A 1 - char unit;

```
  float temperature, convertedTemperature;

    printf("Enter temperature followed by unit (C or F): ");
  scanf("%f %c", &temperature, &unit);

  if (unit == 'C' || unit == 'c') {
      convertedTemperature = (temperature * 9 / 5) + 32;
      printf("%.2f Celsius is equal to %.2f Fahrenheit\n", temperature, convertedTemperature);
  } else if (unit == 'F' || unit == 'f') {
      convertedTemperature = (temperature - 32) * 5 / 9;
      printf("%.2f Fahrenheit is equal to %.2f Celsius\n", temperature, convertedTemperature);
  } else {
      printf("Invalid unit entered. Please enter C for Celsius or F for Fahrenheit.\n");
  }
```

A 2 - float inputArea;

```
  float base, height, length, width, side;

  printf("Enter the area to check: ");
  scanf("%f", &inputArea);


  printf("Enter the base and height of the triangle: ");
  scanf("%f %f", &base, &height);
  float triangleArea = 0.5 * base * height;
  if (triangleArea == inputArea) {
      printf("The given area matches the area of the triangle.\n");
  } else {
      printf("The given area does not match the area of the triangle.\n");
  }


  printf("Enter the side of the square: ");
  scanf("%f", &side);
  float squareArea = side * side;
  if (squareArea == inputArea) {
      printf("The given area matches the area of the square.\n");
  } else {
      printf("The given area does not match the area of the square.\n");
  }
```

```
  printf("Enter the length and width of the rectangle: ");
  scanf("%f %f", &length, &width);
  float rectangleArea = length * width;
  if (rectangleArea == inputArea) {
      printf("The given area matches the area of the rectangle.\n");
  } else {
      printf("The given area does not match the area of the rectangle.\n");
  }
```

A 3 -

```
  float marks1, marks2, marks3, marks4, marks5;
  float total, percentage;
  char grade;


  printf("Enter the marks for subject 1: ");
  scanf("%f", &marks1);
  printf("Enter the marks for subject 2: ");
  scanf("%f", &marks2);
  printf("Enter the marks for subject 3: ");
  scanf("%f", &marks3);
  printf("Enter the marks for subject 4: ");
  scanf("%f", &marks4);
  printf("Enter the marks for subject 5: ");
  scanf("%f", &marks5);


  total = marks1 + marks2 + marks3 + marks4 + marks5;
  percentage = (total / 500) * 100;


  if (percentage < 25) {
      grade = 'F';
  } else if (percentage >= 25 && percentage < 45) {
      grade = 'E';
  } else if (percentage >= 45 && percentage < 50) {
      grade = 'D';
  } else if (percentage >= 50 && percentage < 60) {
      grade = 'C';
```

```
  } else if (percentage >= 60 && percentage < 80) {
      grade = 'B';
  } else {
      grade = 'A';
  }
  printf("Total Marks: %.2f\n", total);
  printf("Percentage: %.2f%%\n", percentage);
  printf("Grade: %c\n", grade);
```

A 4 -

```
int rollNumber;
  char name[50], fname[50], mname[50], address[100], contact[20];
  int marksPhysics, marksChemistry, marksCompApp;
  int total;
  float percentage;
  char division[20];

  // Input student details
  printf("Input the Roll Number of the student: ");
  scanf("%d", &rollNumber);

  printf("Student name: ");
  scanf(" %[^\n]s", name); // To read the full line with spaces

  printf("Father's name: ");
  scanf(" %[^\n]s", fname); // To read the full line with spaces

  printf("Mother's name: ");
  scanf(" %[^\n]s", mname); // To read the full line with spaces

  printf("Address: ");
  scanf(" %[^\n]s", address); // To read the full line with spaces

  printf("Contact: ");
  scanf("%s", contact);

  // Input marks of three subjects
  printf("Input the marks of Physics, Chemistry and Computer Application: ");
  scanf("%d %d %d", &marksPhysics, &marksChemistry, &marksCompApp);

  // Calculate total and percentage
  total = marksPhysics + marksChemistry + marksCompApp;
  percentage = (float)total / 3.0;
```

```
  // Determine division based on percentage
  if (percentage >= 60) {
      strcpy(division, "First");
  } else if (percentage >= 50) {
      strcpy(division, "Second");
  } else if (percentage >= 40) {
      strcpy(division, "Third");
  } else {
      strcpy(division, "Fail");
  }

  // Output the results
  printf("\nRoll Number: %d\n", rollNumber);
  printf("Name: %s\n", name);
  printf("Father's Name: %s\n", fname);
  printf("Mother's Name: %s\n", mname);
  printf("Address: %s\n", address);
  printf("Contact: %s\n", contact);
  printf("Marks: Physics: %d, Chemistry: %d, Computer Application: %d\n", marksPhysics,
marksChemistry, marksCompApp);
  printf("Total Marks: %d\n", total);
  printf("Percentage: %.2f%%\n", percentage);
  printf("Division: %s\n", division);
```

A 5 -

```
  char name, address, bankDetails;
  float salary, adjustedSalary;
  int holidays;

   printf("Enter the employee's name: ");
  scanf(" %[^\n]s", name);
  printf("Enter the employee's address: ");
  scanf(" %[^\n]s", address);

  printf("Enter the employee's bank details: ");
  scanf(" %[^\n]s", bankDetails);
  printf("Enter the employee's salary: ");
  scanf("%f", &salary);

  printf("Enter the number of holidays taken: ");
  scanf("%d", &holidays);
```

```
  if (holidays == 1) {
      adjustedSalary = salary;
  } else if (holidays >= 2 && holidays <= 5) {
      adjustedSalary = salary - (salary * 0.05); // 5% deduction
  } else if (holidays >= 6 && holidays <= 14) {
      adjustedSalary = salary - (salary * 0.10); // 10% deduction
  } else if (holidays == 15) {
      adjustedSalary = salary - (salary * 0.50); // 50% deduction
  } else {
      adjustedSalary = 0; // No salary
  }

   printf("\nEmployee Details:\n");
  printf("Name: %s\n", name);
  printf("Address: %s\n", address);
  printf("Bank Details: %s\n", bankDetails);
  printf("Original Salary: %.2f\n", salary);
  printf("Number of Holidays: %d\n", holidays);
  printf("Adjusted Salary: %.2f\n", adjustedSalary);


A 6 - int units;
  float amount, discount, total_pay_amount;
  char name[50];



  printf("Enter your name: ");
  scanf("%s", name);

  printf("Enter the number of units consumed: ");
  scanf("%d", &units);


  amount = units * 10;


  if (units >= 1 && units <= 10) {
      discount = 0.10 * amount;
  } else if (units >= 11 && units <= 20) {
      discount = 0.15 * amount;
```

```
  } else if (units >= 21 && units <= 40) {
      discount = 0.30 * amount;
  } else if (units > 40) {
      discount = 0.50 * amount;
  } else {
      discount = 0.0;
  }
  total_pay_amount = amount - discount;


  printf("\nName: %s\n", name);
  printf("Units: %d\n", units);
  printf("Amount: %.2f\n", amount);
  printf("Discount: %.2f\n", discount);
  printf("Total Pay Amount: %.2f\n", total_pay_amount);
```

A 7 -

```
  char choice;
  printf("Enter your choice (e/o/v/m/w/c/g/l/r/h/s/f/k): ");
  scanf(" %c", &choice);

  if (choice == 'e' || choice == 'o') {
      int num;
      printf("Enter a number: ");
      scanf("%d", &num);
      if (num % 2 == 0) {
          printf("%d is even.\n", num);
      } else {
          printf("%d is odd.\n", num);
      }
  } else if (choice == 'v') {
      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");
      }
  } else if (choice == 'm') {
      int month;
      printf("Enter month number (1-12): ");
```

```
    scanf("%d", &month);
    if (month == 1) {
        printf("January\n");
    } else if (month == 2) {
        printf("February\n");
    } else if (month == 3) {
        printf("March\n");
    } else if (month == 4) {
        printf("April\n");
    } else if (month == 5) {
        printf("May\n");
    } else if (month == 6) {
        printf("June\n");
    } else if (month == 7) {
        printf("July\n");
    } else if (month == 8) {
        printf("August\n");
    } else if (month == 9) {
        printf("September\n");
    } else if (month == 10) {
        printf("October\n");
    } else if (month == 11) {
        printf("November\n");
    } else if (month == 12) {
        printf("December\n");
    } else {
        printf("Invalid month number.\n"); }
} else if (choice == 'w') {
    int day;
    printf("Enter week day number (1-7): ");
    scanf("%d", &day);
    if (day >= 1 && day <= 7) {
        printf("Valid week day number.\n");
        if(day == 1) printf("Sunday\n");
        else if(day == 2) printf("Monday\n");
        else if(day == 3) printf("Tuesday\n");
        else if(day == 4) printf("Wednesday\n");
        else if(day == 5) printf("Thursday\n");
        else if(day == 6) printf("Friday\n");
        else if(day == 7) printf("Saturday\n");
    } else {
        printf("Invalid week day number.\n");
```

```
    }
} else if (choice == 'c') {
    char operator;
    double num1, num2;
    printf("Enter an operator (+, -, *, /): ");
    scanf(" %c", &operator);
    printf("Enter two operands: ");
    scanf("%lf %lf", &num1, &num2);
    if (operator == '+') {
        printf("%.2lf + %.2lf = %.2lf\n", num1, num2, num1 + num2);
    } else if (operator == '-') {
        printf("%.2lf - %.2lf = %.2lf\n", num1, num2, num1 - num2);
    } else if (operator == '*') {
        printf("%.2lf * %.2lf = %.2lf\n", num1, num2, num1 * num2);
    } else if (operator == '/') {
        if (num2 != 0) {
            printf("%.2lf / %.2lf = %.2lf\n", num1, num2, num1 / num2);
        } else {
            printf("Division by zero is not allowed.\n");
        }
    } else {
        printf("Invalid operator.\n");
    }
} else if (choice == 'g') {
    char gender;
    printf("Enter gender (m for male, f for female, o for other): ");
    scanf(" %c", &gender);
    if (gender == 'm') {
        printf("Gender: Male\n");
    } else if (gender == 'f') {
        printf("Gender: Female\n");
    } else if (gender == 'o') {
        printf("Gender: Other\n");
    } else {
        printf("Invalid input.\n");
    }
} else if (choice == 'l') {
    char ch;
    printf("Enter a letter: ");
    scanf(" %c", &ch);
    if (ch == 'a' || ch == 'e' || ch == 'i' || ch == 'o' || ch == 'u' ||
        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);
        }
    } else if (choice == 'r') {
        int a, b;
        printf("Enter two numbers: ");
        scanf("%d %d", &a, &b);
        if (a > b) {
            printf("Maximum number is %d\n", a);
        } else {
            printf("Maximum number is %d\n", b);
        }
    } else if (choice == 'h') {
        int a, b, c;
        printf("Enter three numbers: ");
        scanf("%d %d %d", &a, &b, &c);
        if (a > b && a > c) {
            printf("Maximum number is %d\n", a);
        } else if (b > c) {
            printf("Maximum number is %d\n", b);
        } else {
            printf("Maximum number is %d\n", c);
        }
    } else if (choice == 's') {
        printf("Enter your choice (w: with variable, o: without variable): ");
        scanf(" %c", &choice);
        if (choice == 'w') {
            int a, b, temp;
            printf("Enter two numbers: ");
            scanf("%d %d", &a, &b);
            temp = a;
            a = b;
            b = temp;
            printf("After swapping: a = %d, b = %d\n", a, b);
        } else if (choice == 'o') {
            int a, b;
            printf("Enter two numbers: ");
            scanf("%d %d", &a, &b);
            a = a + b;
            b = a - b;
            a = a - b;
```

```
        printf("After swapping: a = %d, b = %d\n", a, b);
    } else {
        printf("Invalid choice.\n");
    }
} else if (choice == 'f') {
    int hours, minutes;
    printf("Enter time in 24-hour format (HH MM): ");
    scanf("%d %d", &hours, &minutes);
    if (hours < 12) {
        printf("Time is %02d:%02d AM\n", hours, minutes);
    } else {
        hours = hours % 12;
        if (hours == 0) hours = 12;
        printf("Time is %02d:%02d PM\n", hours, minutes);
    }
} else if (choice == 'k') {
    printf("First Line: QWERTYUIOP\n");
printf("Second Line: ASDFGHJKL\n");
printf("Third Line: ZXCVBNM\n"); } else
{
    printf("Invalid choice.\n");
}
```