**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.

1. **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, diappearing 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. |