

Programming Fundamentals
Spring 2025

Target: (Repetition Structures)

Problem Set 3

1. Write code that count no of multiples of 5 present in the range given by user.
2. Write a program that takes a number and length of number from user and displays its digits individually on separate line.
3. Code the program that identifies if the given number is prime or not.
4. Code the appropriate loop that displays the factorial of a number.
5. Calculate the permutation

$$p(n, k) = n! / (n - k)! \quad n(n - 1)(n - 2) \dots (n - k + 1)$$

6. The sum of first n squares ($1+4+9+\dots+n^2$) is given by formula

$$\sum_{i=1}^n i^2 = \frac{n(n+1)(2n+1)}{6}$$

write a program that checks this formula by inputting n.

7. Code appropriate loop for the game which guesses that whether your number is smaller, greater or equal to the number which is generated by computer.