ASSIGNMENT DAY 3

MATH CALCULATIONS :

```
#include <stdio.h>
int main() {
   int a, b;
   printf("Enter the first integer (a): ");
   scanf("%d", &a);
   printf("Enter the second integer (b): ");
   scanf("%d", &b);
   int sum = a + b;
   int product = a * b;
   if (sum > 100){
      printf("The sum of a and b is greater than 100\n");
   }
   else{
      printf("The sum of a and b is not greater than 100\n");
   }
   if (product % 4 == 0){
      printf("The product of a and b is divisible by 4\n");
   }
   else{
      printf("The product of a and b is not divisible by 4\n");
   }
   if (a & (1 << 1)) {
      printf("The second bit of a is set\n");
   }
```

```
    else {
        printf("The second bit of a is not set\n");
    }
    return 0;
}
```

OUTPUT :

Enter the first integer (a): 2

Enter the second integer (b): 4

The sum of a and b is not greater than 100

The product of a and b is divisible by 4

The second bit of a is set

NUMBER VALIDATIONS PROPERTIES :

```
#include <stdio.h>

int main() {
    int n;
    printf("Enter an integer: ");
    scanf("%d", &n);
    if (n % 5 == 0 && n > 50) {
        if (n & 1) {
            printf("The number is a multiple of 5, greater than 50, and has its least significant bit set.\n");
        }
        else {
            printf("The number is a multiple of 5 and greater than 50, but its least significant bit is not set.\n");
```

```
    }
  }
  else {
    printf("The number is either not a multiple of 5 or not greater than 50.\n");
  }
  return 0;
}
```

OUPUT:

Enter an integer: 2

The number is either not a multiple of 5 or not greater than 50.

SET, CLEAR, CHECK:

```
#include <stdio.h>

int main() {
  int n, set_pos, clear_pos, limit1, limit2;
  printf("Enter a number: ");
  scanf("%d", &n);
  printf("Enter the position to set a bit: ");
  scanf("%d", &set_pos);
  printf("Enter the position to clear a bit: ");
  scanf("%d", &clear_pos);
  printf("Enter the lower limit of the range: ");
  scanf("%d", &limit1);
  printf("Enter the upper limit of the range: ");
  scanf("%d",  limit2);
```

```
    n = n | (1 << set_pos);
    n = n & ~(1 << clear_pos);
    if (n % 2 != 0){
        printf("The resulting number is odd\n");
    }
    else{
        printf("The resulting number is even\n");
    }
    if (n >= limit1 && n <= limit2){
        printf("The resulting number is within the range\n");
    }
    else{
        printf("The resulting number is outside the range\n");
    }
    return 0;
}
```

OUTPUT:

Enter a number: 4

Enter the position to set a bit: 3

Enter the position to clear a bit: 2

Enter the lower limit of the range: 3

Enter the upper limit of the range: 5

TOGGLE EVALUATE:

```
#include <stdio.h>
```

```
int main() {
	int n, p;
	printf("Enter an integer: ");
	scanf("%d", &n);
	printf("Enter the position (p) to toggle the bit: ");
	scanf("%d", &p);
	n = n ^ (1 << p);
	if (n > 0){
		printf("The updated number is positive\n");
	}
	else {
		printf("The updated number is not positive\n");
	}
	if (n%2 == 0){
		printf("The updated number is divisible by 2\n");
	}
	else{
		printf("The updated number is not divisible by 2\n");
	}
	return 0;
}
```

OUTPUT:

```
Enter an integer: 2
Enter the position (p) to toggle the bit: 5
The updated number is positive
The updated number is divisible by 2
```

VOTE CHECK:

```
#include <stdio.h>

int main() {
   int age, id;
   printf("Enter age: ");
   scanf("%d", &age);
   printf("Enter ID number: ");
   scanf("%d", &id);
   if (age >= 18 && (id & (1 << 4))){
      printf("The person is eligible to vote.\n");
   }
   else{
      printf("The person is not eligible to vote.\n");
   }
   return 0;
}
```

OUTPUT:

Enter age: 45

Enter ID number: 122334

The person is eligible to vote.

BITWISE AND WITH 2 INTEGERS:

```
#include <stdio.h>
```

```
int main() {
   int num1, num2, result;
   printf("Enter the first integer: ");
   scanf("%d", &num1);
   printf("Enter the second integer: ");
   scanf("%d", &num2);
   result = num1 & num2;
   printf("The result of %d & %d is: %d\n", num1, num2, result);
   return 0;
}
```

OUTPUT:

```
Enter the first integer: 6
Enter the second integer: 8
The result of 6 & 8 is: 0
```

BITWISE OR WITH 2 INTEGERS:

```
#include <stdio.h>

int main() {
   int num1, num2, result;
   printf("Enter the first integer: ");
   scanf("%d", &num1);
   printf("Enter the second integer: ");
   scanf("%d", &num2);
   result = num1 | num2;
   printf("The result of %d & %d is: %d\n", num1, num2, result);
```

```
    return 0;
}
```

OUTPUT:

```
Enter the first integer: 3
Enter the second integer: 4
The result of 3 & 4 is: 7
```

BITWISE XOR WITH 2 INTEGERS:

```
#include <stdio.h>
int main() {
    int num1, num2, result;
    printf("Enter the first integer: ");
    scanf("%d", &num1);
    printf("Enter the second integer: ");
    scanf("%d", &num2);
    result = num1 ^ num2;
    printf("The result of %d & %d is: %d\n", num1, num2, result);
    return 0;
}
```

OUTPUT:

```
Enter the first integer: 2
Enter the second integer: 4
The result of 2 & 4 is: 6
```

BITWISE COMPLEMENT:

```
#include <stdio.h>

int main() {
   int num, result;
   printf("Enter an integer: ");
   scanf("%d", &num);
   result = ~num;
   printf("The bitwise complement of %d is: %d\n", num, result);
   return 0;
}
```

OUTPUT:

Enter an integer: 2

The bitwise complement of 2 is: -3

POSITION WITH NOT OPERATOR:

```
#include <stdio.h>

int main() {
   int n, p;
   printf("Enter an integer: ");
   scanf("%d", &n);
   printf("Enter the position (p) to clear the bit: ");
   scanf("%d", &p);
   n = n & ~(1 << p);
```

```
    printf("New value after clearing the bit at position %d: %d\n", p, n);
    return 0;
}
```

OUTPUT:

Enter an integer: 7

Enter the position (p) to clear the bit: 6

New value after clearing the bit at position 6: 7

POSITION WITH OR

```
#include <stdio.h>

int main() {
    int n, p;
    printf("Enter an integer: ");
    scanf("%d", &n);
    printf("Enter the position (p) to set the bit to 1: ");
    scanf("%d", &p);
    n = n | (1 << p);
    printf("The new value after setting the bit at position %d to 1 is: %d\n", p, n);
    return 0;
}
```

OUTPUT:

Enter an integer: 5

Enter the position (p) to set the bit to 1: 8

The new value after setting the bit at position 8 to 1 is: 261

TOGGLE WITH XOR:

```
#include <stdio.h>
int main() {
   int n, p;
   printf("Enter an integer: ");
   scanf("%d", &n);
   printf("Enter the position to toggle the bit: ");
   scanf("%d", &p);
   n = n ^ (1 << p);
   printf("The new value after toggling the bit at position %d is: %d\n", p, n);
   return 0;
}
```

OUTPUT:

Enter an integer: 5

Enter the position to toggle the bit: 3

The new value after toggling the bit at position 3 is: 13

AREA COMPARISON:

```
#include <stdio.h>

int main() {
   float length1, breadth1, length2, breadth2;
   float area1, area2;
   printf("Enter the length and breadth of the first rectangle: ");
   scanf("%f %f", &length1, &breadth1);
```

```
    printf("Enter the length and breadth of the second rectangle: ");
    scanf("%f %f", &length2, &breadth2);
    area1 = length1 * breadth1;
    area2 = length2 * breadth2;
    if (area1 > area2) {
        printf("The first rectangle has a larger area: %.2f square units", area1);
    }
    else if (area1 < area2) {
        printf("The second rectangle has a larger area: %.2f square units", area2);
    }
    else {
        printf("Both rectangles have the same area: %.2f square units", area1);
    }
    return 0;
}
```

OUTPUT:

```
Enter the length and breadth of the first rectangle: 3
4
Enter the length and breadth of the second rectangle: 6
9
The second rectangle has a larger area: 54.00 square units
```

CHARACTER CHECK:

```
#include <stdio.h>

int main() {
```

```
    char ch;
    printf("Enter a character: ");
    scanf("%c", &ch);
    if (ch >= 'a' && ch <= 'z') {
        printf("The character '%c' is a lowercase letter.", ch);
    }
    else {
        printf("The character '%c' is not a lowercase letter", ch);
    }
    return 0;
}
```

OUTPUT:

Enter a character: E

The character 'E' is not a lowercase letter

EQUALITY CHECK:

```
#include<stdio.h>
int main(){
    int x,y;
    printf("Enter the value x:");
    scanf("%d",&x);
    printf("Enter the value y:");
    scanf("%d",&y);
    if (x==y){
        printf("Given two integers are equal");
    }
```

```
    else{
        printf("Given two integers are not equal");
    }
    return 0;
}
```

OUTPUT:

Enter the value x:3

Enter the value y:3

Given two integers are equal

GRADE CHECK:

```
#include <stdio.h>

int main() {
    float marks;
    printf("Enter the marks of the student: ");
    scanf("%f", &marks);
    if(marks >= 40 && marks <=100){
        printf("Passed");
    }
    else if(marks > 100){
        printf("Enter a Valid mark");
    }
    else{
        printf("Failed");
    }
```

```
    return 0;
}
```

OUTPUT:

Enter the marks of the student: 50

Passed

GREATER NUMBER CHECK:

```
#include<stdio.h>

int main(){
    int x,y;
    printf("Enter the value x:");
    scanf("%d",&x);
    printf("Enter the value y:");
    scanf("%d",&y);
    if(x>y){
        printf("%d is greater",x);
    }
    else if(x<y){
        printf("%d is greater",y);
    }
    else{
        printf("They are equal");
    }
    return 0;
}
```

OUTPUT:

Enter the value x:4

Enter the value y:1

4 is greater

NUMBER RANGE :

```
#include <stdio.h>

int main() {
   int num;
   printf("Enter the number: ");
   scanf("%d", &num);
   if(num>=10 && num<=50){
      printf("Lies within the range");
   }
   else{
      printf("Not in the range");
   }
   return 0;
}
```

OUTPUT:

Enter the number: 56

Not in the range

POSITIVE CHECK:

```
#include<stdio.h>
int main(){
   int x;
   printf("Enter the value x:");
   scanf("%d",&x);
   if(x>0){
      printf("%d is positive",x);
   }
   else{
      printf("%d is not positive",x);
   }
   return 0;
}
```

OUTPUT:

```
Enter the value x:43
43 is positive
```

RECTANGLE DIMENSION CHECK:

```
#include <stdio.h>

int main() {
   float l,b;
   printf("Enter the length of the rectangle: ");
   scanf("%f", &l);
```

```
    printf("Enter the breadth of the rectangle: ");
    scanf("%f", &b);
    if (l> 0 && b> 0) {
        printf("The dimensions form a valid rectangle");
    }
    else {
        printf("Invalid dimensions! Length and breadth must be greater than 0");
    }
    return 0;
}
```

OUTPUT:

Enter the length of the rectangle: 3

Enter the breadth of the rectangle: 9

The dimensions form a valid rectangle

WEIGHT CHECK:

```
#include <stdio.h>

int main() {
    float weight;
    float max_limit = 50.0;
    printf("Enter the weight of the object in kg: ");
    scanf("%f", &weight);
    if (weight > max_limit) {
        printf("The weight exceeds the maximum limit of %.2f kg", max_limit);
    }
```

```
    else {
        printf("The weight is within the limit.\n");
    }
    return 0;
}
```

OUTPUT:

Enter the weight of the object in kg: 5

The weight is within the limit.

---

3 NUMBER COMPARISON:

```
#include <stdio.h>
int main() {
    int num1, num2, num3;
    printf("Enter three numbers: ");
    scanf("%d %d %d", &num1, &num2, &num3);
    if (num1 >= num2 && num1 >= num3) {
        printf("The largest number is %d\n", num1);
    } else if (num2 >= num1 && num2 >= num3) {
        printf("The largest number is %d\n", num2);
    } else {
        printf("The largest number is %d\n", num3);
    }
    return 0;
}
```

OUTPUT:

Enter three numbers: 5

6

0

The largest number is 6

ADMISSION:

```
#include <stdio.h>
int main() {
   int age, marks;
   printf("Enter your age: ");
   scanf("%d", &age);
   printf("Enter your marks: ");
   scanf("%d", &marks);
   if (age >= 18 && marks >= 50) {
      printf("You meet the admission criteria.\n");
   } else {
      printf("You do not meet the admission criteria.\n");
   }
   return 0;
}
```

OUPUT:

Enter your age: 19

Enter your marks: 73

You meet the admission criteria.

COMPARISON 2 NUMBERS:

```
#include <stdio.h>
int main() {
   int num1, num2;
   printf("Enter two integers: ");
   scanf("%d %d", &num1, &num2);
   if (num1 == num2) {
      printf("%d is equal to %d\n", num1, num2);
   }
   else if (num1 != num2) {
      printf("%d is not equal to %d\n", num1, num2);
   }
   else if (num1 > num2) {
      printf("%d is greater than %d\n", num1, num2);
   }
   else {
      printf("%d is less than %d\n", num1, num2);
   }
   return 0;
}
```

OUTPUT:

```
Enter two integers: 12
9
12 is not equal to 9
```

DIVISIBILITY CHECK:

```
#include <stdio.h>

int main() {
   int num1, num2;
   printf("Enter two numbers: ");
   scanf("%d %d", &num1, &num2);
   if (num2 != 0 && num1 % num2 == 0) {
      printf("%d is divisible by %d.\n", num1, num2);
   } else if (num2 == 0) {
      printf("Division by zero is not allowed.\n");
   } else {
      printf("%d is not divisible by %d.\n", num1, num2);
   }
   return 0;
}
```

OUTPUT:

Enter two numbers: 7□□9

3

9 is divisible by 3.

GRADE CHECK:

```
#include <stdio.h>
int main() {
   int marks1, marks2;
   printf("Enter marks of the first student: ");
   scanf("%d", &marks1);
```

```
    printf("Enter marks of the second student: ");
    scanf("%d", &marks2);
    if (marks1 > marks2) {
        printf("The first student scored higher.\n");
    } else if (marks1 < marks2) {
        printf("The second student scored higher.\n");
    } else {
        printf("Both students have the same marks.\n");
    }
    return 0;
}
```

OUTPUT:

Enter marks of the first student: 32

Enter marks of the second student: 70

The second student scored higher.

LEAP YEAR:

```
#include <stdio.h>
int main() {
    int year;
    printf("Enter a year: ");
    scanf("%d", &year);
    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;
}
```

OUTPUT:

Enter a year: 2024

2024 is a leap year.

PASSWORD:

```
#include <stdio.h>
int main() {
    int password_length;
    printf("Enter the length of the password: ");
    scanf("%d", &password_length);
    if (password_length >= 8) {
        printf("The password meets the minimum length requirement.\n");
    } else {
        printf("The password does not meet the minimum length requirement.\n");
    }
    return 0;
}
```

OUTPUT:

Enter the length of the password: Hello@1234

The password does not meet the minimum length requirement.

TEMPERATURE:

```
#include <stdio.h>
int main() {
   float temperature;
   printf("Enter the temperature in Celsius: ");
   scanf("%f", &temperature);

   if (temperature > 40) {
      printf("Alert! The temperature exceeds 40°C.\n");
   } else {
      printf("The temperature is below the threshold.\n");
   }
   return 0;
}
```

OUTPUT:

Enter the temperature in Celsius: 46

Alert! The temperature exceeds 40°C.

TRIANGLE TYPE CHECKER:

```
#include <stdio.h>

int main() {
   int side1, side2, side3;
   printf("Enter the lengths of the three sides of the triangle: ");
   scanf("%d %d %d", &side1, &side2, &side3);
```

```
    if (side1 + side2 > side3 && side1 + side3 > side2 && side2 + side3 > side1) {
        printf("The triangle is valid.\n");
    } else {
        printf("The triangle is not valid.\n");
    }
    return 0;
}
```

OUTPUT:

Enter the lengths of the three sides of the triangle: 7

7

1

The triangle is valid.

VOTE:

```
#include <stdio.h>
int main() {
    int age;
    printf("Enter your age: ");
    scanf("%d", &age);
    if (age >= 18) {
        printf("You are eligible to vote.\n");
    } else {
        printf("You are not eligible to vote.\n");
    }
    return 0;
}
```

OUTPUT:

Enter your age: 19

You are eligible to vote.

ADMISSION ELIGIBILITY:

```
#include<stdio.h>
int main(){
   int m1, m2 , total;
   printf("Enter the maths mark:");
   scanf("%d",&m1);
   printf("Enter the physics mark:");
   scanf("%d",&m2);
   total = m1 + m2;
   if(m1 >= 50 && m2 >= 50){
      if(total >= 120){
         printf("You are Eligible for admission");
      }
      else{
         printf("You are not eligible for admission");
      }
   }
   else{
      printf("You are not eligible for admission");
   }
   return 0;
}
```

OUTPUT:

Enter the maths mark:76

Enter the physics mark:43

You are not eligible for admission

AGE CHECK:

```
#include<stdio.h>
int main(){
   int x,y;
   printf("Enter the age of first person:");
   scanf("%d",&x);
   printf("Enter the age of second person:");
   scanf("%d",&y);
   if (x>y){
      printf("The first person is %d years older than second person",x-y);
   }
   else if(x<y){
      printf("The second person is %d years older than first person",y-x);
   }
   else{
      printf("They are of same age");
   }
   return 0;
}
```

OUTPUT:

Enter the age of first person:19

Enter the age of second person:34

The second person is 15 years older than first person

POSITIVITY CHECK:

```
#include<stdio.h>

int main(){
   int x;
   printf("Enter the value x:");
   scanf("%d",&x);
   if(x>0){
      printf("%d is positive",x);
   }
   else{
      printf("%d is not positive",x);
   }
   return 0;
}
```

OUTPUT:

Enter the value x:-8

-8 is not positive

DAY OF WEEK:

```
#include <stdio.h>
```

```
int main() {
   int day;
   printf("Enter the number to get the day of the week: ");
   scanf("%d", &day);
   if (day == 1) {
      printf("Monday");
   }
   else if (day == 2) {
      printf("Tuesday");
   }
   else if (day == 3) {
      printf("Wednesday");
   }
   else if (day == 4) {
      printf("Thursday");
   }
   else if (day == 5) {
      printf("Friday");
   }
   else if (day == 6) {
      printf("Saturday");
   }
   else if (day == 7) {
      printf("Sunday");
   }
   else {
      printf("Invalid input, Please enter a number between 1 and 7");
   }
   return 0;
```

```
}
```

OUTPUT:

Enter the number to get the day of the week: 4

Thursday

DIVISIBILITY CHECK:

```
#include<stdio.h>
int main(){
   int x;
   printf("Enter the value x:");
   scanf("%d",&x);
   if(x%3==0){
      printf("%d is divisible by 3",x);
   }
   else{
      printf("%d is not divisible by 3",x);
   }
   return 0;
}
```

OUTPUT:

Enter the value x:34

34 is not divisible by 3

ELECTRICITY BILL:

```c
#include <stdio.h>

int main() {
   int units, bill;
   printf("Enter the number of units consumed: ");
   scanf("%d", &units);
   if (units <= 100) {
      bill = units * 5;
   }
   else if (units > 100 && units <= 200) {
      bill = units * 7;
   }
   else {
      bill = units * 10;
   }
   printf("Total electricity bill: ₹%d\n", bill);
   return 0;
}
```

OUTPUT:

Enter the number of units consumed: 34

Total electricity bill: ₹170

GRADE CHECK:

```c
#include <stdio.h>

int main() {
```

```
    float marks;
    printf("Enter the marks of the student to know the Grade: ");
    scanf("%f", &marks);
    if(marks >= 90){
        printf("Grade A");
    }
    else if(marks >= 75){
        printf("Grade B");
    }
    else if(marks >= 50){
        printf("Grade C");
    }
    else if(marks < 50){
        printf("Fail");
    }
    else{
        printf("Enter a Valid Mark");
    }
    return 0;
}
```

OUTPUT:

Enter the marks of the student to know the Grade: 65

Grade C

ODD EVEN:

```
#include<stdio.h>
```

```
int main(){
   int x;
   printf("Enter the value x:");
   scanf("%d",&x);
   if(x%2==0){
      printf("%d is Even",x);
   }
   else{
      printf("%d is odd",x);
   }
   return 0;
}
```

OUTPUT:

Enter the value x:54

54 is Even

PASSING CRITERIA:

```
#include <stdio.h>

int main() {
   float marks;
   printf("Enter the marks of the student: ");
   scanf("%f", &marks);
   if(marks >= 40 && marks <=100){
      printf("Passed");
```

```
    }
    else if(marks < 0 || marks > 100){
        printf("Enter a Valid mark");
    }
    else{
        printf("Failed");
    }
    return 0;
}
```

OUTPUT:

Enter the marks of the student: 34

Failed

POSITIVE, NEGATIVE, ZERO:

```
#include <stdio.h>
int main() {
    int num;
    printf("Enter the Number ");
    scanf("%d", &num);
    if(num > 0){
        printf("Positive Number ");
    }
    else if(num < 0){
        printf("Negative Number ");
    }
    else if(num == 0){
```

```
    printf("Zero");
  }
  else{
    printf("Enter a Valid input ");
  }
  return 0;
}
```

OUTPUT:

Enter the Number 0

Zero

TRIANGLE TYPE CHECKER:

```
#include<stdio.h>

int main(){
  int s1,s2,s3;
  printf("Enter the value of side 1:");
  scanf("%d",&s1);
  printf("Enter the value of side 2:");
  scanf("%d",&s2);
  printf("Enter the value of side 3:");
  scanf("%d",&s3);
  if(s1 > 0 && s2 > 0 && s3 > 0){
    if(s1 == s2 && s2 == s3){
      printf("Equilateral Triangle");
    }
```

```
    else{
        printf("Not an Equilateral Triangle");
    }
  }
  else{
    printf("Enter Valid Side values");
  }
  return 0;
}
```

OUTPUT:

Enter the value of side 1:43

Enter the value of side 2:9

Enter the value of side 3:3

Not an Equilateral Triangle

ARITHMETIC OPERATIONS:

```
#include <stdio.h>

int main() {
  char op;
  int num1, num2;
  printf("Enter the first value: ");
  scanf("%d",&num1);
  printf("Enter the second value: ");
  scanf("%d",&num2);
  printf("Enter the Operation: ");
```

```
    getchar();
    scanf("%c",&op);
    switch(op){
        case '+':
        printf("%d\n", num1 + num2);
        break;
        case '-':
        printf("%d\n", num1 - num2);
        break;
        case '*':
        printf("%d\n", num1 * num2);
        break;
        case '/':
            if (num2 != 0)
                printf("%d\n", num1 / num2);
            else
                printf("Error, Division by zero\n");
            break;
        default: printf("Invalid operator\n");
    }
    return 0;
}
```

OUTPUT:

```
Enter the first value: 7
Enter the second value: 9
Enter the Operation: -
-2
```

DAY CHECK:

```
#include <stdio.h>

int main() {
   int day;
   printf("Enter a Number to find the day: ")
   scanf("%d", &day);
   switch(day){
      case 1:
      printf("Monday\n");
      break;
      case 2: printf("Tuesday\n");
      break;
      case 3:
      printf("Wednesday\n");
      break;
      case 4:
      printf("Thursday\n");
      break;
      case 5:
      printf("Friday\n");
      break;
      case 6:
      printf("Saturday\n");
      break;
      case 7:
      printf("Sunday\n");
      break;
      default:
```

```
        printf("Invalid input\n");
    }
    return 0;
}
```

OUTPUT:

Enter a Number to find the day: 6

Saturday

GRADE CHECK:

```
#include <stdio.h>

int main() {
    char grade;
    printf("Enter the Grade: ");
    scanf("%c", &grade);
    switch(grade) {
        case 'A':
        case 'a':
        printf("Excellent\n");
        break;
        case 'B':
        case 'b':
        printf("Good\n");
        break;
        case 'C':
        case 'c':
```

```
        printf("Average\n");
        break;
        case 'D':
        case 'd':
        printf("Poor\n");
        break;
        case 'F':
        case 'f':
        printf("Fail\n");
        break;
        default:
        printf("Invalid grade\n");
    }
    return 0;
}
```

OUTPUT:

Enter the Grade: D

Poor

LEAP YEAR:

```
#include <stdio.h>

int main() {
    int year;
    printf("Enter the year: ");
    scanf("%d", &year);
```

```
    switch((year % 4 == 0 && year % 100 != 0) || (year % 400 == 0)){
        case 1:
        printf("Leap Year\n");
        break;
        case 0:
        printf("Not a Leap Year\n");
        break;
        default:
        printf("Invalid input\n");
    }
    return 0;
}
```

OUTPUT:

Enter the year: 2020

Leap Year

MENU ARITHMETIC :

```
#include <stdio.h>

int main() {
    int choice, num1, num2;
    printf("Menu:\n");
    printf("1. Addition\n");
    printf("2. Subtraction\n");
    printf("3. Multiplication\n");
    printf("4. Division\n");
```

```
printf("5. Exit\n");
printf("Enter your choice: ");
scanf("%d", &choice);
if (choice != 5) {
   printf("Enter two numbers: ");
   scanf("%d %d", &num1, &num2);
}
switch(choice) {
   case 1:
   printf("%d\n", num1 + num2);
   break;
   case 2:
   printf("%d\n", num1 - num2);
   break;
   case 3:
   printf("%d\n", num1 * num2);
   break;
   case 4:
   if (num2 != 0)
      printf("%f\n", (float)num1 / num2);
   else
      printf("Error! Division by zero.\n");
   break;
   case 5:
   printf("Exiting...\n");
   break;
   default:
   printf("Invalid choice\n");
}
return 0;
```

```
}
```

OUTPUT:

```
Menu:
1. Addition
2. Subtraction
3. Multiplication
4. Division
5. Exit
Enter your choice: 4
Enter two numbers: 9
3
3.000000
```

MONTHS:

```
#include <stdio.h>
int main() {
   int month;
   printf("Enter the Number to find Month: ");
   scanf("%d", &month);
   switch(month){
      case 1:
      printf("January\n");
      break;
      case 2:
      printf("February\n");
      break;
```

```
case 3:
printf("March\n");
break;
case 4:
printf("April\n");
break;
case 5:
printf("May\n");
break;
case 6:
printf("June\n");
break;
case 7:
printf("July\n");
break;
case 8:
printf("August\n");
break;
case 9:
printf("September\n");
break;
case 10:
printf("October\n");
break;
case 11:
printf("November\n");
break;
case 12:
printf("December\n");
break;
```

```
    default:
    printf("Invalid input\n");
  }
  return 0;
}
```

OUTPUT:

Enter the Number to find Month: 4

April

SHAPES AREA:

```
#include <stdio.h>
#include <math.h>

int main() {
  int choice;
  float area, radius, length, width, base, height;

  printf("Choose the shape to calculate the area:\n");
  printf("1. Circle\n");
  printf("2. Rectangle\n");
  printf("3. Triangle\n");
  scanf("%d", &choice);

  switch(choice) {
    case 1:
      printf("Enter the radius of the circle: ");
```

```
            scanf("%f", &radius);
            area = M_PI * radius * radius;
            printf("Area of Circle: %.2f\n", area);
            break;
        case 2:
            printf("Enter the length and width of the rectangle: ");
            scanf("%f %f", &length, &width);
            area = length * width;
            printf("Area of Rectangle: %.2f\n", area);
            break;
        case 3:
            printf("Enter the base and height of the triangle: ");
            scanf("%f %f", &base, &height);
            area = 0.5 * base * height;
            printf("Area of Triangle: %.2f\n", area);
            break;
        default:
            printf("Invalid choice\n");
    }
    return 0;
}
```

OUTPUT:

```
Choose the shape to calculate the area:
1. Circle
2. Rectangle
3. Triangle
1
Enter the radius of the circle: 4
```

Area of Circle: 50.27

TRAFFIC LIGHT:

```
#include <stdio.h>

int main() {
   char light;
   printf("Enter the Light: ");
   scanf("%c", &light);
   switch(light) {
      case 'R':
      case 'r':
      printf("Stop\n");
      break;
      case 'Y':
      case 'y':
      printf("Get Ready\n");
      break;
      case 'G':
      case 'g':
      printf("Go\n");
      break;
      default:
      printf("Invalid input\n");
   }
   return 0;
}
```

OUTPUT:

Enter the Light: G

Go

VOWEL:

```
#include <stdio.h>

int main() {
   char ch;
   printf("Enter the Letter: ");
   scanf("%c", &ch);
   switch(ch){
      case 'a':
      case 'e':
      case 'i':
      case 'o':
      case 'u':
      case 'A':
      case 'E':
      case 'I':
      case 'O':
      case 'U':
      printf("Vowel\n");
      break;
      default:
      printf("Consonant\n");
```

```
    }
    return 0;
}
```

OUTPUT:

Enter the Letter: s

Consonant

WORD REPRESENTATION :

```
#include <stdio.h>

int main() {
    int num;
    printf("Enter the single digit Number: ");
    scanf("%d", &num);
    switch(num) {
        case 0:
        printf("Zero\n");
        break;
        case 1:
        printf("One\n");
        break;
        case 2:
        printf("Two\n");
        break;
        case 3:
        printf("Three\n");
```

```
        break;
        case 4:
        printf("Four\n");
        break;
        case 5:
        printf("Five\n");
        break;
        case 6:
        printf("Six\n");
        break;
        case 7:
        printf("Seven\n");
        break;
        case 8:
        printf("Eight\n");
        break;
        case 9:
        printf("Nine\n");
        break;
        default:
        printf("Invalid input\n");
    }
    return 0;
}
```

OUTPUT:

Enter the single digit Number: 3

Three
