**ASSIGNMENT NO. 5**

**PROGRAMMING FUNDAMENTALS**

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**TASK 1:**

#include<iostream>

#include<string>

#include<cmath>

using namespace std;

void cal(string a)

{

float n1=0.0,n2;

int i,b,c;

char value[30],op;

i=0;

while(value[i]=a[i])

{

i++;

}

c=1.0;

n2=0.0;

for(b=i-1;b>=0;b--)

{

if(value[b]!='+'&&value[b]!='\*'&&value[b]!='/'&&value[b]!='- '&&value[b]!='^')

{

n2=n2+((value[b]-'0')\*c);

c=c\*10;

}

else

{

op=value[b];

break;

}

}

i=1.0;

for(c=b-1;c>=0;c--)

{

n1=n1+((value[c]-'0')\*i);

i=i\*10.0;

}

cout<<"Enter first value "<<endl;

cin>>n1;

cout<<"Enter second value "<<endl;

cin>>n2;

switch(op)

{

case '+':

cout<<"sum = "<<n1+n2<<endl;

break;

case '-':

cout<<"sub = "<<n1-n2<<endl;

break;

case '\*':

cout<<"Multiplication = "<<n1\*n2<<endl;

break;

case '/':

cout<<"Division = "<<n1/n2<<endl;

break;

case '^':

cout<<"Power = "<<pow(n1,n2)<<endl;

break;

default:

cout<<" Sorry Invalid"<<endl;

}

}

int main()

{

string pro;

cout<<"Please Enter an operand(only +,-,\*,/,^) "<<endl;

cin>>pro;

cal(pro);

system("pause");

return 0;

}

**TASK 2:**

#include <iostream>

using namespace std;

bool PowerOfTwo(int n)

{

cout<<"Enter your desired number "<<endl;

cin>>n;

if (n == 0)

return 0;

while (n != 1)

{

if (n%2 != 0)

return 0;

n = n/2;

}

return 1;

}

int main()

{

PowerOfTwo(31)? cout<<"Yes\n": cout<<"No\n";

PowerOfTwo(64)? cout<<"Yes\n": cout<<"No\n";

return 0;

}

**TASK 3:**

#include <iostream>

using namespace std;

int coin(int a)

{

if((a % 2) == 0)

{

return 0;

}

return 1;

}

int main()

{

int amount,coins,value;

cout<<"Enter the number of coins you want "<<endl;

cin>>coins;

cout<<"Enter the value of each coin in the game "<<endl;

cin>>amount;

if (coin(coins))

{

cout<<" First player wins "<<endl;

}

else

{

cout<<" Draw "<<endl;

}

cout<<"Total cost = "<<amount\*coins<<endl;

value=(coins/2)\*amount;

system ("pause");

return 0;

}