Assignment No-3

1. Write a program to accept an integer and check if it is even or odd.

#include <stdio.h>

int main() {

int num;

printf("Enter an integer: ");

scanf("%d", &num); // Read integer input

if (num % 2 == 0) // Check if number is divisible by 2

printf("%d is Even\n", num);

else

printf("%d is Odd\n", num);

return 0;

}

2. Write a program to accept three numbers and check whether the first is between the other two numbers. Ex: Input 20 10 30. Output: 20 is between 10 and 30

#include <stdio.h>

int main() {

int a, b, c;

printf("Enter three numbers: ");

scanf("%d %d %d", &a, &b, &c); // Read three integers

if ((a > b && a < c) || (a > c && a < b)) // Check if 'a' is between 'b' and 'c'

printf("%d is between %d and %d\n", a, b, c);

else

printf("%d is not between %d and %d\n", a, b, c);

return 0;

}

3. Accept a character as input and check whether the character is a digit. (Check if it is in the range ‘0’ to ‘9’ both inclusive)

#include <stdio.h>

int main() {

char ch;

printf("Enter a character: ");

scanf(" %c", &ch); // Read a single character

if (ch >= '0' && ch <= '9') // Check if it's between '0' and '9'

printf("'%c' is a digit\n", ch);

else

printf("'%c' is not a digit\n", ch);

return 0;

}

4. Write a program to accept a number and check if it is divisible by 5 and 7.

#include <stdio.h>

int main() {

int num;

printf("Enter a number: ");

scanf("%d", &num); // Read integer input

if (num % 5 == 0 && num % 7 == 0) // Check divisibility by both 5 and 7

printf("%d is divisible by 5 and 7\n", num);

else

printf("%d is not divisible by 5 and 7\n", num);

return 0;

}

5. Write a program, which accepts the annual basic salary of an employee and calculates and displays the Income tax as per the following rules. Basic: < 1,50,000 Tax = 0 1,50,000 to 3,00,000 Tax = 20% > 3,00,000 Tax = 30%

#include <stdio.h>

int main() {

float salary, tax;

printf("Enter annual basic salary: ");

scanf("%f", &salary); // Read salary as float

if (salary < 150000)

tax = 0;

else if (salary <= 300000)

tax = 0.2 \* salary; // 20% tax

else

tax = 0.3 \* salary; // 30% tax

printf("Income tax to be paid: Rs. %.2f\n", tax);

return 0;

}

6. Accept a lowercase character from the user and check whether the character is a vowel or consonant. (Hint: a,e,i,o,u are vowels).

#include <stdio.h>

int main() {

char ch;

printf("Enter a lowercase character: ");

scanf(" %c", &ch); // Read character input

// Check if character is a vowel

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

printf("'%c' is a vowel\n", ch);

else

printf("'%c' is a consonant\n", ch);

return 0;

}

7. Accept any year as input through the keyboard. Write a program to check whether the year is a leap year or not. (Hint leap year is divisible by 4 and not by 100 or divisible by 400).

#include <stdio.h>

int main() {

int year;

printf("Enter a year: ");

scanf("%d", &year); // Read year input

// Check leap year condition

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

printf("%d is a leap year\n", year);

else

printf("%d is not a leap year\n", year);

return 0;

}

8. Write a program to check whether a given character is a digit or a character in lowercase or uppercase alphabet. (Hint ASCII value of digit is between 48 to 58 and Lowercase characters have ASCII values in the range of 97 to122, uppercase is between 65 and 90)

#include <stdio.h>

int main() {

char ch;

printf("Enter a character: ");

scanf(" %c", &ch); // Read character

if (ch >= 48 && ch <= 57) // ASCII range for digits

printf("'%c' is a digit\n", ch);

else if (ch >= 65 && ch <= 90) // ASCII range for uppercase

printf("'%c' is an uppercase letter\n", ch);

else if (ch >= 97 && ch <= 122) // ASCII range for lowercase

printf("'%c' is a lowercase letter\n", ch);

else

printf("'%c' is not a digit or alphabet\n", ch);

return 0;

}