Knight's Tour

5^{th} April 2021

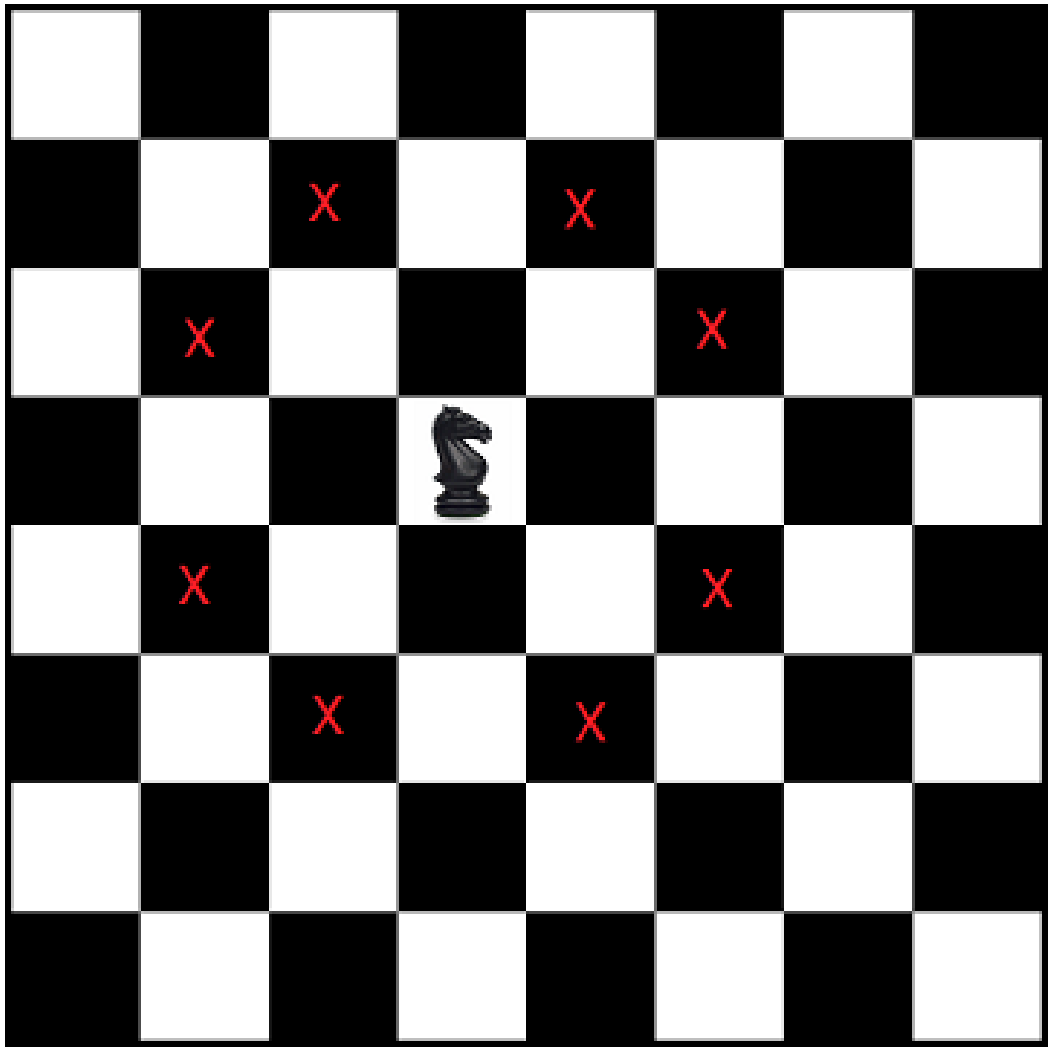
TEAM - 38

NAME	ROLLNO	BRANCH
Sanvitha	20wh5a0207	EEE
Suvidha	19wh1a0579	CSE
Lahari	19wh1a0590	CSE
Rajani	19wh1a1241	IT
Teja Sri	19wh1a1237	IT
Srinidhi	19wh1a05b3	CSE

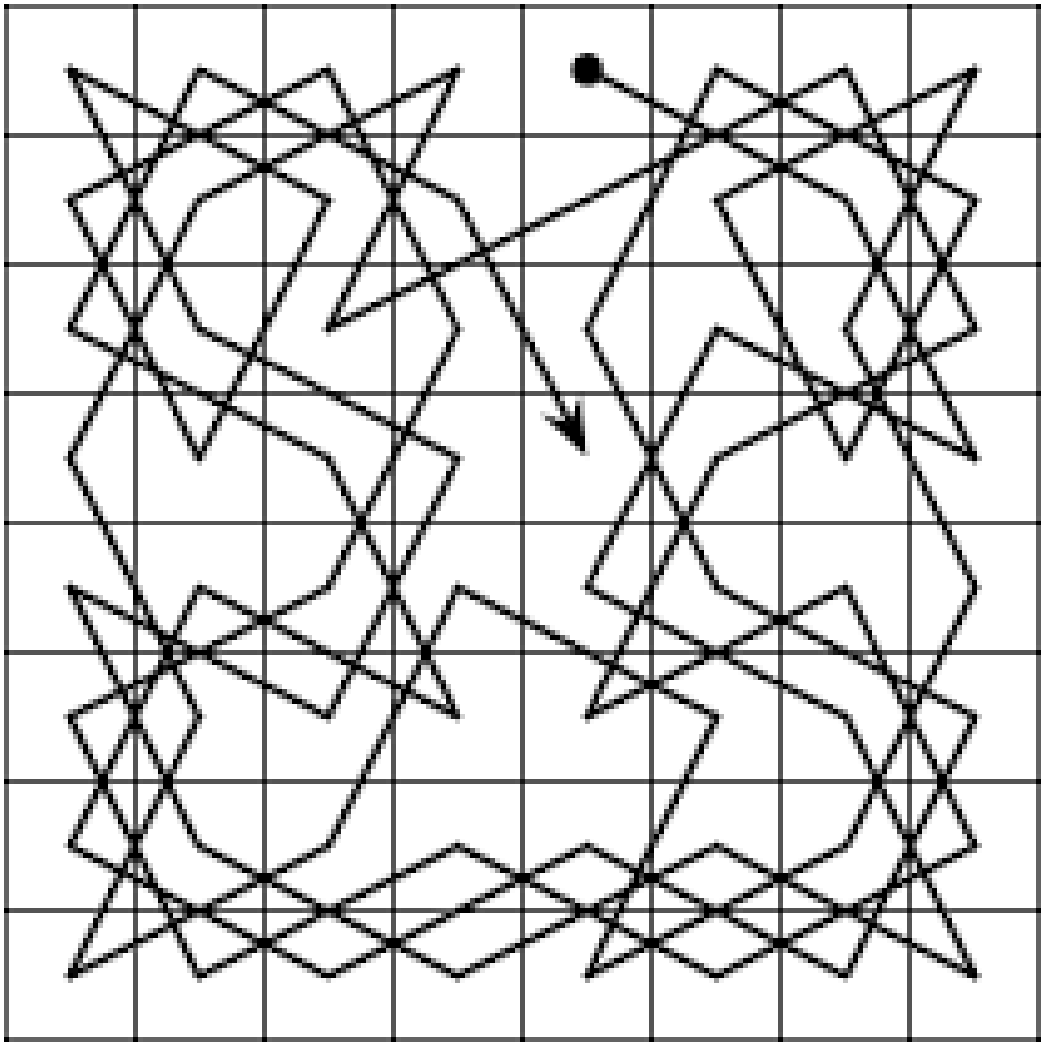
Introduction

1. m x m chessboard.
2. Knight must visit every square without repeats.
3. 1 <= m <= 100
4. The segments may intersect.
5. Open tour

Knight



An Open Knight's Tour



Approach

1. We start the knight tour from a desired location.
2. We try knight's 8 possible moves one by one, if a move is valid and the knight hasn't already visited that square then make the next move to that square.

- Warnsdorff's algorithm.
- We move the knight to the position which has the least possible moves.
- Keep visiting the unvisited squares until knight visits each square of the chess board.

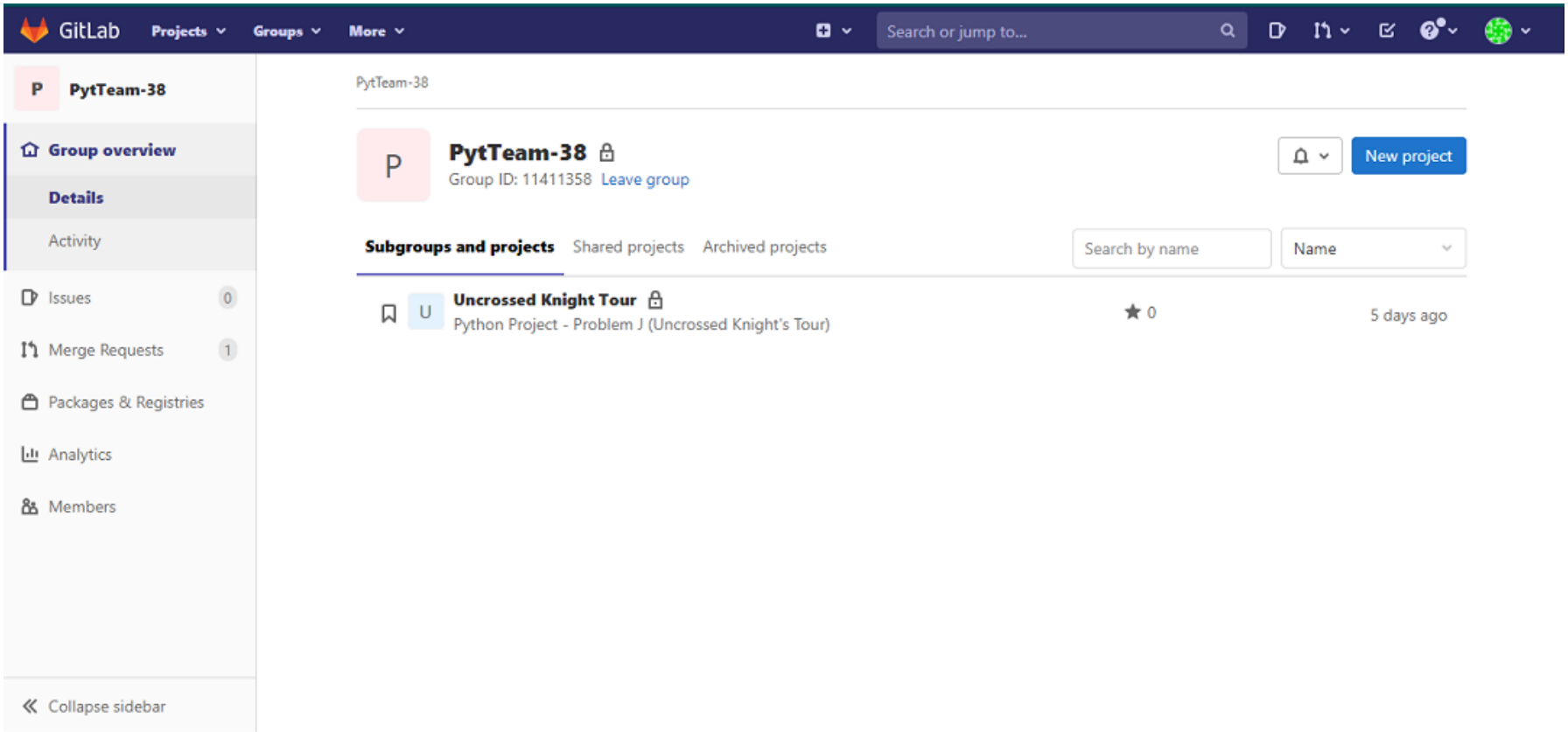
Learnings

- Object Oriented Programming
- Exception Handling
- Latex and Texmaker
- Git commands
- GitLab
- Python GUI libraries

Challenges

- **PROBLEM** : Uploading files in GitLab.
  SOLUTION: Referred GitLab docs
  GitLab docs
- **PROBLEM** : Index error
  SOLUTION : Exception Handling
  Python docs
- **PROBLEM** : Python GUI library.
  SOLUTION : Explored each library individually.
  Python GUI Programming

GIT Repo


GitLab
Projects
Groups
More
Search or jump to...
PytTeam-38
Group overview
Details
Activity
Issues
0
Merge Requests
1
Packages & Registries
Analytics
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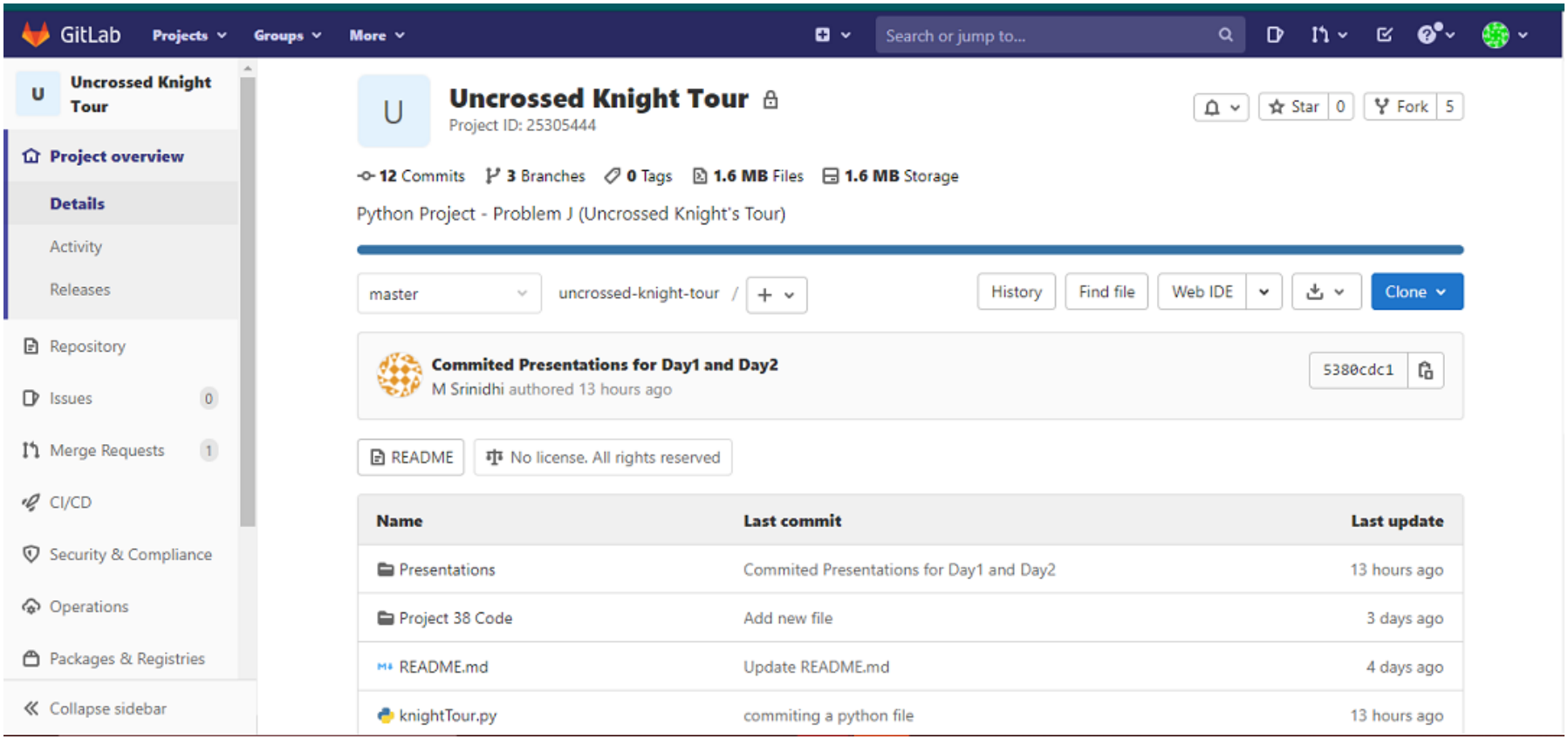
PytTeam-38
PytTeam-38
Group ID: 11411358 Leave group
New project
Subgroups and projects
Shared projects
Archived projects
Search by name
Name
Uncrossed Knight Tour
Python Project - Problem J (Uncrossed Knight's Tour)
0
5 days ago


GitLab
Projects
Groups
More
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Uncrossed Knight Tour
Project overview
Details
Activity
Releases
Repository
Issues 0
Merge Requests 1
CI/CD
Security & Compliance
Operations
Packages & Registries
Collapse sidebar
U
Uncrossed Knight Tour
Project ID: 25305444
Star 0
Fork 5
12 Commits
3 Branches
0 Tags
1.6 MB Files
1.6 MB Storage
Python Project - Problem J (Uncrossed Knight's Tour)
master
uncrossed-knight-tour /
History
Find file
Web IDE
Clone
Commited Presentations for Day1 and Day2
M Srinidhi authored 13 hours ago
5380cdc1
README
No license. All rights reserved
Name
Last commit
Last update
Presentations
Commited Presentations for Day1 and Day2
13 hours ago
Project 38 Code
Add new file
3 days ago
README.md
Update README.md
4 days ago
knightTour.py
commiting a python file
13 hours ago

You can find our project here.
https://gitlab.com/PytTeam-38/uncrossed-knight-tour

Algorithm

1. Input the size of the board and initial position.
2. Create a board and intialize all the squares in the board to -1.
3. Set p to the desired initial position on the board.
4. Mark the board at p with the move number “1”.

1. Do the following until every square is visited once:
   1.1 Let pos be the list of possible(valid) moves from p.
   1.2 Set p to be the position in pos with minimum possible moves.
   1.3 Mark the board at p with the current move number.
2. Return the marked board.

Statistics

- Number of Lines of code - 168
- Number of Functions - 9
- Modules imported
  a) Pygame
  b) Sys

DEMO

Photo

Photo

SUVIDHA

SANVITHA

LAHARI

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