Question 1

In India, the eligibility for voting is 18 years. Write a program that takes age as input and generates the decision whether one is eligible for voting or not. Display the appropriate message. Provide alternate solution using ternary operator.

```c

#include <stdio.h>

int main()
{
   int a;
   printf("Enter the age of the person: ");
   scanf("%d", &a);
   if(a>=18)
   {
       printf("Eligible for voting\n");
   }
   else
   {
       printf("Not eligible for voting\n");
   }

    return 0;
}

```

input

```
Enter the age of the person: 21
Eligible for voting


...Program finished with exit code 0
Press ENTER to exit console.
```

Alternate solution using ternary operator:

```c

#include <stdio.h>

int main() {
    int age;
    printf("Enter the age of the person:");
    scanf("%d",&age);
    (age>17)? printf("eligible"):printf("not eligible");
    return 0;
}

```

input

```
Enter the age of the person:23
eligible

...Program finished with exit code 0
Press ENTER to exit console.
```

Question 2:

Write a program that accepts 2 integers as input and displays the largest integer. Upgrade the program that determines the largest of three numbers. Make sure that if any one of the numbers is negative then the program should abort without finding the largest.

Program for largest of 2 numbers:

```c
int main()
{
    int a,b;
    printf("Input:\n");
    scanf("%d %d",&a,&b);
    if(a<0 || b<0)
    {
        printf("invalid input");
    }
    else if(a>b)
    {
        printf("large=%d",a);
    }
    else printf("large=%d",b);
    return 0;
}
```

input

```
Input:
156
345
large=345

...Program finished with exit code 0
Press ENTER to exit console.
```

```
Input:
253
-34
invalid input

...Program finished with exit code 0
Press ENTER to exit console.
```

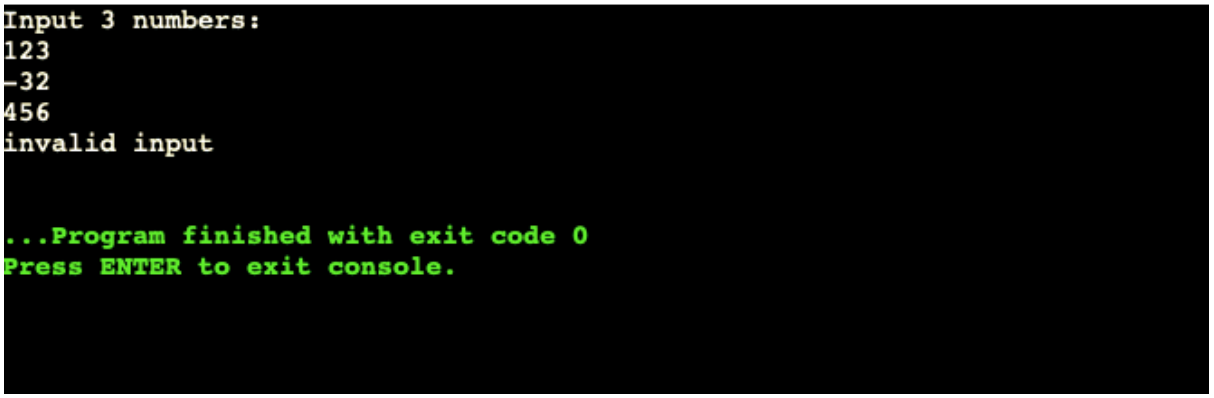
Program for largest of 3 numbers:

main.c

```c
#include <stdio.h>

int main()
{
    int a,b,c;
    printf("Input 3 numbers:\n");
    scanf("%d %d %d",&a,&b,&c);
    if(a<0 || b<0 || c<0) printf("invalid input\n");

    else if(a>b)
    {
        if(a>c)
        {
            printf("%d is the largest number.", a);
        }
        else
        {
            printf("%d is the largest number.", c);
        }
    }
    else
    {
        if(b>c)
        {
            printf("%d is the largest number.", b);
        }
        else
        printf("%d is the largest number.", c);
    }

    return 0;
}
```

```
Input 3 numbers:
254
456
123
456 is the largest number.

...Program finished with exit code 0
Press ENTER to exit console.
```

```
Input 3 numbers:
244
244
244
244 is the largest number.

...Program finished with exit code 0
Press ENTER to exit console.
```



Question 3
Write a program that accepts two integers and simulate a simple calculator. if one of the
operands is “zero”, then print appropriate message while performing division. The operators
to be handled are +, -, *, /, %

```c
#include<stdio.h>
#include<stdlib.h>
void main ()
{
  int op1, op2, res;         // Declaration of variables
  char oper;
  printf ("Enter the operator\n");  // Reading Operator
  scanf ("%c", &oper);
// Reading Two Numbers
  printf ("Enter two operands( Only integers) \n");
  scanf ("%d%d", &op1, &op2);
  switch (oper)
    {
    case '+':
      res = op1 + op2;       // Addition
      break;
    case '-':
      res = op1 - op2;       // Subtraction
      break;
    case '*':
      res = op1 * op2;       // Multiplication
      break;
// Checking for Division by zero error
    case '/':
      if (op2 == 0)
    {
      printf ("Divide by zero error");
      exit (0);      // Program Termination
    }
      else
    res = op1 / op2;
      break;
    default:
      printf ("Not a valid operator");
      exit (0);
    }
  printf ("Result=%d", res);    // Displaying the Result
}
```

```
Enter the operator
/
Enter two operands( Only integers)
4 0
Divide by zero error

...Program finished with exit code 0
Press ENTER to exit console.
```

Question 4
Following is the CET rank cut-off at RNSIT
CSE 3250
ISE 6505
EandC 12012
MEC 22340
Help your friend Mr. Engineer with a rank to know the possibility of getting into a particular
branch.

```c
#include <stdio.h>

int main()
{
    int rank;
    printf("Enter your rank student:");
    scanf("%d",&rank);
    if(rank<3250)
    {
        printf("You can choose all branches");
    }
    else if(rank>3250 && rank<6505)
    {
        printf("You can choose ISE,EC,MEC branches");
    }
    else if(rank>6505 && rank<12012)
    {
        printf("You can choose EC,MEC branches");
    }
    else if(rank>12012 && rank<22340)
    {
        printf("You can choose MEC branch");
    }
    else if(rank>22340)
    {
        printf("You cannot join rns, try other colleges");
    }
    return 0;
}
```

input

```
Enter your rank student:4356
You can choose ISE,EC,MEC branches

...Program finished with exit code 0
Press ENTER to exit console.
```

```
Enter your rank student:1265
You can choose all branches

...Program finished with exit code 0
Press ENTER to exit console.
```

```
Enter your rank student:25000
You cannot join rns, try other colleges

...Program finished with exit code 0
Press ENTER to exit console.
```

Question 5

Now that the colleges are offline, no more online exams!!!! RNSIT to procure blue books from “Paper Mills”. The sales executive quotes ₹ 10 per book. However, for bulk deal he offers the discounts.

The deal is as given below

if number of books <10000 then “no discount”

if number of books >10000 and <15000 then 10% discount

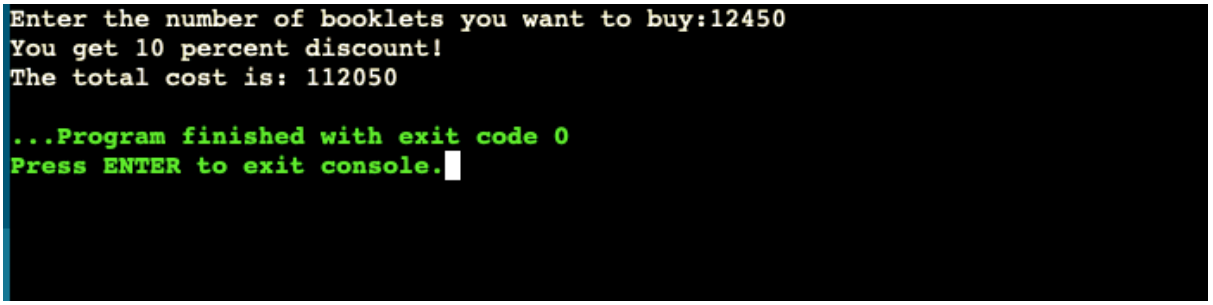
if number of books >15000 and <20000 then 20% discount.

Help the accountant to generate the bill based on the order. Explore all test cases and validate

```c
#include <stdio.h>

int main()
{
    int blue_books, amount;
    printf("Enter the number of booklets you want to buy:");
    scanf("%d", &blue_books);
    amount = blue_books*10;
    if(blue_books<10000)
    {
        printf("You get no discount\n");
        amount += 0;
    }
    else if(blue_books>10000 && blue_books<15000)
    {
        printf("You get 10 percent discount!\n");
        amount -= amount*.1;
    }
    else if(blue_books>15000 && blue_books<20000)
    {
        printf("You get 20 percent discount!\n");
        amount -= amount*.2;
    }
    printf("The total cost is: %d", amount);

    return 0;
}
```

input

```
Enter the number of booklets you want to buy:8245
You get no discount
The total cost is: 82450

...Program finished with exit code 0
Press ENTER to exit console.
```


Enter the number of booklets you want to buy:12450
You get 10 percent discount!
The total cost is: 112050
...Program finished with exit code 0
Press ENTER to exit console.