



**Practical File  
Of**

**Course Code: CSEG1041  
School of Computer Science**

**Submitted By: Submitted To:  
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Course:B.Sc(Computer Science)  
Batch:2025-28  
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```

/*
Experiment 4.4
A town has a population of 100000.
The population increases at the rate of 10% per year for 10 years.
Program to find the population at the end of each year.
*/
#include <stdio.h>
#include <math.h>

int main() {
    printf("=====\n");
    printf("Name: DYUTI SHARMA\n");
    printf("SAP ID: 590021983\n");
    printf("Experiment: 4.4 - Population Growth\n");
    printf("=====\n\n");

    float population = 100000;
    float rate = 0.10; // 10% growth
    int years = 10;

    printf("Year\tPopulation\n");
    printf("-----\n");

    for (int i = 1; i <= years; i++) {
        population = population + (population * rate);
        printf("%d\t%.2f\n", i, population);
    }

    return 0;
}

```

OUTPUT:

```
=====
Name: DYUTI SHARMA
SAP ID: 590021983
Experiment: 4.4 – Population Growth
=====

Year      Population
-----
1      110000.00
2      121000.00
3      133100.00
4      146410.00
5      161051.00
6      177156.09
7      194871.70
8      214358.88
9      235794.77
10     259374.25
Program ended with exit code: 0
```

```

/*
Experiment 4.5
Ramanujan number is the smallest number that can be expressed
as the sum of two cubes in two different ways.
Example:  $1729 = 1^3 + 12^3 = 9^3 + 10^3$ 
*/

```

```

#include <stdio.h>

```

```

int main() {
    printf("=====\n");
    printf("Name: DYUTI SHARMA\n");
    printf("SAP ID: 590021983\n");
    printf("Experiment: 4.5 - Ramanujan Numbers\n");
    printf("=====\n\n");
}

```

```

    int limit = 2000;
    printf("Ramanujan numbers up to %d are:\n", limit);
    printf("-----\n");

```

```

    for (int a = 1; a * a * a < limit; a++) {
        for (int b = a + 1; b * b * b < limit; b++) {
            for (int c = a + 1; c * c * c < limit; c++) {
                for (int d = c + 1; d * d * d < limit; d++) {
                    if (a * a * a + b * b * b == c * c * c + d * d * d
                        && a != c && a != d && b != c && b != d) {
                        printf("%d = %d^3 + %d^3 = %d^3 + %d^3\n",
                               a * a * a + b * b * b, a, b, c, d);
                    }
                }
            }
        }
    }
}

```

```

    return 0;
}

```

OUTPUT:

```
=====
Name: DYUTI SHARMA
SAP ID: 590021983
Experiment: 4.5 – Ramanujan Numbers
=====

Ramanujan numbers up to 2000 are:
-----
1729 = 1^3 + 12^3 = 9^3 + 10^3
Program ended with exit code: 0
```