02/2020

SNAKE GAME PROJECT

At IU, June 08th 2020, Semester 2 (2019 – 2020)

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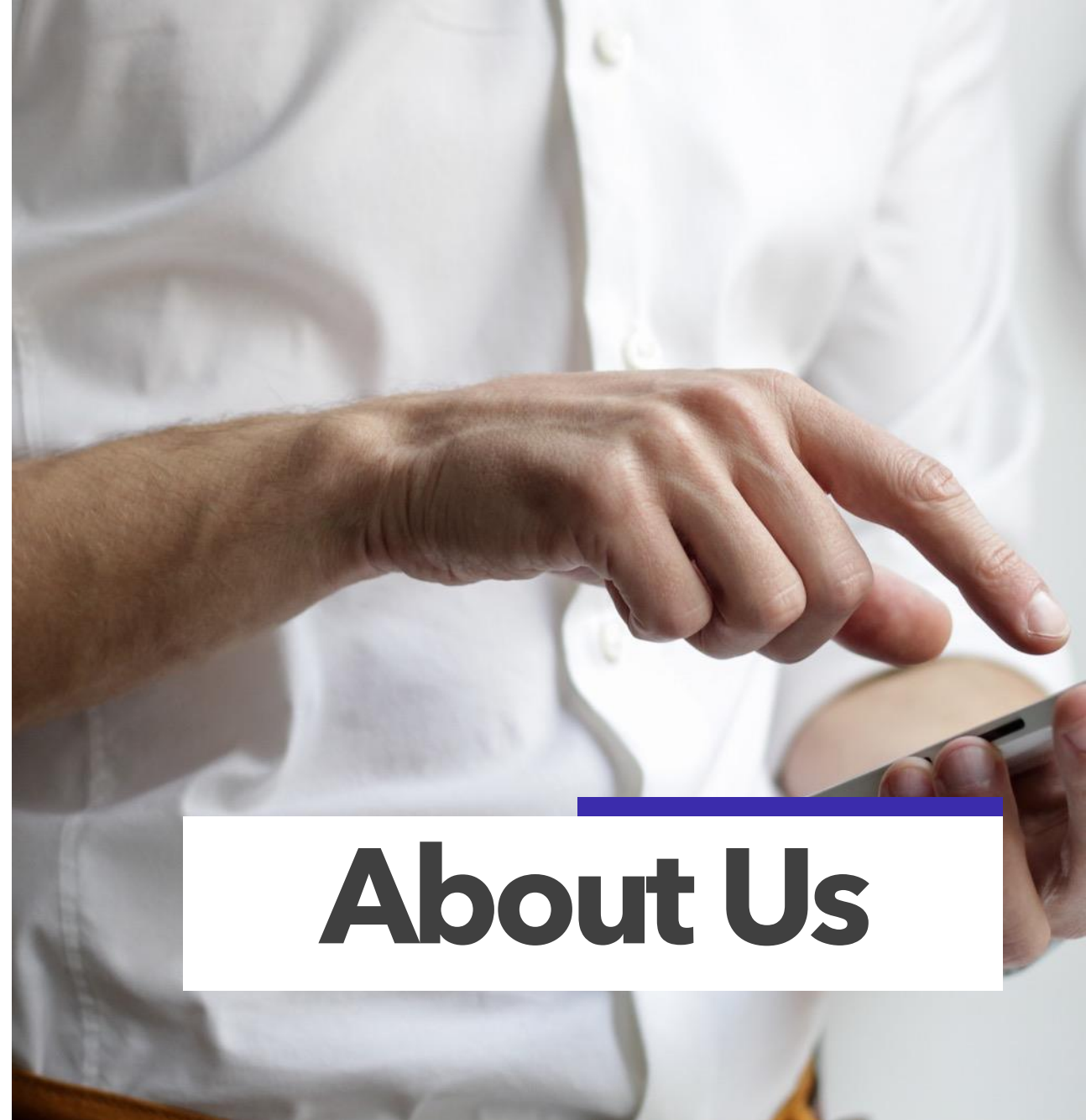ID: ITITIU19031 (30%)

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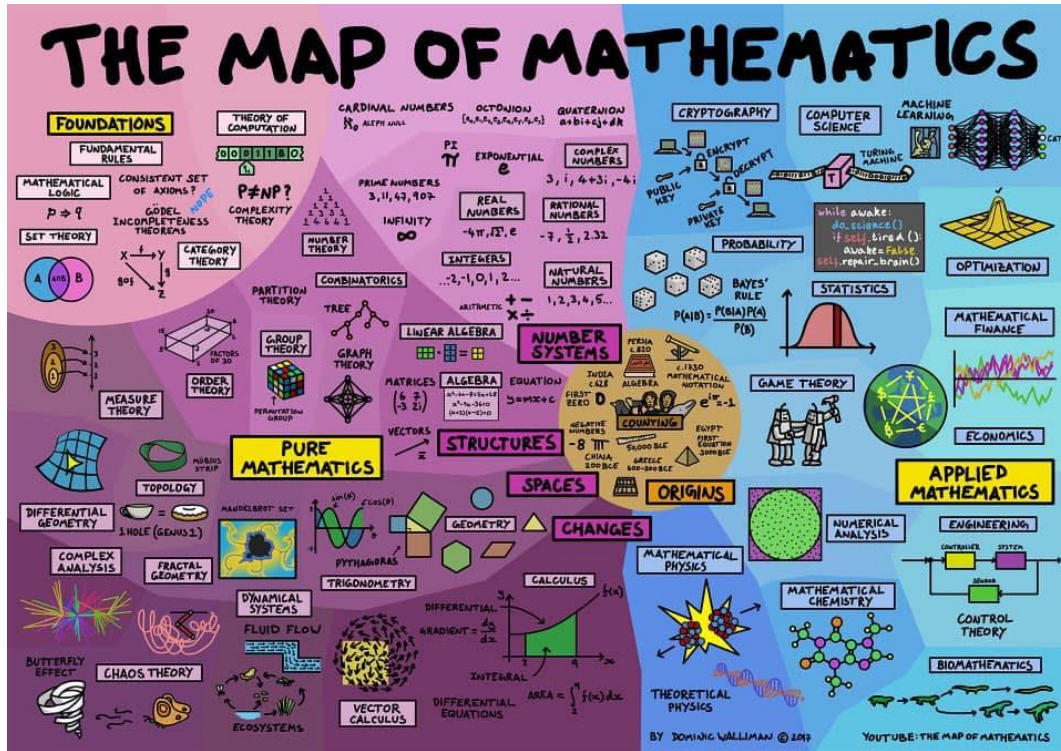
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CONTENT

SFML Library

https://www.sfml-dev.org/index.php

- Multi-media, multi-platform, and multi-language.
- Tutorial: included in GitHub with the name: Snake-Game-at-IU (public) – Full instruction to install the game

Food

- Three types of Fruit with random generator:
1. Apple: 2 points
2. Melon: 5 points
3. Strawberry: 10 points

ADDITIONAL FEATURES

Music

- Six (O6) suitable music included

- Can choose to **<u>pause or replay</u>** that music again without causing troubles

- Restart function: Reset the game and randomize music

Game Status

- Immediate troubles from players. How to solve?

- Pause, Replay, Restart, Mode Changing, and Exit button

Score Database

- Programmers wants players to achieve some extent of satisfaction through score comparison.

- No score is stored because player will continue playing over and over which decrease the working efficiency and attention, causing insomnia and headache if scores are stored

Game Mode (Part 01)

- Four (04) different Game Mode: SingleEasy, SingleHard, DoubleEasy, DoubleHard (changeable).
- Differentiating by "Delay" variable, Game Rules, and Obstacles

Game Mode (Part 02) – Delay variable

- Delay variable is the most important variables in determining the speed of snake.

=> Most will fail after 15 minutes at Easy Mode and 7.5 - 10 minutes at Hard Mode (Human Reaction ranging from 0.1 s <-> 0.3 s

- Easy: $Delay = 0.15(1 - 05\%)^{int\frac{Time}{30}}$

- Hard: $Delay = 0.10(1 - 10\%)^{int\frac{Time}{30}}$

Time Passed (s)	Delay (s) in Easy Mode	Delay (s) in Hard Mode
0	0.15	0.1
60	0.1353	0.081
240	0.0995	0.0478
300	0.0898	0.0348
450	0.0694	0.0205
600	0.0537	0.0121
900	0.0323	4.239×10^{-3}
1200	0.0193	1.478×10^{-3}
1800	6.91×10^{-3}	1.797×10^{-4}
2400	2.477×10^{-3}	2.185×10^{-5}
3600	3.184×10^{-4}	3.229×10^{-7}

Game Mode (Part 03) – Game Rules

EASY MODE

- Snake can pass wall, bite himself or other Snake
- Low Speed Initial, less Obstacles (still random)

HARD MODE

- Snake cannot pass wall, bite himself or other Snake
- High Speed Initial, more Obstacles (still random)

Game Mode (Part 04) – Obstacles

EASY MODE

- Durations: 20 seconds

After 35 seconds passed:

ObstacleNumber += 5;

HARD MODE

- Durations: 30 seconds

After 45 seconds passed:

ObstacleNumber += 15;

CONCLUSION

WORTH-PLAYING GAMES

CITATIONS

01. https://www.sfml-dev.org/index.php

THANK YOU

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