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Question NO.1(Exercises From Chapter 4,5,6)

4.13) Gas Mileage

#include <iostream>

using namespace std;

int main()

{

float miles = 0;

float gallons = 0;

float total\_miles = 0;

float total\_gallons = 0;

cout<<"Enter miles driven (-1 to Quit) : ";

cin>>miles;

while(miles != -1)

{

cout<<"Enter gallons used in this trip : ";

cin >> gallons;

cout<<"Mileage this trip : "<<miles/gallons<<endl;

total\_miles += miles;

total\_gallons += gallons;

cout<<"Total Mileage : "<<total\_miles/total\_gallons<<endl<<endl;

cout<<"Enter miles driven (-1 to Quit) : ";

cin>>miles;

}

return 0;

}

4.18) Tabular Output

#include<iostream>

using namespace std;

int main()

{

int counter = 1;

cout<<"N \t N\*10 \t N\*100 \t N\*1000 \n\n";

while(counter <= 5)

{

cout<<counter<<" \t "<<counter\*10<<" \t "<<counter\*100

<<" \t "<<counter\*1000<<endl;

++counter;

}

return 0;

}

4.26) Palindrome

#include<iostream>

using namespace std;

int main()

{

int num = 0;

cout<<"Enter a number (5-Digits only) : ";

cin>>num;

int temp = num;

int reverseNum = 0;

while(temp>0)

{

reverseNum = (reverseNum \* 10) + (temp % 10);

temp /= 10;

}

cout<<"Original Number : "<<num<<endl;

cout<<"Reversed Number : "<<reverseNum<<endl;

if(reverseNum == num)

{

cout<<"\n\nThe given numbers are \"Palindrome\".";

}

else

{

cout<<"\n\nThe given numbers are not \"Palindrome\".";

}

return 0;

}

# 4.25) Square Of Asterisks

#include<iostream>

using namespace std;

int main()

{

int size = 0;

cout<<"Enter size of Square : ";

cin>>size;

cout<<"\n\n";

int i = 0;

while(i<size)

{

int j = 0;

cout<<"\*";

while(j<size-2)

{

if(i==0)

{

cout<<"\*";

}

else if(i == size-1)

{

cout<<"\*";

}

else

{

cout<<" ";

}

++j;

}

cout<<"\*"<<endl;

++i;

}

return 0;

}

# 5.12) Drawing Patterns

#include<iostream>

using namespace std;

int main(){

int length = 0;

cout<<"Enter Length of drawing patterns : ";

cin>>length;

cout<<"\n\n";

// Pattern (a) :

for(int i=1; i<=length ; i++){

for(int j=1; j<=i; j++){

cout<<"\*";

}

cout<<endl;

}

cout<<"\n\n";

// Pattern (b) :

for(int i=length; i>0 ; i--){

for(int j=i; j>0 ; j--){

cout<<"\*";

}

cout<<endl;

}

cout<<"\n\n";

// Pattern (c) :

int spaces = 0;

for(int i=length; i>0; i--){

for(int j=0; j<spaces; j++){

cout<<" ";

}

spaces++;

for(int k=i; k>0; k--){

cout<<"\*";

}

cout<<endl;

}

cout<<"\n\n";

spaces = length-1;

// Pattern (d) :

for(int i=1; i<=length ; i++){

for(int j=0; j<spaces; j++){

cout<<" ";

}

spaces--;

for(int k=1; k<=i; k++){

cout<<"\*";

}

cout<<endl;

}

return 0;

}

# 5.23) Diamond Of Asterisks

#include<iostream>

using namespace std;

int main(){

int size = 0;

cout<<"Enter size of Diamond : ";

cin>>size;

cout<<"\n\n";

int spaces = 0;

int stars = 0;

for(int i=1; i<=size; i++){

if(i==1){

spaces = size/2;

stars = 1;

}

else if(i<=(size/2+1)){

spaces--;

stars += 2;

}

else {

spaces++;

stars -= 2;

}

for(int j=1; j<=spaces; j++){

cout<<" ";

}

for(int k=1; k<=stars; k++){

cout<<"\*";

}

cout<<endl;

}

return 0;

}

# 5.9) Product Of Even Integers

#include<iostream>

using namespace std;

int main(){

int product = 1;

for(int i=2; i<=15 ; i++){

if(i%2==0){

cout<<product<<" \* "<<i<<" = ";

product \*= i;

cout<<product<<endl;

}

}

cout<<"\n\nThe result is : "<<product<<endl;

return 0;

}

# 6.18) Exponentation

#include<iostream>

using namespace std;

int integerPower(const int,const int);

int main(){

int base = 0;

int power = 0;

cout<<"Enter the base (-1 to Quit) : ";

cin>>base;

while(base!=-1){

cout<<"Enter the power : ";

cin>>power;

cout<<"\n("<<base<<" ^ "<<power<<") = "<<integerPower(base, power)<<endl;

cout<<"\nEnter the base (-1 to Quit) : ";

cin>>base;

}

return 0;

}

int integerPower(const int base,const int power){

int result = 1;

for(int i=1; i<=power; i++){

result \*= base;

}

return result;

}

# 6.22) Square of Asterisks

#include<iostream>

using namespace std;

void displaySolidSquare(int);

int main(){

int side = 0;

cout<<"Enter the sides of the square : ";

cin>>side;

displaySolidSquare(side);

return 0;

}

void displaySolidSquare(int side){

for(int i=0; i<side; i++){

for(int j=0; j<side; j++)

cout<<"\*";

cout<<endl;

}

}

# 6.30) Reverse Of a Number

#include<iostream>

using namespace std;

int reverseNumber(int);

int main(){

int n;

cout<<"Enter a number : ";

cin>>n;

cout<<"Reversed number = "<<reverseNumber(n);

return 0;

}

int reverseNumber(const int num){

int temp = num;

int reverse = 0;

while(temp>0){

reverse = (reverse\*10)+(temp % 10);

temp /= 10;

}

return reverse;

}