

THROWMAN

FINAL PROJECT 2017

Programming Fundamentals 1, Prof. Nystrom

Presented by M. Cattaneo, S. Ferrara, P.Willi

THE ORIGINAL GAME WAS....



WE MADE IT MORE FUN AND
IMPLEMENTED FANTASTIC
FEATURES
AND NEW SCENARIOS

STRUCTURE OF THE GAME

THROWMAN

Main Menu

SPACE

MEDIEVAL

CHRISTMAS EDITION
FOR REAL PROS

HOW TO PLAY



M. Cattaneo



S. Ferrara



P. Willi

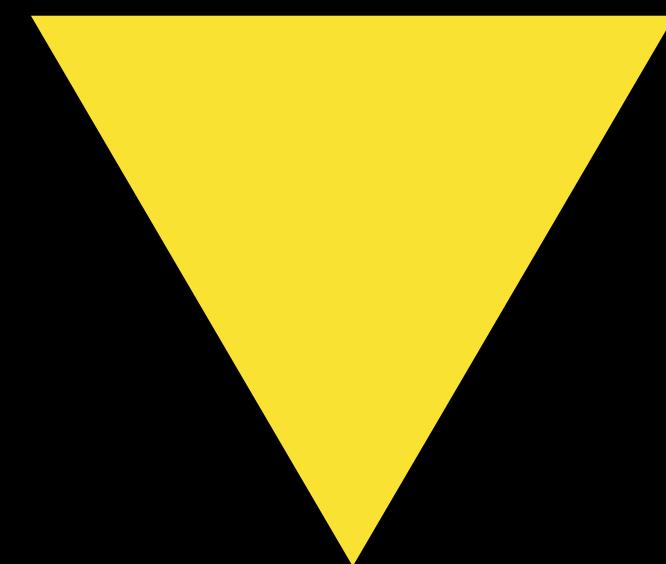
Become a medieval **archer**
and defend your castel

Be part of the
Santa vs. Elf
present challenge

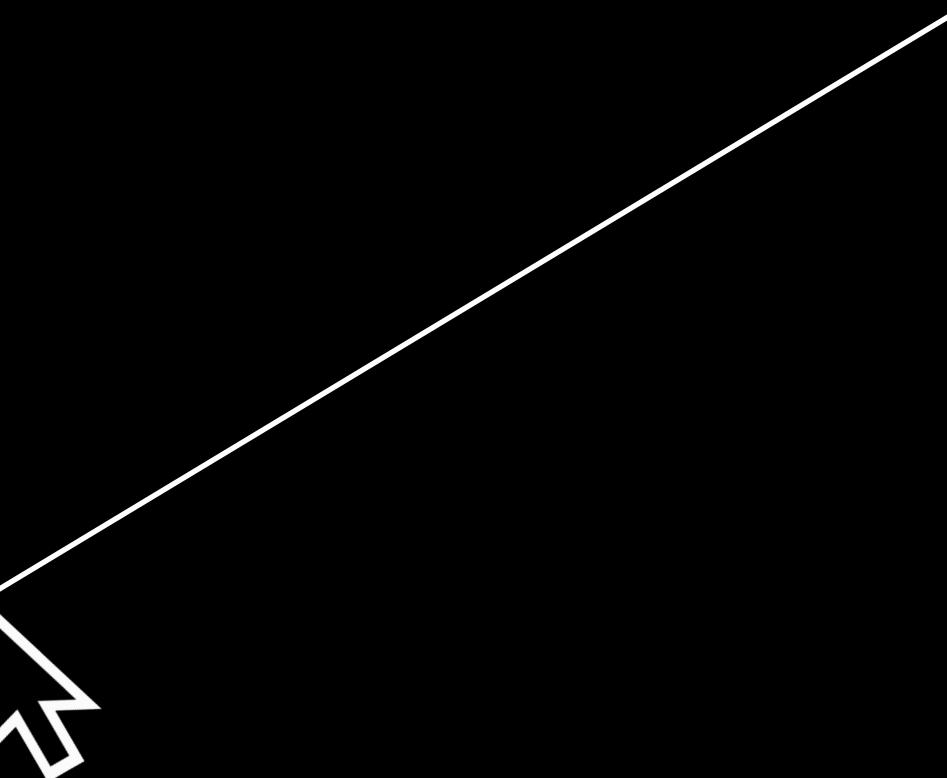
Be an **astronaut** and
throw asteroids

If you need help...

COMMON COMPONENTS OF EACH GAMING MODE



ANGLE AND SPEED
OF EACH THROW
IS SHOWN



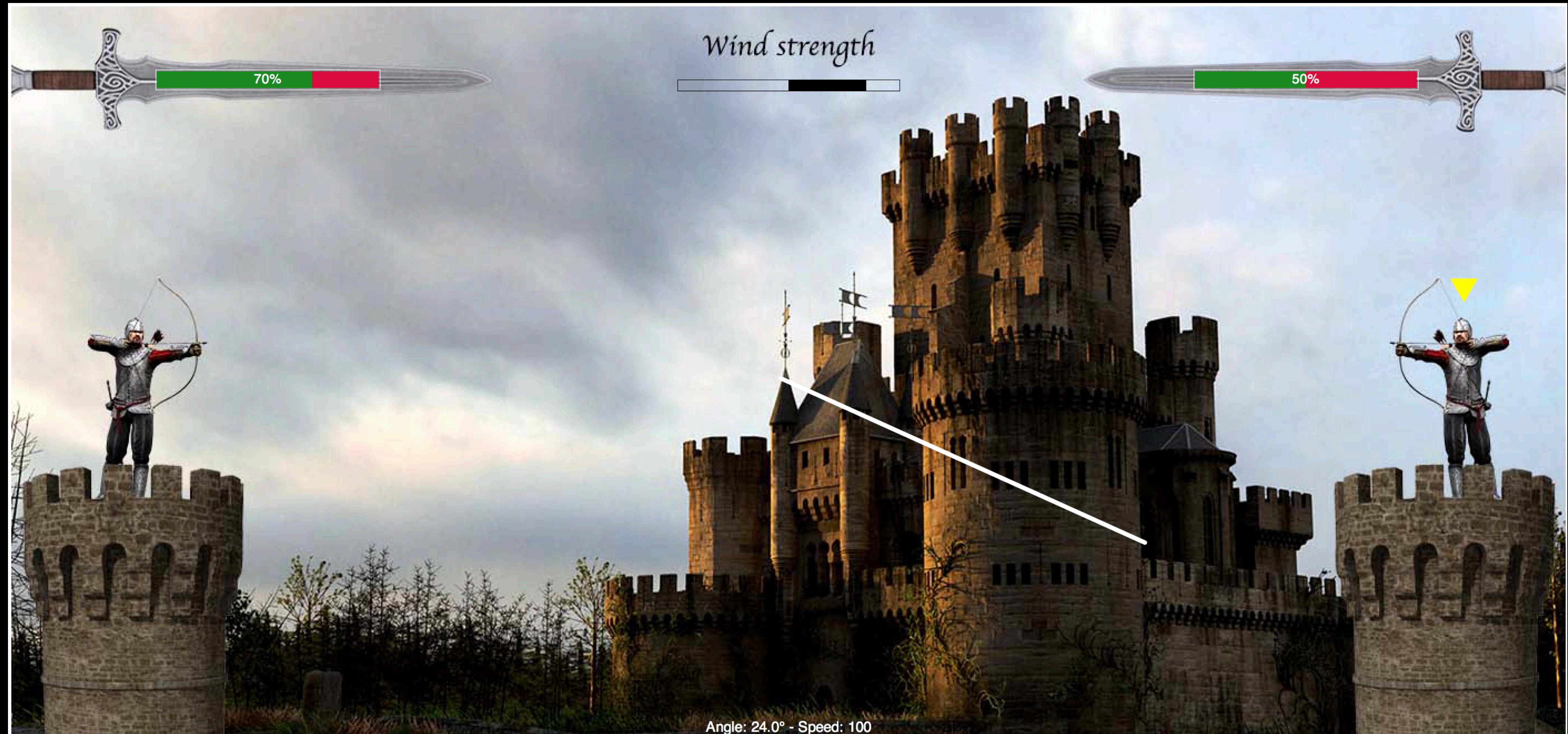
A POINTER THAT
INDICATES THE
PLAYER'S TURN

Angle: 37.0° - Speed: 95.0



A LIFE BAR THAT
DECREASES
DEPENDING ON THE HIT

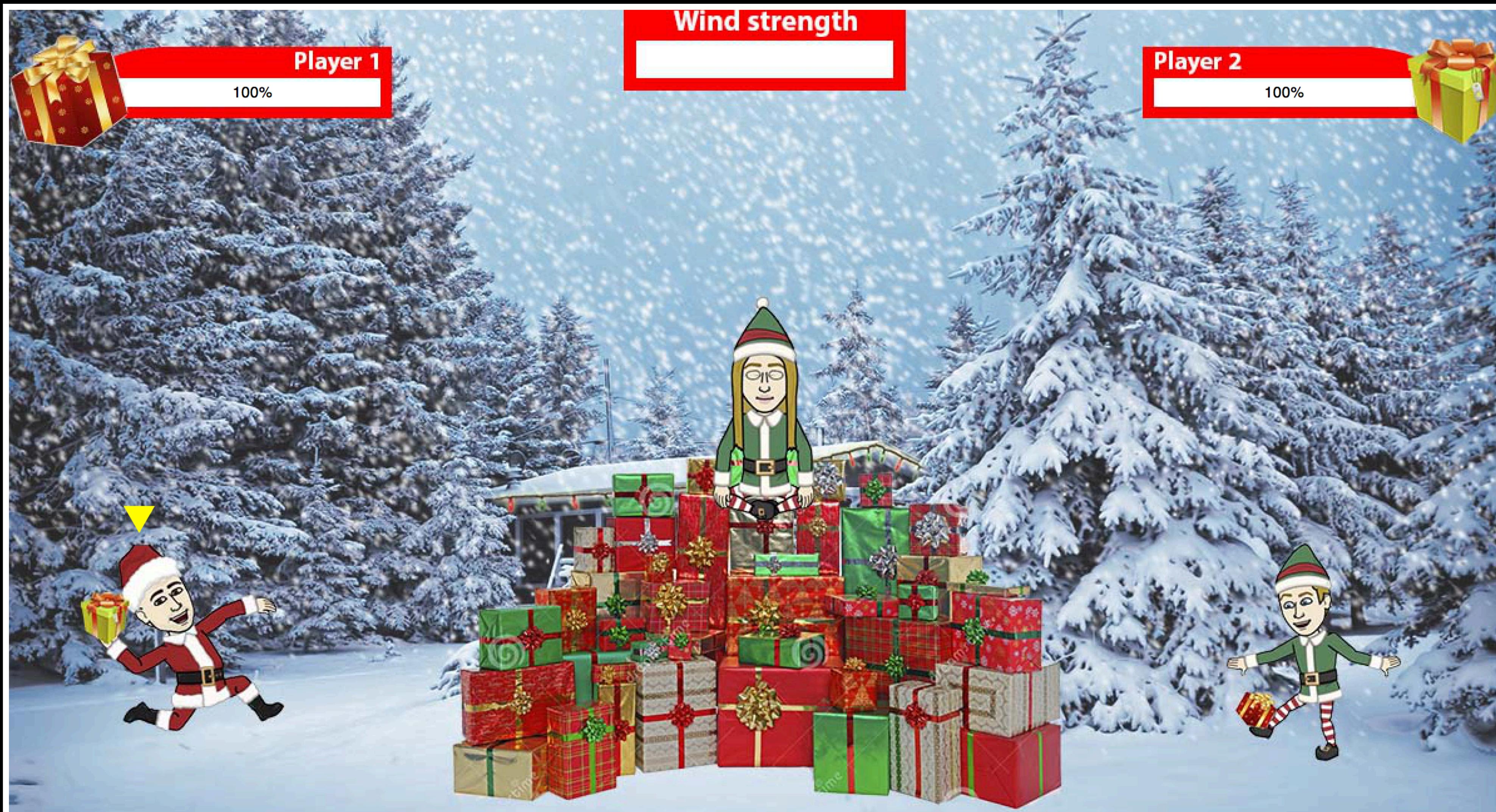
MEDIEVAL GAMING MODE



SPACE GAMING MODE



CHRISTMAS GAMING MODE



MAIN CHALLENGES

THE PARABOLA FORMULA

$$y = -\frac{g}{2(v_0)^2 \cos^2(\alpha)} x^2 + \left(\frac{gx_0}{(v_0)^2 \cos^2(\alpha)} + \tan(\alpha) \right) x - \frac{g(x_0)^2}{2(v_0)^2 \cos^2(\alpha)} - \tan(\alpha)x_0 + y_0$$

y is the output

y_0, x_0 are the initial position

x is the input

g is the gravity

α is the angle

v_0 is the initial velocity

```

(define (trajectory v x0 y0 alpha x gravity)
  (+
    (- 0
        (* (/ gravity
                  (* 2 (*
                            (cond
                              [(< v 1)
                               1]
                              [else
                               (* v v)])))
                  (* (cos
                        (degrees->radian
                          (cond [(and (< alpha 1) (>= alpha 0)) 1] [else alpha])))
                        (cos
                          (degrees->radian
                            (cond [(and (< alpha 1) (>= alpha 0)) 1] [else alpha])))))
                    (* x x)))
        (* (+ (/ (* gravity x0)
                  (* (* (cond
                            [(< v 1)
                             1]
                            [else
                             (* v v)]))
                      (* (cos (degrees->radian alpha)) (cos (degrees->radian alpha)))))))
           (* (tan (degrees->radian alpha))) x)
        (+ (- (- 0 (/ (* gravity (* x0 x0))
                      (* 2 (* (cond[(< v 1)
                                   1]
                                   [else
                                   (* v v)])))
                      (* (cos
                            (degrees->radian alpha))
                            (cos
                              (degrees->radian alpha)))))))
           (* (tan (degrees->radian alpha)) x0)
           y0)))

```

DO YOU WANT TO PLAY IT?

JUST GO TO

<http://throwman.ddns.net>

DOWNLOAD THE GAME AND HAVE FUN

THANK YOU

and

**Merry
Christmas**

