

# POLARdash!

Ngan Vu's Final Project for CPSC 478: Computer Graphics

Access: <https://polardash.herokuapp.com/>, or home.html in source code folder

Github repository: <https://github.com/thuynganvu/polardash>

Best played with Google Chrome on a 13-inch screen

## 1. Instructions:

- Use [A] and [D] to skate forward left and right. Like a real ice skater, your polar bear needs to alternate his feet in order to move straight forward.
- Collect all the gifts. There are 16 gifts in total.
- Avoid the penguins and all other obstacles, including trees and tunnels. If you touch any of them, you will be pushed back.
- You have 180 seconds to collect all the gifts and bring them back to Santa. The sky will darken as sunset approaches.
- Santa only appears when there are no gifts left – there will be arrows leading you to him.

## 2. Challenging aspects that I attempted:

- Groups of objects and characters that move along precomputed paths:
  - Gifts bounce up and down
  - Penguins shuffle left and right
  - Snow falls continuously
- A character that has appendages that move relative to the character as the character moves:
  - Polar bear changes its pose when it skates left, skates right, or stand still.
  - Penguins display animated wings and eyes as they move from side to side.
- Collision detection
  - Gifts can be collected, disappearing upon contact
  - Polar bear is pushed back if it comes too close to the penguins or obstacles
  - The bear must touch Santa in order to end the game
- Timing
  - The game has a clock and a countdown timer
  - The color of the sky changes as time pass to indicate time of the day
- Novel objects created for Polar Dash
  - Polar bear, penguins, gifts, Christmas trees, mountains, snow, and Santa are all built from scratch.
  - The tracks and tunnels are modified from NVMC.



There are 16 gifts to collect. The sky will darken as you gather all of them. Avoid the penguins.



Tunnels and trees add an extra challenge; they repel your bear just like penguins do.



When all the gifts are collected, Santa will appear. Arrows direct you to his whereabouts in the woods.



Title screen, where the front of the bear can be seen. Instructions are also displayed before the game begins.