## Obstacle\_geenrator

- width\_:int
- height :int
- obstacle\_space\_:vector<int>
- start\_point\_:pair<int,int>
- goal\_point\_:pair<int,int>
- + Obstacle\_generator(void):none
- + generate obstacles(void):vector<int>
- + get\_height(void):int
- + get\_width(void):int
- + get\_startpoint(void):pair<int,int>
- + get\_goalpoint(void):pair<int,int>

## Bfs

- start\_point\_:pair<int, int>
- end\_point\_:pair<int, int>
- occupancy\_matrix\_:vector<pair<int,int>>
- width :int
- height\_:int
- obstacle\_ptr\_:shared\_ptr<vector
  <pair<int,int>>>
- +Bfs(int,int,pair<int,int>,pair<int,int>):none
- +Bfs(int,int,pair<int,int>,pair<int,int>,
  shared\_ptr<vector<pair<int,int>>>):none
- + set\_occmat(vector<pair<int,int>> &):none
- + set width(int):none
- + set\_height(int):none
- + set startpoint(pair<int,int>):none
- + set\_goalpoint(pair<int,int>):none
- + get\_next\_point(pair<int,int>
- ):vector<pair<int,int>>
- + startBfs():vector<pair<int,int>>

## Sdl\_wrapper

- width\_:int
- height\_:int
- renderer\_:SDL\_Renderer
- window\_:SDL\_Window
- isPolling\_:bool
- obstacle\_ptr\_:shared\_ptr<vector</pre>
- <pair<int,int>>>
- + set\_width(int):none
- + get\_width(void):int
- + set\_height(int):none
- + get\_height(void):int
- + event\_handler(void):int
- + update\_screen(void):int
- + clean(void):int
- + call\_delay(int):int
- + draw\_point(pair<int,int> ):int
- + set\_obstacle\_ptr(shared\_ptr<vector
- <pair<int,int>>>):int
- + Sdl\_wrapper(int, int):none
- + Sdl\_wrapper(int, int,
- shared\_ptr<vector<pair<int,int>>>):none