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| **Assignment No:** |  | **Mid** | | **Final** |
| **Course Title & Code:** | ***Programming fundamental*** | | | |
| **Submitted By:** | ***Hassan Musanna*** | | | |
| **Registration No:** | ***2024f-mulug-1191*** | | | |
| **Semster/Class/Section:** | ***1st BSCS (B)*** | | | |
| **Submitted To:** | ***Mr. 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:** |  |

***FACULTY OF CS/IT,***

***MINHAJ UNIVERSITY LAHORE***

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;***

***}***

1. ***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;***

***}***

1. ***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;***

***}***

1. ***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;***

***}***

1. ***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;***

***}***

1. ***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;***

***}***

1. ***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;***

***}***

1. ***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;***

***}***

1. ***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;***

***}***

1. ***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;***

***}***

1. ***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;***

***}***

1. ***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;***

***}***

1. ***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;***

***}***

1. ***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;***

***}***

1. ***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;***

***}***

1. ***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;***

***}***

1. ***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;***

***}***

1. ***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;***

1. ***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;***

***}***

1. ***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;***

***}***