***EX.No.:2(d) INLINE FUNCTION***

Aim:

Write a C++ program illustrating inline functions.

Algorithm:

Step1: start

Step2: read a,b

Step3: call an inline function mul() to multiply and return the value of a\*b

Step4: call an inline function div() to divide and return the value of a/b

Step5: stop

***PROGRAM:***

***#include <iostream>***

***using namespace std;***

***inline int mul(int x, int y)***

***{***

***return x\*y;***

***}***

***inline float divi(int x, int y)***

***{***

***return (float)x/y;***

***}***

***int main()***

***{***

***int a, b, product;***

***float division;***

***cout << "Enter two integers\n";***

***cin >> a >> b;***

***product = mul(a, b);***

***cout << "Product of integers: " << product << endl;***

***division = divi(a,b);***

***cout << "Division of integers: " << division << endl;***

***return 0;***

***}***

***Output:***

***Text

Description automatically generated***

***EX.No.:3 APPLIED THE ENCODING***

***AIM:***

*Develop a program to implement The algorithm of Encoding of messages.*

*ALGORITHM*

*When a sequence a series on n successive tokens appears (Message):*

*Step 1: Replace series with a token and a count number of occurrences.*

*Step 2: Usually need to have a special flag*

*Step 3: Denote when the repeated token appears:*

*\* Put the flag.*

*\* Put many the symbol is repeted and write it*

*\* then write this symbol*

*\* Go to find another repetation symbol*

*- If there is return to step 3.*

*-Else Stop.*

*PROGRAM :*

*#include <iostream>*

*#include <string.h>*

*using namespace std;*

*int main() {*

*int i,j,cnt,l,count[50]={0};*

*char str[50]="sleepzzzzzzzzzzzzzzzzzzz";*

*printf("\n\tOriginal String is: %s",str);*

*printf("\n\n\tEncoded String is: ");*

*l = strlen(str);*

*for(i=0;i<l;i\*=1) {*

*j = 0;*

*count[i] = 1;*

*do {*

*j++;*

*if(str[i+j] == str[i])*

*count[i]++;*

*} while(str[i+j]==str[i]);*

*if(count[i]==1)*

*printf("%c",str[i++]);*

*else {*

*printf("$%d%c",count[i],str[i]);*

*i += count[i];*

*}}*

*getchar();*

*}****Output:***

***Text

Description automatically generated***

*EX.No.: 4 DISCRETE ENTROPY FOR PROBABILITY*

*AIM:*

*Develop a program to Compute the Entropy in case of*

*Discrete Algorithm.*

*ALGORITHM DESCRIPTION:*

*Find the Entropy for each following probability, and*

*o The 0.1 Probability*

*o The 0.15 Probability*

*o The 0.2 Probability*

*o The 0.25 Probability*

*o The 0.3 Probability*

*Then the Entropy of all message.*

***Program:***

**#include <iostream>**

**#include <cmath>**

**using namespace std;**

**int main(){**

**int i;**

**float p,sum=0, it;**

**p=0.05;**

**for(i=1;i<=5;i++) {**

**p=0.05+p;**

**it=p\*(log(1/p))/log(2);**

**sum=sum+it;**

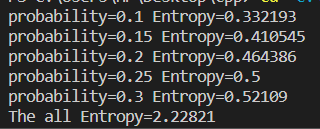
**cout<<"probability="<<p<<" Entropy="<<it<<endl;**

**}**

**cout<<"The all Entropy="<<sum<<endl;**

**}**

**Output:**

****

***EX.No.: 5 IMPLEMENT ENTROPY FOR PARTS OF MESSAGE***

***AIM:***

***Develop a program to Compute Entropy of 4 Parts of Message***

***ALGORITHM DESCRIPTION:***

***Suppose you have 4 messages each of them has the following probability:***

***Enter The 1 Probability : 0.1***

***Enter The 2 Probability : 0.2***

***Enter The 3 Probability : 0.3***

***Enter The 4 Probability : 0.4***

**Program:**

#include <iostream>

#include <cmath>

using namespace std;

int main(){

int i;

float p,sum=0, it;

p=0.0;

for(i=1;i<=4;i++) {

p=0.1+p;

it=p\*(log(1/p))/log(2);

sum=sum+it;

cout<<"probability="<<p<<

" Entropy="<<it<<endl;

}

cout<<"The all

Entropy="<<sum<<endl;

}

**OUTPUT:**

**Text

Description automatically generated**