**LAB REPORT # 4**



Spring 2020

CSE102L Computer Programming Lab

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Class Section: A

“On my honor, as student of University of Engineering and Technology, I have neither given nor received unauthorized assistance on this academic work.”

Student Signature: \_\_\_\_\_\_\_\_\_\_\_\_\_\_

Submitted to:

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1. **Write a program to create Simple Calculator using switch case.**

#include<iostream>

using namespace std;

main(){

int a,b;

char operater ;

cout<<"USE CALCULATOR FOR SIMPLE ARTHIMATIC OPERATION\n";

cout<<"Enter a number"<<endl;

cin>>a;

cout<<"Enter operator like +,-,/ or \*"<<endl;

cin>>operater;

cout<<"Enter another number"<<endl;

cin>>b;

switch (operater)

{

case '+':

cout<<a<<"+"<<b<<" = "<<a+b<<endl;

break;

case '-':

cout<<a<<"-"<<b<<" = "<<a-b<<endl;

break;

case '\*':

cout<<a<<"\*"<<b<<" = "<<a\*b<<endl;

break;

case '/':

cout<<a<<"/"<<b<<" = "<<a/b<<endl;

break;

default:

cout<<"invalid operator"<<endl;

}

return 0;

}

1. **Write a program that takes a number as input, checks it if it is between 1 and 10**

**(using switch) and if it is in valid range your program should output a line containing that number of adjacent asterisks. On invalid input number, the program should end.**

**For example, if your program input is 7, it should print \*\*\*\*\*\*\*.**

#include<iostream>

using namespace std;

main(){

char a;

cout<<"ENTER A NUM\n";

cin>>a;

switch (a)

{

case '1':

cout<<"\*"<<endl;

break;

case '2':

cout<<"\*\*"<<endl;

break;

case '3':

cout<<"\*\*\*"<<endl;

break;

case '4':

cout<<"\*\*\*\*"<<endl;

break;

case '5':

cout<<"\*\*\*\*\*"<<endl;

break;

case '6':

cout<<"\*\*\*\*\*\*"<<endl;

break;

case '7':

cout<<"\*\*\*\*\*\*\*"<<endl;

break;

case '8':

cout<<"\*\*\*\*\*\*\*\*"<<endl;

break;

case '9':

cout<<"\*\*\*\*\*\*\*\*\*"<<endl;

break;

case '10':

cout<<"\*\*\*\*\*\*\*\*\*\*"<<endl;

break;

default:

cout<<"invalid number"<<endl;

}

return 0;

}

1. **Write a program to find Factorial of a number.**

#include<iostream>

using namespace std;

main(){

int a,Number,ini=1;

cout<<"Enter a number";

cin>>Number;

for( a=1; a<=Number ;a++)

{

ini=a\*ini;

}

{

cout<<Number<<"! ="<<ini<<endl;

}

return 0;

}

1. **Write a program to print multiplication table of any number.**

#include<iostream>

using namespace std;

main ()

{

int a;

int b;

cout<<"whats table you need "<<endl;

cin>>b;

cout<<"Table of " <<b<< " is:"<<endl;

for (a=1; a<=10; a+=1)

{

cout<<a<<"\*"<<b<<"="<<a\*b<<"\n";

}

return 0;

}

1. **Write a program to input two integer numbers and display the sum of even numbers between these two input numbers.**

#include<iostream>

using namespace std;

main(){

int i,num1,num2,sum=0;

cout<<"ENTER TWO NUMBER as range\n";

cin>>num1>>num2;

for (i=num1; i<num2; i++)

{

if(i%2==0)

sum+=i;

}

cout<<"Sum of even number between "<<num1<<" and "<<num2<<" is ";

cout<<sum;

return 0;

}

1. **Write a program to print all natural numbers in reverse (from n to 1).**

#include<iostream>

using namespace std;

main(){

int a,b;

cout<<"Enter a number \n";

cin>>b;

cout<<"Natural number from "<<b<<" to 1 is "<<endl;

for (a=b; a>=1 ;a--)

{

cout<<a<<endl;

}

return 0;

}

1. **Write a program that takes the base and exponent as input and display the result of power.**

#include<iostream>

using namespace std;

main()

{

int i,exponent,result=1;

float base;

cout<<"Enter base of a number :"<<endl;

cin>>base;

cout<<"Enter exponent :"<<endl;

cin>>exponent;

for( i=1; i<=exponent; i++)

{

result=result\*base;

}

{

cout<<"RESULT"<<endl;

cout<<base<<"^"<<exponent<<"="<<result<<endl;

}

return 0;

}

1. **Write a program to check if a number input by user is PRIME or not, range of input is 1 to 300.**

#include <iostream>

using namespace std;

int main() {

int n, i;

bool isPrime = true;

cout << "Enter a positive integer: ";

cin >> n;

for (i = 2; i <= n / 2; ++i) {

if (n % i == 0) {

isPrime = false;

break;

}

}

if (isPrime)

cout << n << " is a prime number";

else

cout << n << " is not a prime number";

return 0;

}

1. **Write a program to display Fibonacci series up to 200. Fibonacci series: 0, 1, 1, 2, 3, 5, 8, 13, ….**

#include<iostream>

using namespace std;

main(){

int first=0,second=1 ,third, n=13;

//there are 13 terms in f.series upto 200//

for(int i=0 ;i<n; i++)

{

if (i==0)

{

cout<<"Fabonacci series upto 200:"<<endl;

cout<<first<<" "<<second<<" ";

}

else

{

third=first+second;

first=second;

second=third;

cout<<third<<" ";

}

}

return 0;

}

1. **Write a program to find GCD (greatest common divisor or HCF) and LCM (least common multiple) of two numbers.**

#include<iostream>

using namespace std;

main()

{

int a,b,c,hcf,lcm;

cout<<"Enter two number"<<endl;

cin>>a>>b;

c=b;

for( int i=1; i<=a && i<=b; i++ )

{

if(a%i==0 && b%i==0)

hcf=i;

while (1)

{

if (b%a==0)

lcm=b;

break;

}

b+=i;

}

cout<<"HCF of "<<a<<" and "<<c<<" is " <<hcf<<endl;

cout<<"lcm of"<<a<<" and "<<c<<" is "<<lcm;

return 0;

}

1. **Write a program that performs a survey tally on beverages. The program should prompt for the next person until a sentinel value of –1 is entered to terminate the program. Each person participating in the survey should choose their favorite beverage from the following list:**

**1. Coffee 2. Tea 3. Coke 4 . Orange Juice**

**Sample Run:**

**Please input the favorite beverage of person #1: Choose 1, 2, 3, or 4 from the above menu or -1 to exit the program**

**4**

**Please input the favorite beverage of person #2: Choose 1, 2, 3, or 4 from the above menu or -1 to exit the program**

**1**

**Please input the favorite beverage of person #3: Choose 1, 2, 3, or 4 from the above menu or -1 to exit the program**

**3**

**Please input the favorite beverage of person #4: Choose 1, 2, 3, or 4 from the above menu or -1 to exit the program**

**1**

**Please input the favorite beverage of person #5: Choose 1, 2, 3, or 4 from the above menu or -1 to exit the program**

**1**

**Please input the favorite beverage of person #6: Choose 1, 2, 3, or 4 from the above menu or -1 to exit the program -1**

**The total number of people surveyed is 5. The results are as follows:**

**Beverage Number of Votes \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* Coffee 3 Tea 0 Coke 1**

**Orange Juice 1**

#include<iostream>

#include<conio.h>

using namespace std;

int main() {

int a = 1, b, coffee = 0, tea = 0, cock = 0, orange\_juice = 0;

cout<<"1. Coffee\t2. Tea\t3. Cock\t4. Orange juice\n\n";

do {

cout<<"Please input the favorite beverage of person #"<<a<<": Choose 1, 2, 3, or 4 from the above menu or -1 to exit the program: ";

cin>>b;

a++;

switch(b) {

case 1:

coffee++;

break;

case 2:

tea++;

break;

case 3:

cock++;

break;

case 4:

orange\_juice++;

default:

break;

}

}

while(b!=-1); //-1 willterminate the program//

cout<<"\n votes\n";

cout<<"Coffee \t\t"<<coffee<<endl;

cout<<"Tea \t\t"<<tea<<endl;

cout<<"Cock \t\t"<<cock<<endl;

cout<<"Orange Juice\t\t"<<orange\_juice;

getch();

return 0;

}