Program Structure:
1. Header File (projectile.h):
```
#include<stdio.h>
#define PROJECTILE_H

#include <math.h>

double calculateRange(double initialVelocity, double angle);
double calculateMaxHeight(double initialVelocity, double angle);
double calculateTimeOfFlight(double initialVelocity, double angle);
```

2. Implementation File (projectile.c):

```
double calculateRange(double initialVelocity, double angle) {
    double g = 9.81;
    double angleRadians = angle * M_PI / 180;
    return (initialVelocity * initialVelocity * sin(2 * angleRadians))
/ g;
}

double calculateMaxHeight(double initialVelocity, double angle) {
    double g = 9.81;
    double angleRadians = angle * M_PI / 180;
    return (initialVelocity * initialVelocity * sin(angleRadians) *
sin(angleRadians)) / (2 * g);
}

double calculateTimeOfFlight(double initialVelocity, double angle) {
    double g = 9.81;
    double angleRadians = angle * M_PI / 180;
    return (2 * initialVelocity * sin(angleRadians)) / g;
}
```

3. Main Program (main.c):

```
#include <stdio.h>

int main() {
    double initialVelocity, angle;

    printf("Enter initial velocity (m/s): ");
    scanf("%lf", &initialVelocity);

    printf("Enter angle of projection (degrees): ");
    scanf("%lf", &angle);
```

```c
    double range = calculateRange(initialVelocity, angle);
    double maxHeight = calculateMaxHeight(initialVelocity, angle);
    double timeOfFlight = calculateTimeOfFlight(initialVelocity,
angle);

    printf("Range: %.2f meters\n", range);
    printf("Maximum Height: %.2f meters\n", maxHeight);
    printf("Time of Flight: %.2f seconds\n", timeOfFlight);

    return 0;
}
```

Documentation:
Key Concepts and Formulas:
- Projectile motion is the motion of an object projected into the air with an initial velocity and angle.
- The range, maximum height, and time of flight can be calculated using the following formulas:
  - Range: $R = (v0^2 * \sin(2θ)) / g$
  - Maximum Height: $H = (v0^2 * \sin^2(θ)) / (2g)$
  - Time of Flight: $T = (2 * v0 * \sin(θ)) / g$
- v0 is the initial velocity, θ is the angle of projection, and g is the acceleration due to gravity.

Code Explanation:
- The #include <math.h> header file in C provides a collection of mathematical functions that can be used to perform various calculations.
- The main.c file prompts the user for input, calls the functions, and displays the results.
- The code includes angle conversion from degrees to radians using M_PI.

Challenges and Considerations:
- Ensure that the input angle is within the valid range (0 to 90 degrees) to avoid errors.
- Consider adding error handling for invalid input or potential numerical issues.
- For more complex scenarios, you might need to account for factors like air resistance or varying gravitational fields.

This program effectively calculates projectile motion parameters, incorporating a well-structured library and providing clear documentation.