

Beginner C, C++, Java and Python Exercises

Manjunath.R

#16/1, 8th Main Road, Shivanagar, Rajajinagar, Bangalore560010, Karnataka,

India

*Corresponding Author Email: manjunath5496@gmail.com

*Website: <http://www.myw3schools.com>

Abstract: This article is for all programmers, whether you are a novice or an experienced pro. The beginner will find its carefully paced exercises especially helpful. Of course those who have already familiar with programming are likely to derive more benefits from this article. After reading this article you will find yourself at a moderate level of expertise in C, C++, Java and Python from where you can take yourself to next levels.

Keywords: C, C++, Java, Python, Exercises.

- Educational institutions are teaching it
- Corporate societies are employing it
- Pupils need it
- (Pedagogues desire it... ;)
- (Coders perceive it... :)

- **Beginner C Exercises:**

Question 1

Question:

Write a program to print Hello World!.

Solution:

```
#include<stdio.h>
int main()
{
printf("Hello,world!");
return 0;
}
```

Question 2

Question:

Write a program to find the area of a circle.

Solution:

```
#include<stdio.h>
int main()
{
int r, area;
r = 2;
area = 4 * 3.14 * r * r;
printf("The area of the circle = %d", area);
return 0;
}
```

Question 3

Question:

Write a program to find the sum of two numbers.

Solution:

```
#include<stdio.h>
int main()
{
int a, b, sum;
a=1;
```

```
b=2;  
sum = a + b;  
printf("The sum of a and b = %d", sum);  
return 0;  
}
```

Question 4

Question:

Write a program to find the square of a number.

Solution:

```
#include<stdio.h>  
#include<math.h>  
int main()  
{  
int a, b;  
a=2;  
b = pow((a), 2);  
printf("The square of a = %d", b);  
return 0;  
}
```

Question 5

Question:

Write a program to find the greatest of two numbers.

Solution:

```
#include<stdio.h>  
int main()  
{  
int a, b;  
a = 2;  
b = 3;  
if(a>b)  
{
```

```
printf("a is greater than b");
}
else
{
printf("b is greater than a");
}
return 0;
}
```

Question 6

Question:

Write a program to print the average of the elements in the array.

Solution:

```
#include<stdio.h>
int main()
{
int i, avg, sum = 0;
int num [5] = {16, 18, 20, 25, 36};
for(i=0; i<5; i++)
sum = sum + num [i];
avg = sum/5;
printf("Sum of the Elements in the array = %d", sum);
printf("Average of the elements in the array= %d", avg);
return 0;
}
```

Question 7

Question:

Write a program such that a Switch (case) allows to make a decision from the number of choices, i.e., from the number of cases.

Solution:

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

```
int main()
{
char ch;
printf("Enter any character:");
scanf("%c", &ch);
switch(ch)
{
case 'R':
printf("Red");
break;
case 'W':
printf("White");
break;
case 'Y':
printf("Yellow");
break;
case 'G':
printf("Green");
break;
default:
printf("Error");
break;
}
return 0;
}
```

Question 8

Question:

Write a program to find the greatest of two numbers using pointers.

Solution:

```
#include<stdio.h>
int main()
{
int x, y, *p, *q;
printf("Enter any integer:");
scanf("%d", &x);
printf("Enter any integer:");
scanf("%d", &y);
p = &x;
q = &y;
if(*p>*q)
{
printf("x is greater than y");
}
if(*q>*p)
{
printf("y is greater than x");
}
}
```

```
return 0;  
}
```

Question 9

Question:

Write a program to print the address of x and the value assigned to x.

Solution:

```
#include <stdio.h>  
int main()  
{  
int x, *p;  
x = 1;  
p = &x;  
printf("The address of the variable x =%d", p);  
printf("The value of the variable x =%d", *p);  
return 0;  
}
```

Question 10

Question:

Write a program to print the first 10 numbers starting from one together with their squares and cubes.

Solution:

```
#include<stdio.h>  
int main()  
{  
int i;  
for( i=1; i<=10; i++)  
printf("Number=%d its square=%d its cube=%d\n", i , i*i, i*i*i);  
return 0;  
}
```

Question 11

Question:

Write a program:

If you enter a character M

Output must be: ch = M.

Solution:

```
#include<stdio.h>
int main()
{
char M;
printf("Enter any character:");
scanf("%c", &M);
printf("ch=%c", M);
return 0;
}
```

Question 12

Question:

Write a program to print the multiplication table of a number.

Solution:

```
#include<stdio.h>
int main()
{
int n, i;
printf("Enter any number:");
scanf("%d", &n);
for( i=1; i<=5; i++)
printf("%d * %d = %d\n", n, i, n*i);
return 0;
}
```

Question 13

Question:

Write a program to print the product of the first 10 digits.

Solution:

```
#include<stdio.h>
int main()
{
int i, product = 1;
for( i=1; i<=10; i++)
product = product * i;
printf("The product of the first 10 digits =%d", product);
return 0;
}
```

Question 14

Question:

Write a program to print whether the given number is positive or negative.

Solution:

```
#include<stdio.h>
int main()
{
int a;
a = -35;
if(a>0)
{
printf("Number is positive");
}
else
{
printf("Number entered is negative");
}
return 0;
}
```


Question 15

Question:

Write a program to check the equivalence of two numbers.

Solution:

```
#include<stdio.h>
int main()
{
int x, y;
printf("Enter any number:");
scanf ("%d", &x);
printf("Enter any number:");
scanf ("%d", &y);
if(x-y==0)
{
printf("The two numbers are equivalent");
}
else
{
printf("The two numbers are not equivalent");
}
return 0;
}
```

Question 16

Question:

Write a program to print the remainder of two numbers.

Solution:

```
#include<stdio.h>
int main()
{
int a, b, c;
printf("Enter any number:");
scanf("%d", &a);
```

```
printf("Enter any number:");  
scanf("%d", &b);  
c = a%b;  
printf("The remainder of a and b = %d", c);  
return 0;  
}
```

Question 17

Question:

Write a program to print the given number is even or odd.

Solution:

```
#include<stdio.h>  
int main()  
{  
int a;  
printf("Enter any number:");  
scanf ("%d", &a);  
if(a%2 == 0)  
{  
printf("The number is even");  
}  
else  
{  
printf("The number is odd");  
}  
return 0;  
}
```

Question 18

Question:

Write a program to print the characters from A to Z.

Solution:

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

```
int main()
{
char a;
for( a='A'; a<='Z'; a++)
printf("%c\n", a);
return 0;
}
```

Question 19

Question:

Write a program to find the incremented and decremented values of two numbers.

Solution:

```
#include<stdio.h>
int main()
{
int a, b, c, d, e, f;
a = 10;
b=12;
c=a+1;
d=b+1;
e=a-1;
f=b-1;
printf("The incremented value of a =%d", c);
printf("The incremented value of b =%d", d);
printf("The decremented value of a =%d", e);
printf("The decremented value of b =%d", f);
return 0;
}
```

Question 20

Question:

Write a program to calculate the simple interest.

Solution:

```
#include<stdio.h>
int main()
{
int P,T, R, SI;
P = 1000;
T = 2;
R = 3;
SI = P*T*R/100;
printf("The simple interest = %d", SI);
return 0;
}
```

Question 21

Question:

Write a program to Find the largest of three numbers.

Solution:

```
#include<stdio.h>
int main()
{
int a, b, c;
printf("Enter any number:");
scanf("%d", &a);
printf("Enter any number:");
scanf("%d", &b);
printf("Enter any number:");
scanf("%d", &c);
if(a>b&&a>c)
{
printf("%d is greater than %d and %d", a, b, c);
}
else if (b>a&&b>c)
{
printf("%d is greater than %d and %d", b, a, c);
}
else
{
printf("%d is greater than %d and %d", c, b, a);
}
return 0;
}
```

Question 22

Question:

Write a program to print the factorial of the entered number.

Solution:

```
#include<stdio.h>
int main()
{
int i, n, fact=1 ;
printf("Enter any number:");
scanf("%d", &n);
for(i=1; i<=n; i++)
fact = fact *i;
printf("\n Entered number is: %d", n);
printf("\n The factorial of the entered number %d is: %d", n, fact);
return 0;
}
```

Question 23

Question:

Write a program to print the length of the entered string.

Solution:

```
#include<stdio.h>
#include<string.h>
int main()
{
char ch[4];
printf("Enter any word: ");
scanf("%c", &ch);
printf("The length of the string = %d", strlen(ch));
return 0;
}
```

Question 24

Question:

Write a program to print the ASCII value of the entered character.

Solution:

```
#include<stdio.h>
int main()
{
char ch = 'A';
printf("The ASCII value of ch is: %d", ch);
return 0;
}
```

Question 25

Question:

Write a program to check whether the entered character is a lower case letter or not.

Solution:

```
#include<stdio.h>
int main()
{
char ch = 'a';
if(islower(ch))
printf("you have entered the lower case letter");
else
printf("you have entered the upper case letter");
return 0;
}
```

Question 26

Question:

Write a program to check whether the entered character is a upper case letter or not.

Solution:

```
#include<stdio.h>
int main()
{
char ch = 'a';
if(isupper(ch))
printf("you have entered the upper case letter");
else
printf("you have entered the lower case letter");
return 0;
}
```

Question 27

Question:

Write a program to convert the lower case letter to upper case letter.

Solution:

```
#include<stdio.h>
int main()
{
char ch = 'a';
char b = toupper(ch);
printf("lower case letter %c is converted to upper case letter %c", ch, b);
return 0;
}
```

Question 28

Question:

Write a program to print the output:

Einstein [0] = E

Einstein [1] = I

Einstein [2] = N

Einstein [3] = S

Einstein [4] = T

Einstein [5] = E

Einstein [6] = I

Einstein [7] = N

Solution:

```
#include<stdio.h>
int main()
{
int i;
char name [8] = {' E' , ' I', ' N', ' S', ' T ', ' E', ' I', ' N'};
for(i=0; i<8; i++)
printf("\n Element [%d] = %c", i, name[i]);
return 0;
}
```

Question 29

Question:

Write a program to print the output:

Name of the book = B

Price of the book = 135.00

Number of pages = 300

Edition = 8

using structures.

Solution:

```
#include<stdio.h>
int main()
{
struct book {
char name;
float price;
int pages;
int edition;
};
struct book b1;
b1.name = 'B';
b1.price = 135.00;
b1.pages = 300;
b1.edition = 8;
printf("\n Name of the book = %c", b1.name);
}
```



```
printf("\n Price of the book = %f", b1.price);  
printf("\n Number of pages = %d", b1.pages);  
printf("\n Edition of the book = %d", b1.edition);  
return 0;  
}
```

Question 30

Question:

Write a program to find square of a number using functions.

Solution:

```
#include<stdio.h>  
int square();  
int main()  
{  
int answer;  
answer = square();  
printf("Square of the given number=%d", answer);  
return(0);  
}  
int square()  
{  
int x;  
printf("Enter any integer:");  
scanf("%d", &x);  
return x*x;  
}
```

Question 31

Question:

Write a program To print "hello world" 10 times.

Solution:

```
#include<stdio.h>  
int main()
```

```
{  
int i;  
for (i =1; i<=10; i ++)  
printf("hello world \n");  
return 0;  
}
```

Question 32

Question:

Write a program to print first 5 numbers using do while loop statement.

Solution:

```
#include<stdio.h>  
int main()  
{  
int i =1;  
do  
{  
printf("%d\n", i++);  
} while (i<=5);  
return 0;  
}
```

Question 33

Question:

Write a program to print the output:

*body [b] = b
body [o] = o
body [d] = d
body [y] = y*

Solution:

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

```
int main()
{
char i;
char body [4] = {'b', 'o', 'd', 'y'};
for(i=0; i<4; i++)
printf("\n body[%c] = %c", body[i] , body[i]);
return 0;
}
```

Question 34

Question:

What will be the output of the below program:

```
#include<stdio.h>
#include<stdlib.h>
int main () {
printf("linux\n");
exit (0);
printf("php\n");
return 0;
}
```

Solution:

linux

Question 35

Question:

Write a program to check whether a character is an alphabet or not.

Solution:

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

```
#include <ctype.h>
int main()
{
int a =2;
if(isalpha(a))
{
printf("The character a is an alphabet");
}
else
{
printf("The character a is not an alphabet");
}
return 0;
}
```

Question 36

Question:

Write a program to calculate the discounted price and the total price after discount

Given:

If purchase value is greater than 1000, 10% discount

If purchase value is greater than 5000, 20% discount

If purchase value is greater than 10000, 30% discount.

Solution:

```
#include<stdio.h>
int main()
{
double PV;
printf("Enter purchased value:");
scanf("%lf", &PV);
if(PV>1000)
{
printf("\n Discount=%lf", PV* 0.1);
printf("\n Total=%lf", PV - PV* 0.1);
}
else if(PV>5000)
{
printf("\n Discount =%lf", PV* 0.2);
printf("\n Total=%lf", PV - PV* 0.1);
}
else
{
printf("\n Discount=%lf", PV* 0.3);
printf("\n Total=%lf", PV - PV* 0.1);
}
return 0;
}
```

Question 37

Question:

Write a program to print the first ten natural numbers using while loop statement.

Solution:

```
#include<stdio.h>
int main()
{
int i = 1;
while (i<=10)
{
printf("%d\n", i++);
}
return 0;
}
```

Question 38

Question:

What will be the output of the below program:

```
#include <stdio.h>
int main()
{
int i;
for (i=1; i<=5; i++)
{
if (i==3)
{
continue;
}
printf("%d\n ", i);
}
return 0;
}
```

Solution:

```
1  
2  
4  
5
```

Question 39

Question:

Write a program to find the size of an array.

Solution:

```
#include <stdio.h>  
int main()  
{  
    int num [] = {11, 22, 33, 44, 55, 66};  
    int n;  
  
    /* Calculating the size of the array with this formula.  
     * n = sizeof(array_name) / sizeof(array_name[0])  
     * This is a universal formula to find number of elements in  
     * an array, which means it will work for arrays of all data  
     * types such as int, char, float etc.  
     */  
    n = sizeof(num) / sizeof(num [0]);  
    printf("Size of the array is: %d\n", n);  
    return 0;  
}
```

Question 40

Question:

What would be the output of the following programs:

```
#include <stdio.h>
int main()
{
int i;
for (i=1; i<=5; i++)
{
if (i==3)
{
break;
}
printf("%d\n", i);
}
return 0;
}
```

Solution:

```
1
2
```

```
#include <stdio.h>
int main()
{
int i;
for(i=1;i<=5;i++)
{
if(i==3)
{
goto HAI;
}
printf("\n %d ",i);
}
HAI : printf("\n Linux");
}
```

Solution:

```
1
2
Linux
```

```
#include<stdio.h>
int main()
{
int i = 54;
int y = i<<1;
printf("The value of y = %d", y);
return 0;
}
```

Solution:

The value of y = 108

```
#include<stdio.h>
int main()
{
int i = 54;
int y = i>>1;
printf("The value of y = %d", y);
return 0;
}
```

Solution:

The value of y = 27

```
#include<stdio.h>
#include <stdlib.h>
int main()
{
int a, b;
a= - 2;
b= abs(a);
printf("Absolute value = %d", b);
return 0;
}
```

Solution:

Absolute value = 2

```
#include <stdio.h>
int main()
{
for( ; ; )
{
printf("This loop will run forever.\n");
}
return 0;
}
```


Solution:

```
This loop will run forever.  
This loop will run forever.  
This loop will run forever.  
This loop will run forever.  
This loop will run forever.  
This loop will run forever. ....
```

```
#include<stdio.h>  
int main()  
{  
printf("Hello,world!");  
return 0;  
printf("Hello,world!");  
}
```

Solution:

```
Hello,world!
```

Question 41

Question:

Write a program to check whether the person is a senior citizen or not.

Solution:

```
#include<stdio.h>  
int main()  
{  
int age;  
printf("Enter age:");  
scanf("%d", &age);  
if(age>=60)  
{  
printf("senior citizen");  
}  
else  
{  
printf("not a senior citizen");  
}}
```

```
}  
return 0;  
}
```

- C++ Exercises for Beginners

Question 1

Question:

Write a program to print Hello World!

Solution:

```
#include<iostream>  
int main()  
{  
std::cout<<"Hello World!";  
return 0;  
}
```

Solution:

```
#include<iostream>  
using namespace std;  
int main()  
{  
cout<<"Hello World!";  
return 0;  
}
```

Question 2

Question:

Write a program to find the area of a circle.

Solution:

```
#include<iostream>
using namespace std;
int main()
{
float r, area;
cout<<"Enter any number:";
cin>>r;
area = 4 * 3.14 * r * r;
cout<<"The area of the circle = "<< area;
return 0;
}
```

Question 3

Question:

Write a program to find the sum of two numbers.

Solution:

```
#include<iostream>
using namespace std;
int main()
{
float a, b, sum;
cout<<"Enter any two numbers:";
cin>>a;
cin>>b;
sum = a+ b;
cout<<"The sum of a and b = "<< sum;
return 0;
}
```

Question 4

Question:

Write a program to find the square of a number.

Solution:

```
#include<iostream>
using namespace std;
int main()
{
int a, b;
a=2;
b = a * a;
cout<<"The square of a = "<< b;
return 0;
}
```

Question 5

Question:

Write a program to find the greatest of two numbers.

Solution:

```
#include<iostream>
using namespace std;
int main()
{
int a, b;
a = 2;
b = 3;
if(a>b)
{
cout<<"a is greater than b";
}
else
{
cout<<"b is greater than a";
}
return 0;
}
```

Question 6

Question:

Write a program to print the average of the elements in the array.

Solution:

```
#include<iostream>
using namespace std;
int main()
{
int i, avg, sum = 0;
int num [5] = {16, 18, 20, 25, 36};
for(i=0; i<5; i++)
sum = sum + num [i];
avg = sum/5;
cout<<"Sum of the Elements in the array = "<< sum <<endl;
cout<<"Average of the elements in the array= "<< avg<<endl;
return 0;
}
```

Question 7

Question:

Write a program such that a Switch (case) allows to make a decision from the number of choices, i.e., from the number of cases.

Solution:

```
#include<iostream>
using namespace std;
int main()
{
char ch;
cout<<"Enter any character:";
cin>>ch;
switch(ch)
{
case 'R':
cout<<"Red";
break;
case 'W':
cout<<"White";
break;
case 'Y':
cout<<"Yellow";
break;
}
```

```
case 'G':  
    cout<<"Green";  
    break;  
default:  
    cout<<"Error";  
    break;  
}  
return 0;  
}
```

Question 8

Question:

Write a program to find the greatest of two numbers using pointers.

Solution:

```
#include<iostream>  
using namespace std;  
int main()  
{  
    int x, y, *p, *q;  
    cout<<"Enter any integer:";  
    cin>> x;  
    cout<<"Enter any integer:";  
    cin>> y;  
    p = &x;  
    q = &y;  
    if(*p>*q)  
    {  
        cout<<"x is greater than y";  
    }  
    else  
    {  
        cout<<"y is greater than x";  
    }  
    return 0;  
}
```

Question 9

Question:

Write a program to print the address of x and the value assigned to x .

Solution:

```
#include<iostream>
using namespace std;
int main()
{
    int x, *p;
    cout<<"Enter any integer:";
    cin>>x;
    p = &x;
    cout<<"The address of the variable x = "<< p<<endl;
    cout<<"The value of the variable x = "<< *p<<endl;
    return 0;
}
```

Question 10

Question:

Write a program to print the first 10 numbers starting from one together with their squares and cubes.

Solution:

```
#include<iostream>
using namespace std;
int main()
{
    int i;
    for( i=1; i<=10; i++)
    cout<<"number = "<< i <<" its square = "<< i*i <<" its cube = "<< i*i*i<< endl;
    return 0;
}
```

Question 11

Question:

Write a program:

If you enter a character *M*

Output must be: *ch = M*.

Solution:

```
#include<iostream>
using namespace std;
int main()
{
    char M;
    cout<<"Enter any character:";
    cin>>M;
    cout<<"ch= "<< M;
    return 0;
}
```

Question 12

Question:

Write a program to print the multiplication table of a number.

Solution:

```
#include<iostream>
using namespace std;
int main()
{
    int n, i;
    cout<<"Enter any number:";
    cin>>n;
    for( i=1; i<=5; i++)
    cout<< n <<" * "<< i <<" = "<< n*i <<endl;
    return 0;
}
```

Question 13

Question:

Write a program to print the product of the first 10 digits.

Solution:

```
#include<iostream>
using namespace std;
int main()
{
    int i, product = 1;
    for( i=1; i<=10; i++)
        product = product * i;
    cout<<"The product of the first 10 digits = " << product;
    return 0;
}
```

Question 14

Question:

Write a program to print whether the given number is positive or negative.

Solution:

```
#include<iostream>
using namespace std;
int main()
{
    int a;
    a = -35;
    if(a>0)
    {
        cout<<"Number is positive";
    }
    else
    {
        cout<<"Number entered is negative";
    }
    return 0;
}
```

Question 15

Question:

Write a program to check the equivalence of two numbers.

Solution:

```
#include<iostream>
using namespace std;
int main()
{
int x, y;
cout<<"Enter any number:";
cin>>x;
cout<<"Enter any number:";
cin>>y;
if(x-y==0)
{
cout<<"The two numbers are equivalent";
}
else
{
cout<<"The two numbers are not equivalent";
}
return 0;
}
```

Question 16

Question:

Write a program to print the remainder of two numbers.

Solution:

```
#include<iostream>
using namespace std;
int main()
{
int a, b, c;
cout<<"Enter any number:";
cin>>a;
cout<<"Enter any number:";
cin>>b;
c = a % b;
cout<<"The remainder of a and b = "<< c;
return 0;
}
```

Question 17

Question:

Write a program to print the given number is even or odd.

Solution:

```
#include<iostream>
using namespace std;
int main()
{
    int a;
    cout<<"Enter any number:";
    cin>>a;
    if(a%2 == 0)
    {
        cout<<"The number is even";
    }
    else
    {
        cout<<"The number is odd";
    }
    return 0;
}
```

Question 18

Question:

Write a program to print the characters from A to Z.

Solution:

```
#include<iostream>
using namespace std;
int main()
{
    char a = 'A';
    while (a<='Z')
    {
```

```
cout<<" \n"<< a++;  
}  
return 0;  
}
```

Question 19

Question:

Write a program to find the incremented and decremented values of two numbers.

Solution:

```
#include<iostream>  
using namespace std;  
int main()  
{  
int a, b, c, d, e, f;  
a = 10;  
b=12;  
c=a+1;  
d=b+1;  
e=a-1;  
f=b-1;  
cout<<"The incremented value of a = "<< c << endl;  
cout<<"The incremented value of b = "<< d << endl;  
cout<<"The decremented value of a = "<< e << endl;  
cout<<"The decremented value of b = "<< f << endl;  
return 0;  
}
```

Question 20

Question:

Write a program to calculate the simple interest.

Solution:

```
#include<iostream>  
using namespace std;
```

```
int main()
{
int P,T, R, SI;
cout<<"Enter principal amount:";
cin>>P;
cout<<"Enter time:";
cin>>T;
cout<<"Enter rate of interest:";
cin>>R;
SI = P*T*R/100;
cout<<"the simple interest = "<<SI;
return 0;
}
```

Question 21

Question:

Write a program to Find the largest of three numbers.

Solution:

```
#include<iostream>
using namespace std;
int main()
{
int a, b, c;
cout<<"Enter any number:";
cin>>a;
cout<<"Enter any number:";
cin>>b;
cout<<"Enter any number:";
cin>>c;
if(a>b&&a>c)
{
cout<< a<<" is greater than "<< b<<" and "<<c;
}
else if (b>a&&b>c)
{
cout<< b<<" is greater than "<< a <<" and "<<c;
}
else
{
cout<< c<<" is greater than "<< b<<" and "<< a;
}
return 0;
}
```

Question 22

Question:

Write a program to print the factorial of the entered number.

Solution:

```
#include<iostream>
using namespace std;
int main()
{
    int i, n, fact=1 ;
    cout<<"Enter any number:";
    cin>>n;
    for(i=1; i<=n; i++)
        fact = fact *i;
    cout<<"\n Entered number is: "<< n;
    cout<<"\n The factorial of the entered number "<< n <<" is: "<< fact;
    return 0;
}
```

Question 23

Question:

Write a program to print the length of the entered string.

Solution:

```
#include<iostream>
#include<string.h>
using namespace std;
int main()
{
    char ch[4];
    cout<<"Enter any word: ";
    cin>>ch;
    cout<<"The length of the string = "<< strlen(ch);
    return 0;
}
```

Question 24

Question:

Write a program to print the ASCII value of the entered character.

Solution:

```
#include <iostream>
using namespace std;
int main()
{
    char c;
    cout << "Enter a character: ";
    cin >> c;
    cout << "ASCII Value of " << c << " is " << int(c);
    return 0;
}
```

Question 25

Question:

Write a program to check whether the entered character is a lower case letter or not.

Solution:

```
#include<iostream>
using namespace std;
int main()
{
    char ch = 'a';
    if(islower(ch))
    cout<<"you have entered the lower case letter";
    else
    cout<<"you have entered the upper case letter";
    return 0;
}
```

Question 26

Question:

Write a program to check whether the entered character is a upper case letter or not.

Solution:

```
#include<iostream>
using namespace std;
int main()
{
    char ch = 'a';
    if(isupper(ch))
        cout<<"you have entered the upper case letter";
    else
        cout<<"you have entered the lower case letter";
    return 0;
}
```

Question 27

Question:

Write a program to convert the lower case letter to upper case letter.

Solution:

```
#include<iostream>
using namespace std;
int main()
{
    char ch = 'a';
    char b = toupper(ch);
    cout<<" lower case letter "<<ch<<" is converted to upper case letter "<<b;
    return 0;
}
```

Question 28

Question:

Write a program to print the output:

Einstein [0] = E

Einstein [1] = I

Einstein [2] = N

Einstein [3] = S

Einstein [4] = T

Einstein [5] = E

Einstein [6] = I

Einstein [7] = N

Solution:

```
#include<iostream>
using namespace std;
int main()
{
    int i;
    char name [8] = {'E' , 'I' , 'N' , 'S' , 'T' , 'E' , 'I' , 'N'};
    for(i=0; i<8; i++)
    cout<<"Element [ "<< i <<" ] = "<< name[i] << endl;
    return 0;
}
```

Question 29

Question:

Write a program to print the output:

Name of the book = B

Price of the book = 135.00

Number of pages = 300

Edition = 8

using structures.

Solution:

```
#include<iostream>
using namespace std;
int main()
{
    struct book {
        char name;
        float price;
        int pages;
        int edition;
    };
    struct book b1= {'B', 135.00, 300, 8};
    cout<<"Name of the book = "<< b1.name<< endl;
    cout<<"Price of the book = "<< b1.price<<endl;
    cout<<"Number of pages = "<< b1.pages<<endl;
    cout<<"Edition of the book = "<< b1.edition<< endl;
    return 0;
}
```

Question 30

Question:

Write a program to find square of a number using functions.

Solution:

```
#include<iostream>
using namespace std;
int square();
int main()
{
    int answer;
    answer = square();
    cout<<"Square of the given number = "<< answer;
    return 0;
}
int square()
{
    int x;
    cout<<"Enter any integer:";
    cin>>x;
    return x*x;
}
```

Question 31

Question:

Write a program To print "hello world" 10 times.

Solution:

```
#include<iostream>
using namespace std;
int main()
{
int i;
for (i =1; i<=10; i ++)
cout<<"\n hello world";
return 0;
}
```

Question 32

Question:

Write a program to print first 5 numbers using do while loop statement.

Solution:

```
#include<iostream>
using namespace std;
int main()
{
int i =1;
do
{
cout<<" \n i= "<< i++;
} while (i<=5);
return 0;
}
```

Question 33

Question:

Write a program to print the output:

body [b] = b

body [o] = o

body [d] = d

body [y] = y

Solution:

```
#include <iostream>
using namespace std;
int main()
{
char i;
char body [4] = {'b', 'o', 'd', 'y'};
for(i=0; i<4; i++)
cout<<"\n body ["<<body[i] <<" ] = "<< body[i] << endl;
return 0;
}
```

Question 34

Question:

What will be the output of the below program:

```
#include <iostream>
using namespace std;
int main()
{
cout<<"linux\n";
exit (0);
cout<<"php\n";
return 0;
}
```

Solution:

linux

Question 35

Question:

Write a program to check whether a character is an alphabet or not.

Solution:

```
#include <iostream>
using namespace std;
int main()
{
    int a =2;
    if(isalpha(a))
    {
        cout<<"The character a is an alphabet";
    }
    else
    {
        cout<<"The character a is not an alphabet";
    }
    return 0;
}
```

Question 36

Question:

Write a program to calculate the discounted price and the total price after discount

Given:

If purchase value is greater than 1000, 10% discount

If purchase value is greater than 5000, 20% discount

If purchase value is greater than 10000, 30% discount.

Solution:

```
#include<iostream>
using namespace std;
int main()
{
    double PV;
    cout<<"Enter purchased value:";
    cin>>PV;
```

```
if(PV>1000)
{
cout<<"Discount = "<< PV* 0.1 << endl;
cout<<"Total= "<< PV - PV* 0.1 << endl;
}
else if(PV>5000)
{
cout<<"Discount = "<< PV* 0.2 << endl;
cout<<"Total= "<< PV - PV* 0.1 << endl;
}
else
{
cout<<"Discount = "<< PV* 0.3 << endl;
cout<<"Total= "<< PV - PV* 0.1 << endl;
}
return 0;
}
```

Question 37

Question:

Write a program to print the first ten natural numbers using while loop statement.

Solution:

```
#include<iostream>
using namespace std;
int main()
{
int i = 1;
while (i<=10)
{
cout<<"\n "<< i++;
}
return 0;
}
```

Question 38

Question:

What will be the output of the below program:

```
#include <iostream>
using namespace std;
int main()
{
    int i;
    for (i=1; i<=5; i++)
    {
        if (i==3)
        {
            continue;
        }
        cout<<"\n "<< i;
    }
    return 0;
}
```

Solution:

```
1
2
4
5
```

Question 39

Question:

Write a program to find the size of an array.

Solution:

```
#include <iostream>
using namespace std;
int main()
{
    int num [] = {11, 22, 33, 44, 55, 66};
    int n;

    /* Calculating the size of the array with this formula.
    * n = sizeof(array_name) / sizeof(array_name[0])
    * This is a universal formula to find number of elements in
    * an array, which means it will work for arrays of all data
    * types such as int, char, float etc.
    */
    n = sizeof(num) / sizeof(num [0]);
    cout<<"Size of the array is:"<<n;
}
```

```
    return 0;  
}
```

Question 40

Question:

What would be the output of the following programs:

```
#include <iostream>  
using namespace std;  
int main()  
{  
    int i;  
    for (i=1; i<=5; i++)  
    {  
        if (i==3)  
        {  
            break;  
        }  
        cout<<"\n "<< i;  
    }  
    return 0;  
}
```

Solution:

```
1  
2
```

```
#include<iostream>  
using namespace std;  
int main()  
{  
    int i;  
    for(i=1;i<=5;i++)  
    {  
        if(i==3)  
        {  
            goto HAI;  
        }  
        cout<<"\n "<< i;  
    }  
    HAI : cout<<"\n Linux";  
}
```


Solution:

```
1  
2  
Linux
```

```
#include<iostream>  
using namespace std;  
int main()  
{  
int i = 54;  
int y = i<<1;  
cout<<"The value of y = "<< y;  
return 0;  
}
```

Solution:

The value of y = 108

```
#include<iostream>  
using namespace std;  
int main()  
{  
int i = 54;  
int y = i>>1;  
cout<<"The value of y = "<< y;  
return 0;  
}
```

Solution:

The value of y = 27

```
#include<iostream>  
#include<cmath>  
using namespace std;  
int main()  
{  
int a, b;  
a= - 2;  
b= abs(a);  
cout<<" Absolute value = "<< b<< endl;
```

```
return 0;  
}
```

Solution:

```
Absolute value = 2
```

```
#include <iostream>  
using namespace std;  
int main()  
{  
for( ; ; ) {  
cout<<"This loop will run forever.\n";  
}  
return 0;  
}
```

Solution:

```
This loop will run forever.  
This loop will run forever.  
This loop will run forever.  
This loop will run forever.  
This loop will run forever.  
This loop will run forever. ....
```

```
#include<iostream>  
using namespace std;  
int main()  
{  
cout<<"Hello World!";  
return 0;  
cout<<"Hello World!";  
}
```

Solution:

```
Hello,world!
```

Question 41

Question:

Write a program to check whether the person is a senior citizen or not.

Solution:

```
#include<iostream>
using namespace std;
int main()
{
int age;
age=20;
if(age > = 60)
{
cout<<"Senior citizen";
}
if(age<60)
{
cout<<"Not a senior citizen";
}
return 0;
}
```

Question 42

Question:

Write a program to compute inverse of tan x.

Solution:

```
#include<iostream>
#include<math.h>
using namespace std;
int main()
{
int x = 20;
cout<<"Inverse of tan x = "<< atan(x);
return 0;
}
```

- **Beginner Java Exercises:**

Question 1

Question:

Write a program to print Hello World!

Solution:

```
public class MyClass {
public static void main(String [] args) {
System.out.println("Hello, World!");
}
}
```

Question 2

Question:

Write a program to find the area of a circle.

Solution:

```
public class MyClass {
public static void main (String [] args) {
int r, area;
r = 2;
area = 4 * 3.14 * r * r;
System.out.println("The area of the circle = " + area);
}
}
```

Question 3

Question:

Write a program to find the sum of two numbers.

Solution:

```
public class MyClass {  
public static void main(String [] args) {  
int a, b, sum;  
a=1;  
b=2;  
sum = a + b;  
System.out.println("The sum of a and b = " + sum);  
}  
}
```

Question 4

Question:

Write a program to find the square of a number.

Solution:

```
public class MyClass {  
public static void main(String [] args) {  
int a, b;  
a=2;  
b = a * a;  
System.out.println("The square of a = " + b);  
}  
}
```

Question 5

Question:

Write a program to find the greatest of two numbers.

Solution:

```
public class MyClass {
public static void main(String [] args) {
int a, b;
a=2;
b =3;
if(a>b)
{
System.out.println("a is greater than b");
}
else
{
System.out.println("b is greater than a");
}
}
}
```

Question 6

Question:

Write a program to print the average of the elements in the array.

Solution:

```
public class MyClass {
public static void main(String[] args) {
int i, avg, sum = 0;
int [] num = {16, 18, 20, 25, 36};
for(i=0; i<5; i++)
sum = sum + num[i];
avg = sum/5;
System.out.println("Sum of the Elements in the array = " + sum);
System.out.println("Average of the Elements in the array = " + avg);
}
}
```

Question 7

Question:

Write a program such that a Switch (case) allows to make a decision from the number of choices, i.e., from the number of cases.

Solution:

```
public class MyClass {
public static void main(String[] args) throws Exception {
char ch;
System.out.print("Enter a character:");
ch = (char)System.in.read();
switch(ch)
{
case 'R':
System.out.print("Red");
break;
case 'W':
System.out.print("White");
break;
case 'Y':
System.out.print("Yellow");
break;
case 'G':
System.out.print("Green");
break;
default:
System.out.print("Error");
break;
}
}
}
```

Question 8

Question:

Write a program to read 10 numbers from the keyboard and find their sum and average.

Solution:

```
import java.util.Scanner;
public class MyClass {
public static void main(String [] args) {
int N1, N2, N3, N4, N5, N6, N7, N8, N9, N10, sum;
float X;
Scanner scan = new Scanner(System.in);
System.out.println("Enter any ten Numbers: ");
N1 = scan.nextInt();
N2 = scan.nextInt();
N3 = scan.nextInt();
N4 = scan.nextInt();
N5 = scan.nextInt();
N6 = scan.nextInt();
```

```
N7 = scan.nextInt();
N8 = scan.nextInt();
N9 = scan.nextInt();
N10 = scan.nextInt();
sum = N1 + N2 + N3 + N4 + N5 + N6 + N7 + N8 + N9 + N10;
X = sum /10;
System.out.println("The sum of 10 numbers = " + sum);
System.out.println("The average of 10 numbers = " + X);
}
}
```

Question 9

Question:

Write a program to print the first 10 numbers starting from one together with their squares and cubes.

Solution:

```
public class MyClass {
public static void main(String[] args) throws Exception {
int i;
for( i=1; i<=10; i++)
System.out.println(" \n number = " + i + " its square = " + i*i + " its cube = " + i*i*i);
}
}
```

Question 10

Question:

*Write a program:
If you enter a character M
Output must be: ch = M.*

Solution:

```
public class MyClass {
public static void main(String[] args) throws Exception {
```



```
char c;  
System.out.print("Enter a character:");  
c = (char)System.in.read();  
System.out.println("ch= " + c);  
}  
}
```

Question 11

Question:

Write a program to print the multiplication table of a number.

Solution:

```
import java.util.Scanner;  
public class MyClass {  
    public static void main(String [] args) {  
        int n, i;  
        Scanner scan = new Scanner(System.in);  
        System.out.println("Enter a number: ");  
        n = scan.nextInt();  
        for( i=1; i<=5; i++)  
            System.out.println(n + " * " + i + " = " + n * i);  
    }  
}
```

Question 12

Question:

Write a program to print the product of the first 10 digits.

Solution:

```
public class MyClass {  
    public static void main(String [] args) {  
        int i, product = 1;  
        for( i=1; i<=10; i++)  
            product = product * i;  
        System.out.println("The product of the first 10 digits = " + product);  
    }  
}
```

```
}  
}
```

Question 13

Question:

Write a program to print whether the given number is positive or negative.

Solution:

```
public class MyClass {  
    public static void main(String [] args) {  
        int a;  
        a = -35;  
        if(a>0)  
        {  
            System.out.println("Number is positive");  
        }  
        else  
        {  
            System.out.println("Number entered is negative");  
        }  
    }  
}
```

Question 14

Question:

Write a program to check the equivalence of two numbers.

Solution:

```
import java.util.Scanner;  
public class MyClass {  
    public static void main(String [] args) {  
        int x, y;  
        Scanner scan = new Scanner(System.in);  
        System.out.println("Enter a number: ");  
        x = scan.nextInt();
```

```
System.out.println("Enter a number: ");
y = scan.nextInt();
if(x-y==0)
{
System.out.println("The two numbers are equivalent");
}
else
{
System.out.println("The two numbers are not equivalent");
}
}
}
```

Question 15

Question:

Write a program to print the remainder of two numbers.

Solution:

```
import java.util.Scanner;
public class MyClass {
public static void main(String [] args) {
int a, b, c;
Scanner scan = new Scanner(System.in);
System.out.println("Enter a number: ");
a = scan.nextInt();
System.out.println("Enter a number: ");
b = scan.nextInt();
c = a%b;
System.out.println("The remainder of a and b = " + c);
}
}
```

Question 16

Question:

Write a program to print the given number is even or odd.

Solution:

```
import java.util.Scanner;
public class MyClass {
public static void main(String [] args) {
int a;
Scanner scan = new Scanner(System.in);
System.out.println("Enter a number: ");
a = scan.nextInt();
if(a%2 == 0)
{
System.out.println("The number is even");
}
else
{
System.out.println("The number is odd");
}
}
}
```

Question 17

Question:

Write a program to print the characters from A to Z.

Solution:

```
public class MyClass {
public static void main(String [] args) {
char a;
for( a='A'; a<='Z'; a++)
System.out.println("\n " + a);
}
}
```

Question 18

Question:

Write a program to find the incremented and decremented values of two numbers.

Solution:

```
public class MyClass {
public static void main(String [] args) {
int a, b, c, d, e, f;
a = 10;
b=12;
c=a+1;
d=b+1;
e=a-1;
f=b-1;
System.out.print("The incremented value of a = "+ c);
System.out.print("The incremented value of b = "+ d);
System.out.print("The decremented value of a = "+ e);
System.out.print("The decremented value of b = "+ f);
}
}
```

Question 19

Question:

Write a program to calculate the simple interest.

Solution:

```
public class MyClass {
public static void main(String [] args) {
int P,T, R, SI;
P = 1000;
T = 2;
R = 3;
SI = P*T*R/100;
System.out.println("The simple interest = " + SI);
}
}
```

Question 20

Question:

Write a program to Find the largest of three numbers.

Solution:

```
import java.util.Scanner;
public class MyClass {
public static void main(String [] args) {
int a, b, c;
Scanner scan = new Scanner(System.in);
System.out.println("Enter any number:");
a = scan.nextInt();
System.out.println("Enter any number:");
b = scan.nextInt();
System.out.println("Enter any number:");
c = scan.nextInt();
if(a>b&&a>c)
{
System.out.println("a is greater than b and c");
}
else if(b>a&&b>c)
{
System.out.println("b is greater than a and c");
}
else
{
System.out.println("c is greater than b and a");
}
}
}
```

Question 21

Question:

Write a program to print the factorial of the entered number.

Solution:

```
import java.util.Scanner;
public class MyClass {
public static void main(String []args){
int i, n, fact=1 ;
Scanner scan = new Scanner(System.in);
System.out.println("Enter any number:");
n = scan.nextInt();
for(i = 1; i <= n; i++)
{
fact = fact * i;
}
System.out.println("Factorial of " + n + " is: " + fact);
}
}
```

Question 22

Question:

Write a program to print the length of the entered string.

Solution:

```
import java.util.Scanner;
public class MyClass {
public static void main(String[] args) {
String a;
Scanner scan = new Scanner(System.in);
System.out.print("Enter Your Name : ");
    a = scan.nextLine();
System.out.println("The length of the String is: " + a.length());
}
}
```

Question 23

Question:

Write a program to print the output:

Einstein [0] = E

Einstein [1] = I

Einstein [2] = N

Einstein [3] = S

Einstein [4] = T

Einstein [5] = E

Einstein [6] = I

Einstein [7] = N

Solution:

```
public class MyClass {
```

```
public static void main(String[] args) throws Exception{
int i;
char [] num = {'E' , 'I', 'N', 'S', 'T', 'E', 'I', 'N'};
for(i=0; i<8; i++)
System.out.println("Einstein [" + i + " ] = " + num[i]);
}
}
```

Question 24

Question:

Write a program to find square of a number using method.

Solution:

```
import java.util.Scanner;
public class MyClass {
public static void main(String[] args) {
int x;
Scanner scan = new Scanner(System.in);
System.out.println("Enter any number: ");
x = scan.nextInt();
System.out.println("Square of the number = " + square (x));
}
public static int square (int x){
return x*x;
}
}
```

Question 25

Question:

Write a program To print "hello world" 10 times.

Solution:

```
public class MyClass {
public static void main(String [] args) {
int i;
```



```
for (i =1; i<=10; i ++)  
System.out.println("\n hello world");  
}  
}
```

Question 26

Question:

Write a program to print first 5 numbers using do while loop statement.

Solution:

```
public class MyClass {  
public static void main(String [] args) {  
int i =1;  
do  
{  
System.out.println(" \n " + i++);  
} while (i<=5);  
}  
}
```

Question 27

Question:

Write a program to print the output:

body [b] = b

body [o] = o

body [d] = d

body [y] = y

Solution:

```
public class MyClass {  
public static void main(String[] args) throws Exception{  
int i;  
char [] body = {'b', 'o', 'd', 'y'};
```

```
for(i=0; i<4; i++)  
System.out.println("body [" + body [i] + " ] = " + body [i]);  
}  
}
```

Question 28

Question:

Write a program to print the first ten natural numbers using while loop statement.

Solution:

```
public class MyClass {  
public static void main(String [] args) {  
int i = 1;  
while (i<=10)  
{  
System.out.println("\n " + i++);  
}  
}  
}
```

Question 29

Question:

What will be the output of the below program:

```
public class MyClass {  
public static void main(String []args) {  
int i;  
for (i=1; i<=5; i++) {  
if (i==3) {  
continue;  
}  
System.out.println(" " + i);  
}  
}  
}
```

Solution:

```
1  
2  
4  
5
```

Question 30

Question:

Write a program to find the size of an array.

Solution:

```
public class MyClass {  
    public static void main(String[] args) {  
        int num [] = {11, 22, 33, 44, 55, 66};  
        System.out.println("Size of the array is: " + num.length);  
    }  
}
```

Question 31

Question:

What would be the output of the following programs:

```
public class MyClass {  
    public static void main(String []args) {  
        int i;  
        for (i=1; i<=5; i++) {  
            if (i==3) {  
                break;  
            }  
            System.out.println("" + i);  
        }  
    }  
}
```

}

Solution:

1
2

```
public class MyClass {  
    public static void main(String [] args) {  
        int x = 2;  
        System.out.println(" Square of a number = " + Math.pow((x), 2));  
    }  
}
```

Solution:

Square of a number = 4.0

```
public class MyClass {  
    public static void main(String [] args) {  
        int i = 54;  
        int y = i<<1;  
        System.out.println("The value of y = " + y);  
    }  
}
```

Solution:

The value of y = 108

```
public class MyClass {  
    public static void main(String [] args) {  
        int i = 54;  
        int y = i>>1;  
        System.out.println("The value of y = " + y);  
    }  
}
```

Solution:

```
import java.util.Scanner;
public class MyClass {
public static void main(String [] args) {
String m;
Scanner in = new Scanner(System.in);
System.out.print("Enter the name: ");
m = in.nextLine();
System.out.println("The name you entered = " + m);
}
}
```

Solution:

```
Enter the name:
Dennis
The name you entered = Dennis
```

```
public class MyClass {
public static void main(String[] args) {
for( ; ; )
{
System.out.println("This loop will run forever.\n");
}
}
}
```

Solution:

```
This loop will run forever.
This loop will run forever.
This loop will run forever.
This loop will run forever.
This loop will run forever.
This loop will run forever. ....
```

```
public class MyClass {
public static void main(String [] args) {
System.out.println("Hello, World!");
System.exit(0);
System.out.println("Hello, World!");
}
}
```

Solution:

```
Hello, world!
```

Question 32

Question:

Write a program to check whether the person is a senior citizen or not.

Solution:

```
public class MyClass {  
    public static void main(String [] args) {  
        int age;  
        age=20;  
        if(age>= 60)  
        {  
            System.out.println("senior citizen");  
        }  
        else  
        {  
            System.out.println("not a senior citizen");  
        }  
    }  
}
```

- [Beginner Python Exercises](#)

Question 1

Question:

Write a program to Add Two Numbers.

Solution:

```
a = 1
b = 2
c = a+b
print(c)
```

```
a = int(input("enter a number: "))
b = int(input("enter a number: "))
c = a+b
print(c)
```

Question 2

Question:

Write a program to find whether a given number (accept from the user) is even or odd, print out an appropriate message to the user.

Solution:

```
a = int(input("enter a number: "))
if a % 2 == 0:
    print("This is an even number.")
else:
    print("This is an odd number.")
```

Question 3

Question:

Write a program to check whether a number entered by the user is positive, negative or zero.

Solution:

```
a = int(input("Enter a number: "))
if a > 0:
    print("Positive number")
elif a == 0:
    print("Zero")
else:
    print("Negative number")
```

Question 4

Question:

Write a program to display the calendar of a given date.

Solution:

```
import calendar
yy = int(input("Enter year: "))
mm = int(input("Enter month: "))
print(calendar.month(yy, mm))
```

Question 5

Question:

Write a program to ask the user to enter the string and print that string as output of the program.

Solution:

```
string = input("Enter string: ")
print("You entered:", string)
```

Question 6

Question:

Write a program to Concatenate Two Strings.

Solution:

```
string1 = input("Enter first string to concatenate: ")
string2 = input("Enter second string to concatenate: ")
string3 = string1 + string2
print("String after concatenation = ",string3)
```

Question 7

Question:

Write a program to Check if an item exists in the list.

Solution:

```
list_of_items = ["ball", "book", "pencil"]
item = input("Type item to check: ")
if item in list_of_items:
    print("Item exists in the list.")
else:
    print("Item does not exist in the list.")
```

Question 8

Question:

Write a program to Join two or more lists.

Solution:

```
list1 = ["This" , "is", "a", "sample", "program"]
```

```
list2 = [10, 2, 45, 3, 5, 7, 8, 10]
finalList = list1 + list2
print(finalList)
```

Question 9

Question:

Write a program to Calculate Cube of a Number.

Solution:

```
import math
a = int(input("Enter a number: "))
b=math.pow(a,3)
print (b)
```

Question 10

Question:

Write a program to Calculate Square root of a Number.

Solution:

```
import math
a = int(input("Enter a number: "))
b=math.sqrt(a)
print (b)
```

Question 11

Question:

Write a program that takes a list of numbers (for example, $a = [5, 10, 15, 20, 25]$) and makes a new list of only the first and last elements of the given list.

Solution:

```
a = [5, 10, 15, 20, 25]
print([a[0], a[4]])
```

Question 12

Question:

Take a list, say for example this one: $a = [1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89]$ and write a program that prints out all the elements of the list that are less than 5.

Solution:

```
a = [1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89]
for i in a:
    if i < 5:
        print(i)
```

Question 13

Question:

Let's say I give you a list saved in a variable: $a = [1, 4, 9, 16, 25, 36, 49, 64, 81, 100]$. Write one line of Python that takes this list 'a' and makes a new list that has only the even elements of this list in it.

Solution:

```
a = [1, 4, 9, 16, 25, 36, 49, 64, 81, 100]
b = [number for number in a if number % 2 == 0]
print(b)
```

Question 14

Question:

Ask the user for a string and print out whether this string is a palindrome or not (A palindrome is a string that reads the same forwards and backwards).

Solution:

```
a=input("Please enter a word: ")
c = a.casefold()
b = reversed(c)
if list(c) == list(b):
    print("It is palindrome")
else:
    print("It is not palindrome")
```

Question 15

Question:

Take two lists, say for example these two: a = [1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89] b = [1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13] and write a program that returns a list that contains only the elements that are common between the lists (without duplicates). Make sure your program works on two lists of different sizes.

Solution:

```
a = [1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89]
b = [1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13]
result = [i for i in set(a) if i in b]
print(result)
```

Question 16

Question:

Write a program to add a string to text file.

Solution:

```
file = open("testfile.txt", "w")
file.write("Hello World")
file.write("This is our new text file")
file.write("and this is another line.")
file.write("Why? Because we can.")
file.close()
```

Question 17

Question:

Write a program to read a file and display its contents on console.

Solution:

```
with open('testfile.txt') as f:
    line = f.readline()
    while line:
        print(line)
        line = f.readline()
```

Question 18

Question:

Take two sets, say for example these two: $a = \{1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89\}$ $b = \{1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13\}$ and write a program that returns a set that contains only the elements that are common between the sets.

Solution:

```
a = {1, 1, 2, 2, 3, 5, 8, 13, 21, 34, 55, 89}
b = {1, 2, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13}
c = set(a) & set(b)
print(c)
```

Question 19

Question:

Write a program to split the characters of the given string into a list.

Solution:

```
s = "mystring"
l = list(s)
print(l)
```

Question 20

Question:

Create a program that asks the user for a number and then prints out a list of all the divisors of that number.

Solution:

```
n=int(input("Enter an integer: "))
print("The divisors of the number are: ")
for i in range(1,n+1):
    if(n%i==0):
        print(i)
```

Question 21

Question:

Write a program to Find the largest of three numbers.

Solution:

```
a = int(input("Enter first number: "))
b = int(input("Enter second number: "))
c = int(input("Enter third number: "))
if (a > b) and (a > c):
    largest = a
elif (b > a) and (b > c):
    largest = b
else:
    largest = c
print("The largest number is", largest)
```

Question 22

Question:

Write a Program to Find Absolute value of a Number.

Solution:

```
num = int(input("Enter a number: "))
if num >= 0:
    print(num)
else:
    print(-num)
```

Question 23

Question:

Write a program to Find the length of a String.

Solution:

```
print("Enter 'y' for exit.")
string = input("Enter a string: ")
if string == 'y':
    exit()
else:
    print("Length of the string =", len(string))
```

Question 24

Question:

Write a program to Print Natural Numbers from 1 to N.

Solution:

```
N = int(input("Please Enter any Number: "))
for i in range(1, N+1):
    print (i)
```

Question 25

Question:

Write a program to calculate the sum and average of Natural Numbers from 1 to N.

Solution:

```
N = int(input("Please Enter any Number: "))
sum = 0
for i in range(1,N+1):
    sum = sum + i
print(sum)
```



```
average = sum / N  
print(average)
```

Question 26

Question:

Write a program to Print a Statement Any Number of Times.

Solution:

```
n = int(input("Please Enter any Number: "))  
for i in range(n):  
    print("hello world")
```

Question 27

Question:

Write a program To Multiply Two Numbers Using Function.

Solution:

```
def my_function():  
    a = int(input("enter a number: "))  
    b=int(input("enter a number: "))  
    c= a*b  
    return c  
d = my_function()  
print (d)
```

Question 28

Question:

Write a program To add an item to the end of the list.

Solution:

```
list1 = ["pen", "book", "ball"]
list1.append("bat")
print(list1)
```

Question 29

Question:

Write a program To remove an item from the list.

Solution:

```
list1 = ["pen", "book", "ball"]
list1.remove("ball")
print(list1)
```

Question 30

Question:

Write a program To print the number of elements in an array.

Solution:

```
list1 = ["pen", "book", "ball"]
a = len(list1)
print(a)
```

Question 31

Question:

Write a program To calculate the variance and standard deviation of the elements of the list.

Solution:

```
import numpy as np
a= [2,6,8,12,18,24,28,32]
variance= np.var(a)
std = np.std(a)
print(variance)
print(std)
```

Question 32

Question:

Write a program to get the difference between the two lists.

Solution:

```
list1 = [4, 5, 6, 7]
list2 = [4, 5]
print(list(set(list1) - set(list2)))
```

Question 33

Question:

Write a program to select an item randomly from a list.

Solution:

```
import random
list = ['Paper', 'Pencil', 'Book', 'Bag', 'Pen']
print(random.choice(list))
```

Question 34

Question:

Write a program that prints all the numbers from 0 to 6 except 2 and 6.

Solution:

```
for x in range(6):
    if (x == 2 or x==6):
        continue
    print(x)
```

Question 35

Question:

Write a program that takes input from the user and displays that input back in upper and lower cases.

Solution:

```
a = input("What's your name? ")
print(a.upper())
print(a.lower())
```

Question 36

Question:

Write a program to check whether a string starts with specified characters.

Solution:

```
string = "myw3schools.com"  
print(string.startswith("w3s"))
```

Question 37

Question:

Write a program to create the multiplication table (from 1 to 10) of a number.

Solution:

```
n = int(input("Enter a number: "))  
for i in range(1,11):  
    print(n,'x',i,'=',n*i)
```

Question 38

Question:

Write a program to check a triangle is equilateral, isosceles or scalene.

Solution:

```
print("Enter lengths of the triangle sides: ")  
a = int(input("a: "))  
b = int(input("b: "))  
c = int(input("c: "))  
if a == b == c:  
    print("Equilateral triangle")
```

```
elif a==b or b==c or c==a:  
    print("isosceles triangle")  
else:  
    print("Scalene triangle")
```

Question 39

Question:

Write a program to sum of two given integers. However, if the sum is between 15 to 20 it will return 20.

Solution:

```
a = int(input("enter a number: "))  
b = int(input("enter a number: "))  
c = a+b  
if c in range(15, 20):  
    print (20)  
else:  
    print(c)
```

Question 40

Question:

Write a program to convert degree to radian.

Solution:

```
pi=22/7  
degree = int(input("Input degrees: "))  
radian = degree*(pi/180)  
print(radian)
```

Question 41

Question:

Write a program to Generate a Random Number.

Solution:

```
import random
print(random.randint(0,9))
```

Question 42

Question:

Write a Program to find the semi-perimeter of triangle.

Solution:

```
a = int(input('Enter first side: '))
b = int(input('Enter second side: '))
c = int(input('Enter third side: '))
s = (a + b + c) / 2
print(s)
```

Question 43

Question:

Given a list of numbers, Iterate it and print only those numbers which are divisible of 2.

Solution:

```
List = [10, 20, 33, 46, 55]
for i in List:
    if (i % 2 == 0):
        print(i)
```

Question 44

Question:

Write a program to Multiply all numbers in the list.

Solution:

```
import numpy
list = [1, 2, 3]
result = numpy.prod(list)
print(result)
```

Question 45

Question:

Write a program to print ASCII Value of a character.

Solution:

```
a = 'j'
print("The ASCII value of '" + a + "' is", ord(a))
```