# CS 213 End-sem

## 2:30 PM – 5:30 PM, November 18, 2021

## Total Marks: 20

### Instructions

- This is a remotely proctored, open-book, timed programming exam.
- You are required to
  - Join your respective TA's Google Meet link, and,
  - Turn ON your video during the exam
- You are allowed to refer to reference material, but NOT allowed to copy code as is.
- You are NOT allowed to seek any human assistance, be it from your classmates or others.
- If found guilty, penalties will be applicable, and such cases will be reported to the Disciplinary Action Committee.
- You can share your queries, if any, with your respective TA.

### Questions

Write bash scripts to:

1. find the total size of all `.png` files in a directory. *2 marks*
2. find sum of squares of prime numbers upto a give number $n$. *2 marks*
3. print number of even and numbers in Fibonacci series (upto number $N$). *2 marks*
4. check whether a given string is palindrome[1] or not. *2 marks*
5. check whether a given year is leap year or not. *2 marks*

6. Refer to `pincode_dataset.txt`, which contains the information regarding pincodes, districts and states. Write a python program to:

- Plot a pie chart[2] depicting the distribution of the number of pincodes per state. *8 marks*
- Print the state containing the district with the maximum number of pincodes. *2 marks*

### Submission Guidelines

- Name your files as q1.sh, q2.sh, q3.sh, q4.sh, q5.sh and q6.py, respectively.
- Please zip all your files, and submit a single file named "*<roll-no>*.zip", where *<roll-no>* should be replaced with your IIT Dharwad roll number.
- You must submit your zip file on the Google Classroom, latest by 5:30 PM on November 18, 2021. Late submissions will be disqualified.

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[1] A palindrome is a word, sentence, verse, or even number that reads the same backward or forward.

[2] Pay special attention to the readability of the plots. Use appropriate labels, legends, titles, chart formats, etc. to this end.