1. **Write a program that determines whether a given integer is even or odd.**

```
#include <stdio.h>

int main() {
   int number;

   printf("Enter an integer: ");
   scanf("%d", &number);

   if (number % 2 == 0) {
      printf("%d is even.\n", number);
   } else {
      printf("%d is odd.\n", number);
   }

   return 0;
}
```

```
Enter an integer: 2
2 is even.
```

2. **Write a program that finds the largest of three numbers entered by the user.**

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

```
int main() {
    float num1, num2, num3;

    printf("Enter three numbers:\n");
    printf("Number 1: ");
    scanf("%f", &num1);
    printf("Number 2: ");
    scanf("%f", &num2);
    printf("Number 3: ");
    scanf("%f", &num3);

    float largest = num1;

    if (num2 > largest) {
        largest = num2;
    }
    if (num3 > largest) {
        largest = num3;
    }

    printf("The largest number is: %f\n", largest);

    return 0;
}
```

OUTPUT:

```
Enter three numbers:
Number 1: 5
Number 2: 3
Number 3: 6
The largest number is: 6.000000
```

3. Write a program that performs basic arithmetic operations (+, -, *, /) based on user input using a switch statement.

```
#include <stdio.h>

int main() {
   char operator;
   double num1, num2, result;

   printf("Enter the first number: ");
   scanf("%lf", &num1);
   printf("Enter an operator (+, -, *, /): ");
   scanf(" %c", &operator);
   printf("Enter the second number: ");
   scanf("%lf", &num2);

   switch (operator) {
      case '+':
         result = num1 + num2;
         printf("%f + %f = %f\n", num1, num2, result);
         break;
      case '-':
         result = num1 - num2;
         printf("%f - %f = %f\n", num1, num2, result);
         break;
      case '*':
         result = num1 * num2;
         printf("%f * %f = %f\n", num1, num2, result);
         break;
      case '/':
         if (num2 != 0) {
```

```
            result = num1 / num2;
            printf("%f / %f = %f\n", num1, num2, result);
        } else {
            printf("Error: Division by zero is not allowed.\n");
        }
        break;
    default:
        printf("Error: Invalid operator.\n");
        break;
  }

  return 0;
}
```

OUTPUT:

```
Enter the first number: 8
Enter an operator (+, -, *, /): +
Enter the second number: 10
8.000000 + 10.000000 = 18.000000
```

4. Write a program that determines whether a given character is a vowel or consonant.

```
#include <stdio.h>

int main() {
  char ch;
```

```
    printf("Enter a character: ");
    scanf(" %c", &ch);

    if ((ch >= 'a' && ch <= 'z') || (ch >= 'A' && ch <= 'Z')) {
        char lowerCh = (ch >= 'A' && ch <= 'Z') ? ch + 32 : ch; // Convert uppercase to lowercase

        switch (lowerCh) {
            case 'a':
            case 'e':
            case 'i':
            case 'o':
            case 'u':
                printf("%c is a vowel.\n", ch);
                break;
            default:
                printf("%c is a consonant.\n", ch);
                break;
        }
    } else {
        printf("%c is not an alphabetic character.\n", ch);
    }

    return 0;
}
```

OUTPUT:

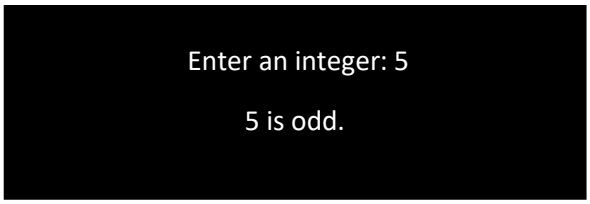
```
Enter a character: a
a is a vowel.
```

5. Write a program that takes a day number (1-7) and prints the corresponding day of the week using a switch statement.

```
#include <stdio.h>

int main() {
   int day;

   printf("Enter a day number (1-7): ");
   scanf("%d", &day);

   switch (day) {
      case 1:
         printf("Day %d is Monday.\n", day);
         break;
      case 2:
         printf("Day %d is Tuesday.\n", day);
         break;
      case 3:
         printf("Day %d is Wednesday.\n", day);
         break;
      case 4:
         printf("Day %d is Thursday.\n", day);
         break;
      case 5:
         printf("Day %d is Friday.\n", day);
         break;
      case 6:
```

```
            printf("Day %d is Saturday.\n", day);
            break;
        case 7:
            printf("Day %d is Sunday.\n", day);
            break;
        default:
            printf("Error: Invalid day number. Please enter a number between 1 and 7.\n");
            break;
    }

    return 0;
}
```

OUTPUT:



6. Write a program that takes a month number (1-12) and prints the corresponding month name using a switch statement.

```
#include <stdio.h>

int main() {
    int month;

    printf("Enter month number (1-12): ");
```

```
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 month number. Please enter a number between 1 and 12.\n");
    }

    return 0;
}
```

OUTPUT:

```
Enter month number (1-12): 11
November
```