (i=0; i<n; i++)
{
if (ar[i].elec == x)
Printf ("%s\n", ar[i].name);
}
Printf ("Total no of students in 1st course is %d\n", e1);
Printf ("Total no of students in 2nd course is %d\n", e2);
Printf ("Total no of students in 3rd course is %d \n", e3);
if (e1<3 && e2>=3 && e3>=3)
{
Printf ("Course 1 will not be floated. Please select from the other 2 courses \n");
p=1;
l=1;
}
if (e2<3 && e1>=3 && e3>=3)
{
Printf ("Course 2 will not be floated. Please select from the other 2 courses \n");
p=2;
l=1;
}
if (e3<3 && e1>=3 && e2>=3)
{
Printf ("Course 3 will not be floated. Please select from the other 2 courses \n");
p=3;
l=1;
}
if (l==0)
{
if (min==e1)
}

```
printf("Please select from course 2 and 3\n");
  p=1;
}
else if(min==c2)
{
printf("Please select from course 1 and 3\n");
p=2;
}
else if(min==c3)
{
printf("Please select from course 1 and 2\n");
  p=3;
}
}
if(p==1)
{
for(i=0;i<n;i++)
{
if(ar[i].elec==1)
  {
printf("Enter a different course. Name: %s\n",ar[i].name);
scanf("%d",&ar[i].elec);
}}}
else if(p==2)
{
for(i=0;i<n;i++)
  {
  if(ar[i].elec==2)
{
printf("Enter a different course. Name: %s\n",ar[i].name);
scanf("%d",&ar[i].elec);
}}}
else if(p==3)
{
for(i=0;i<n;i++)
  {
```

```
if (ar[i].elec == 3)
{
printf("Enter a different course Name: %s\n", ar[i].name);
scanf("%d", &ar[i].dec);
}}}
Printf("Students in 1 elective\n");
for(i=0; i<n; i++)
{
if(ar[i].elec == 1)
printf("%s\n", ar[i].name);
}
printf("Students in 2 elective\n");
for(i=0; i<n; i++)
{
if(ar[i].elec == 2)
printf("%s\n", ar[i].name);
}
printf("students in 3elective\n");
for(i=0; i<n; i++)
{
if(ar[i].elec == 3)
printf("%s\n", ar[i].name);
}
return 0;
}
```