

Practice Problems:

1. C Program to demonstrate change of values of a variable.

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

void main()
{
    float a, b;
    printf("Enter a number:");
    scanf("%f",&a);
    b = a;
    a = a+1;
    printf("%f, %f", a, b);
}
```

2. C Program to compute squared root and cube of an input number.

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

void main()
{
    float a;
    printf("Enter a number:");
    scanf("%f",&a);
    printf("%f, %f",sqrt(a), pow(a,3));
}
```

3. C program to print size of variables of different data types.

```
#include<stdio.h>
void main()
{
    printf("size of char: %d", sizeof(char));
    printf("\nsize of int: %d", sizeof(int));
    printf("\nsize of float: %d", sizeof(float));
    printf("\nsize of double: %d", sizeof(double));
}
```

4. C Program to convert a lowercase letter to uppercase:

```
#include<stdio.h>

void main()
{
    char a;
    printf("enter a lowercase character:");
    scanf("%c",&a);
    printf("%c",a-32);
}
```

Try yourself: Write a program that converts an uppercase letter to lowercase.

5. C program to print the last digit of a number and all the other digits of it:

```
#include<stdio.h>
void main()
{
    int n;
    printf("Enter an integer: ");
    scanf("%d", &n);
    int last = n%10;
    int others = n/10;
    printf("last digit: %d", last);
    printf("\nOther digits: %d", others);
}
```

6. C program to convert days to years weeks and days

```
#include <stdio.h>
void main()
{
    int days, years, weeks;

    // Read total number of days (since the year 0 A.D.)
    printf("Enter days: ");
    scanf("%d", &days);

    // Converts days to years, weeks and days
    years = days/365;    //Ignoring leap year
    weeks = (days%365)/7;
    days = days- ((years*365) + (weeks*7));

    printf("YEARS: %d\n", years);
    printf("WEEKS: %d\n", weeks);
    printf("DAYS: %d", days);
}
```

Homework Questions:

1. Compute the value of $5x^3 - 4x^2 + \sqrt{x} + 3$; read x from user
2. Solve the equation: $ax^2 + bx + c = 0$ and print the solutions. Read a,b,c from user
Hint: compute the values of $(-b + \sqrt{b^2 - 4ac})/2a$ and $(-b - \sqrt{b^2 - 4ac})/2a$; here sqrt is a C function that computes the squared root of a number
3. Find the volume of a (a) cube and (b) cylinder
Note: Read necessary inputs from user e.g. height and diameter of the cylinder for (a)
4. Compute quotient and remainder when you divide x by y (read x, y from user). Also, compute quotient and remainder when you divide y by x. Print all these four results.
5. Read a temperature in Celsius and print its Fahrenheit equivalent (Hint: $C = (F - 32) * 5/9$)
6. Print the sum of the series: $1 + 2 + \dots + n$; read n from user (Hint: $1 + 2 + \dots + n = n(n+1)/2$)
7. Print the sum of the series: $1^2 + 2^2 + \dots + n^2$; read n from user.