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| **Assignment No:** |  | **Mid** | | **Final** |
| **Course Title & Code:** | COMP102-PF | | | |
| **Submitted By:** | Muhammad Hamza Javed | | | |
| **Registration No:** | 2024f-mulug-1249 | | | |
| **Semster/Class/Section:** | BSCS 1st semester(B) | | | |
| **Submitted To:** | Sir Muhammad Danial | | | |
| **Due Date:** | **Outline** | | **Hard Copy** | |
| 03-02-2024 | |  | |
| **Student Signature:** |  | | | |

**Note: \*Please avoide cutting/ overwriting in any of the above fields.**

**\*Complete the Task on standard A4 size papers/assignment pages.**

**\*For Instructor’s use only.**

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| --- | --- |
| **Total Marks:** |  |
| **Obtaind Marks:** |  |
| **Signatures:** |  |

**Assignment no.3**

**1. Write a program to check if a number entered by the user is positive, negative, or zero using if-else.**

#include<iostream>

using namespace std;

int main( ){

int x;

cout<<"Enter the number:"<<endl;

cin>>x;

if(x>0){

cout<<"The number is positive."<<endl;

}else{

cout<<"The number is negative."<<endl;

}

return 0;

}

**2. Write a program that takes a number as input and checks whether it is even or odd using if-else.**

#include<iostream>

using namespace std;

int main(){

int x;

cout<<"Enter the number:"<<endl;

cin>>x;

if(x%2==0){

cout<<"The number is even"<<endl;

}else{

cout<<"The number is odd"<<endl;

}

return 0;

}

**3. Write a program to find the largest of three numbers using if-else.**

#include<iostream>

using namespace std;

int main(){

int x,y,z;

cout<<"Enter the 1 number:"<<endl;

cin>>x;

cout<<"Enter the 2 number:"<<endl;

cin>>y;

cout<<"Enter the 3 number:"<<endl;

cin>>z;

if(x>y && x>z){

cout<<"The number 1 is largest"<<endl;

}else if(y>x && y>z){

cout<<"The number 2 is largest"<<endl;

}else {

cout<<"The number 3 is largest"<<endl;

}

return 0;

}

**4. Write a program that asks the user to enter marks and determines the grade using multiple ifelse:**

**• Marks ≥ 90: Grade A**

**• Marks ≥ 80: Grade B**

**• Marks ≥ 70: Grade C**

**• Marks ≥ 60: Grade D**

**• Otherwise: Fail**

#include<iostream>

using namespace std;

int main(){

int x;

cout<<"Enter the number:"<<endl;

cin>>x;

if(x>=90){

cout<<"Congratulation you are getting A grade:"<<endl;

}else if(x>=80){

cout<<"Congratulation you are getting B grade:"<<endl;

}else if(x>=70){

cout<<"Congratulation you are getting C grade:"<<endl;

}else if(x>=60){

cout<<"Congratulation you are getting D grade:"<<endl;

}else{

cout<<"Congratulation you are fail"<<endl;

}

return 0;

}

**5. Write a program that checks whether a year entered by the user is a leap year or not using if-else.**

#include<iostream>

using namespace std;

int main() {

int year;

cout<<"Enter Year: ";

cin>>year;

if(year%400==0 || year%100!=0 && year%4==0){

cout<<"leap year";

}else{

cout<<"non leap year";

}

return 0;

}

**6. Write a program to check whether a character entered by the user is a vowel or consonant using if-else.**

#include<iostream>

using namespace std;

int main()

{

char ch;

cout<<"Enter Character:";

cin>>ch;

if(ch=='a'||ch=='e'||ch=='i'||ch=='o'||ch=='u'){

cout<<"This Alphabet is vowel"<<endl;

}else {

cout<<"This Alphabet is conconet";

}

return 0;

}

**7. Write a program to calculate the electricity bill based on the following conditions:**

* **Up to 100 units: ₹5 per unit**
* **101 to 300 units: ₹7 per unit**
* **Above 300 units: ₹10 per unit**
* **Display the total bill.**

#include<iostream>

using namespace std;

int main()

{

int bill,unit;

cout<<"Enter Unit:";

cin>>unit;

if(unit<=100){

bill=unit\*5;

cout<<"Total Bill is:"<<bill;

}else if(unit<=200){

bill=unit\*7;

cout<<"Total Bill is:"<<bill;

}else{

bill=unit\*10;

cout<<"Total Bill is:"<<bill;

}

return 0;

}

**8. Write a program that takes an integer from the user and determines whether it is a multiple of both 3 and 5 using if.**

#include<iostream>

using namespace std;

int main()

{

int x;

cout<<"Enter the Number:";

cin>>x;

if(x%3==0 && x%5==0){

cout<<"The number is divided by both"<<endl;

}else{

cout<<"The number is not inturpted"<<endl;

}

return 0;

}

**9. Write a program to check whether an is uppercase, entered character lowercase, digit, or special symbol using multiple if-else.**

#include<iostream>

using namespace std;

int main()

{

char ch;

cout<<"Enter the Number:";

cin>>ch;

if(ch>='A'&& ch<='Z'){

cout<<"The given character is Upper case"<<endl;

} else if(ch>='a' && ch<='z'){

cout<<"The given character is Lower case"<<endl;

}else if(ch>='0' && ch<='9'){

cout<<"The given character is Numaric"<<endl;

}else{

cout<<"The given character is Symbol";

}

return 0;

}

**10. Write a program to determine the eligibility of a person to vote based on their age (age ≥ 18 is eligible).**

#include<iostream>

using namespace std;

int main()

{

int num;

cout<<"Enter the number:";

cin>>num;

if(num>=18){

cout<<"You are eligible to vote";

}else{

cout<<"You are not eligible to vote";

}

return 0;

}

**11. Write a program to print numbers from 1 to 10 using a for loop.**

#include<iostream>

using namespace std;

int main()

{

int x;

for(x=0;x<=10;x++){

cout<<x<<endl;

}

return 0;

}

**12. Write a program to find the sum of the first n natural numbers using a for loop.**

#include<iostream>

using namespace std;

int main()

{

int n,sum=0;

cout<<"Enter the number:";

cin>>n;

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

cout<<i<<endl;

sum+=n;

}

cout<<"The sum of natural number is:"<<sum<<endl;

return 0;

}

**13. Write a program to print the multiplication table of a number entered by the user using a for loop.**

#include<iostream>

using namespace std;

int main()

{

int n;

cout<<"Enter The Number:";

cin>>n;

for(int i=1;i<=10;i++){

cout<<n<<"x"<<i<<"="<<n\*i<<endl;

}

return 0;

}

**14. Write a program to print the factorial of a number using a while loop**

**#include<iostream>**

using namespace std;

int main()

{

int n,factorial=1,i;

cout<<"Enter The Number:";

cin>>n;

i=n;

while(i>0){

factorial=factorial\*i;

i--;

}

cout<<"The factorial of"<<n<<"is"<<factorial<<endl;

return 0;

}

**15. Write a program to reverse a given number using a while loop.**

#include<iostream>

using namespace std;

int main()

{

int n,rev=0;

cout<<"Enter The value:";

cin>>n;

while(n>0){

rev=rev\*10+n%10;

n=n/10;

}

cout<<"The reverse number is:"<<rev<<endl;

return 0;

}

**16. Write a program to check whether a number is prime or not using a for loop.**

#include<iostream>

using namespace std;

int main()

{

int n,count=0;

cout<<"Enter The Number:";

cin>>n;

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

if(n%i==0){

count++;

}

}

if(count==2){

cout<<"is the prime number";

}else{

cout<<"is not the prime number";

}

return 0;

}

**17. Write a program to calculate the sum of digits of a number using a while loop.**

#include<iostream>

using namespace std;

int main()

{

int n,sum=0,digit;

cout<<"Enter The Number:";

cin>>n;

while(n>0){

digit=n%10;

sum=sum+digit;

n/-10;

}

cout<<"The sum of digits:"<<sum<<endl;

return 0;

}

**18. Write a program to print the Fibonacci series up to n terms using a for loop.**

#include<iostream>

using namespace std;

int main()

{

int n,first=0,second=1,next;

cout<<"Enter The Number:";

cin>>n;

cout<<"Fabarconnic series"<<endl;

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

cout<<first<<endl;

next=first+second;

first=second;

second=next;

}

cout<<endl;

**19. Write a program to display the sum of even numbers between 1 and 50 using a for loop.**

#include<iostream>

using namespace std;

int main()

{

int sum=0;

for(int i=2;i<=50;i+=2){

cout<<i<<endl;

sum+=i;

}

cout<<"Total sum of number is"<<sum<<endl;

}

return 0;

}

**20. Write a program to generate the following pattern using a nested for loop:**

**\***

**\* \***

**\* \* \***

**\* \* \* \***

**\* \* \* \* \***

#include<iostream>

using namespace std;

int main()

{

int n=5;

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

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

cout<<"\*";

}

cout<<endl;

}

return 0;

}