

CSE 115 Lab on functions – Ara2

1. C program illustrating the difference between void and non-void function:

<pre>#include <stdio.h> // definition of a non-void function float computeSquare(float x) { return x*x; } // definition of a void function void printCube(float x) { printf("Cube = %f", x*x*x); }</pre>	<pre>//main function void main() { float m, n; printf("\nEnter a number: "); scanf("%f", &m); //call computeSquare function on m n = computeSquare(m) ; printf ("Square = %f", n); //call printCube function on m printCube(m) ; }</pre>
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2. C program to determine if a given number is odd/even using function

<pre>#include <stdio.h> void oddEven(int x) { if(x%2==0) printf("Even"); else printf("Odd"); }</pre>	<pre>void main() { int m; printf("\nEnter an integer: "); scanf("%d", &m); oddEven(m); //function call }</pre>
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Try yourself2: Write C program using a function to check if a given number is positive, negative, or zero.

3. C program to determine if a given number is prime using function

<pre>#include <stdio.h> int isPrime(int x) { int i; for(i=2;i<=x/2;i++) { if(x%i==0) return 0; } return 1; }</pre>	<pre>int main() { int m; printf("\nEnter an integer: "); scanf("%d", &m); int n = isPrime(m); if(n==0) printf("Not prime") else printf("Prime"); }</pre>
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Try yourself 3: Write C program using a function to check if a given number is a perfect number.

4. C program to compute sum of all natural numbers between m and n (using function)

<pre>#include <stdio.h> int sum(int m, int n) { int i, sum=0; for(i=m;i<=n;i++) { sum+=i; } return sum; }</pre>	<pre>int main() { int m, n; printf("\nEnter 2 integers: "); scanf("%d%d", &m, &n); int s = sum(m,n); printf("sum=%d", s) }</pre>
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5. C program to compute the integer resulting from rounding a number n (using function)

<pre>#include <stdio.h> int round1(float n) { int i=n; //integer part of n if(n-i>=0.5) return i+1; else return i; }</pre>	<pre>int main() { float n; printf("\nEnter a number: "); scanf("%f", &n); int s = round1(n); printf("%d", s) }</pre>
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Exercise:

1. Write a C program using 3 functions to compute diameter, circumference and area of a circle whose radius is given by the user as the input.
2. Find the sum of the following series using a function: $1^2 + 2^2 + 3^2 + \dots + N^2$

Assignment:

1. Find the sum of the following series using user-defined function: $1/1! + 2/2! + 3/3! + \dots + 1/N!$
2. Write a C code using functions that takes two integers: a and b as inputs and returns the value of a^b .
3. Compute the sum of the following geometric progression using a function with 2 parameters r and n:
 $1 + r + r^2 + \dots + r^n$ (read the values of r and n from user)
4. Write a C program that reads an integer and returns the reverse of that number using function.
5. Write a C program using function that reads a floating point number n and an integer d and then prints the rounded value of n up to d decimal places. E.g. for n=5.678 and d = 2; it should print 5.68