

GOOD MORNING!

早上好!

안녕하세요!

DAY 6

DAY 5 (FINAL PROJECT)

- 비즈니스/System 요구 사항 업데이트
- 시스템 설계 및 프로세스 정립
 - System(High Level) Design
 - Schedule/Time Management
- 역할 분담 및 일정 조율
- 개발 환경 구축(맵 디자인, SW 개발, 문서 통합 관리)
- 멀티 로봇 환경 구축 및 네비게이션
- 멀티 로봇 개별 업무 수행
- 멀티 로봇 협동 업무 수행
- (Optional) Turtlebot4 각종 센서 데이터의 이해와 적용

DAY 6 (FINAL PROJECT)

- 시스템 설계에 기반한 객체 감지 모델 구현
 - 로봇 환경에 적용 및 Unit Test
 - 모듈로 제작하고 launch파일로 구현
 - code 정리 및 버전관리, 문서 작성 및 영상 촬영, 팀 내 기술 브리핑
- 시스템 설계에 기반한 SysMon 설계 구현
 - 로봇 환경에 적용 및 Unit Test
 - 모듈로 제작하고 launch파일로 구현
 - code 정리 및 버전관리, 문서 작성 및 영상 촬영, 팀 내 기술 브리핑

DAY 7 (FINAL PROJECT)

- 시스템 설계에 기반한 **AMR 제어** 구현
- 로봇 환경에 적용 및 Unit Test
- 모듈로 제작하고 launch 파일로 구현
- code 정리 및 버전관리, 문서 작성 및 영상 촬영, 팀 내 기술 브리핑

프로젝트 RULE NUMBER ONE!!!

Have Fun Fun Fun!



PROJECT SCHEDULE **UPDATE** BY EACH TEAM



BUSINESS REQUIREMENT **UPDATE** BY EACH TEAM

Using the posted notes and flipchart as needed

SOLUTION/SYSTEM REQUIREMENT **UPDATE** BY EACH TEAM

Using the posted notes and flipchart as needed

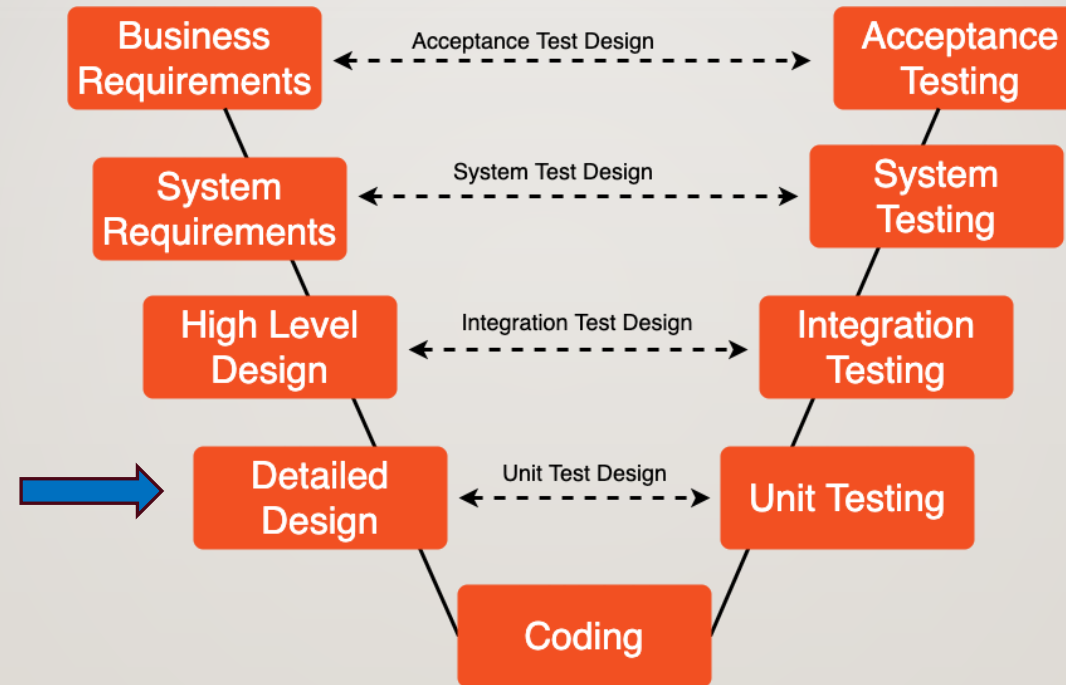
SYSTEM DESIGN ARCHITECTURE **UPDATE** BY EACH TEAM

Using the posted notes and flipchart as needed

SYSTEM DESIGN ARCHITECTURE
PRESENTATION SHOULD BE DONE HERE
BUT POSTPONED TO **DAY 7 AFTERNOON!!!!**



SPRINT I

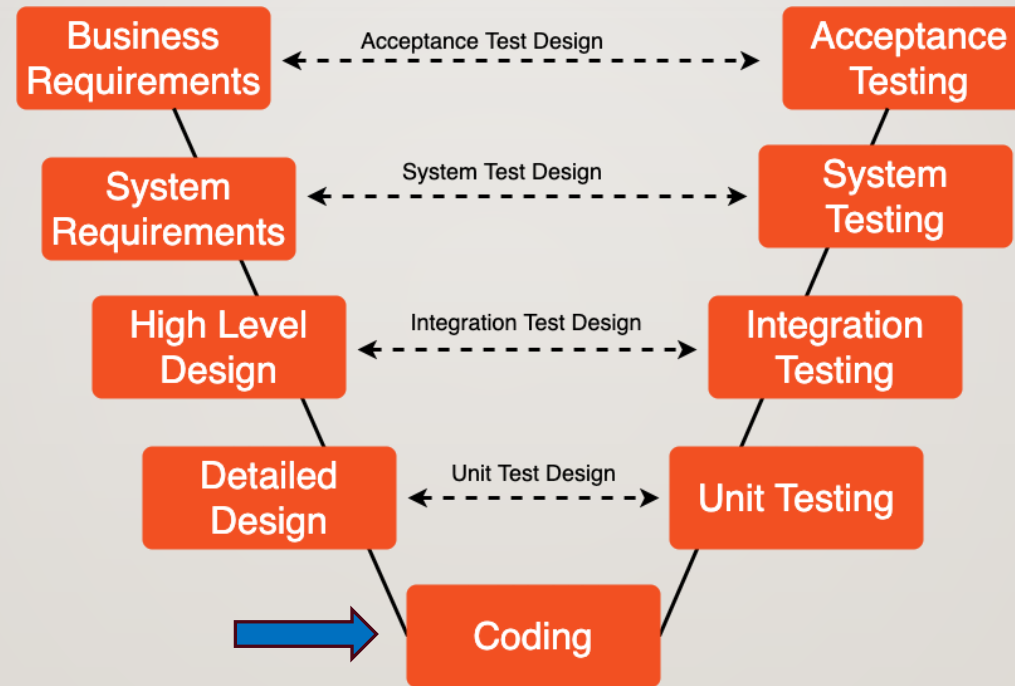


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TEAM EXERCISE 12

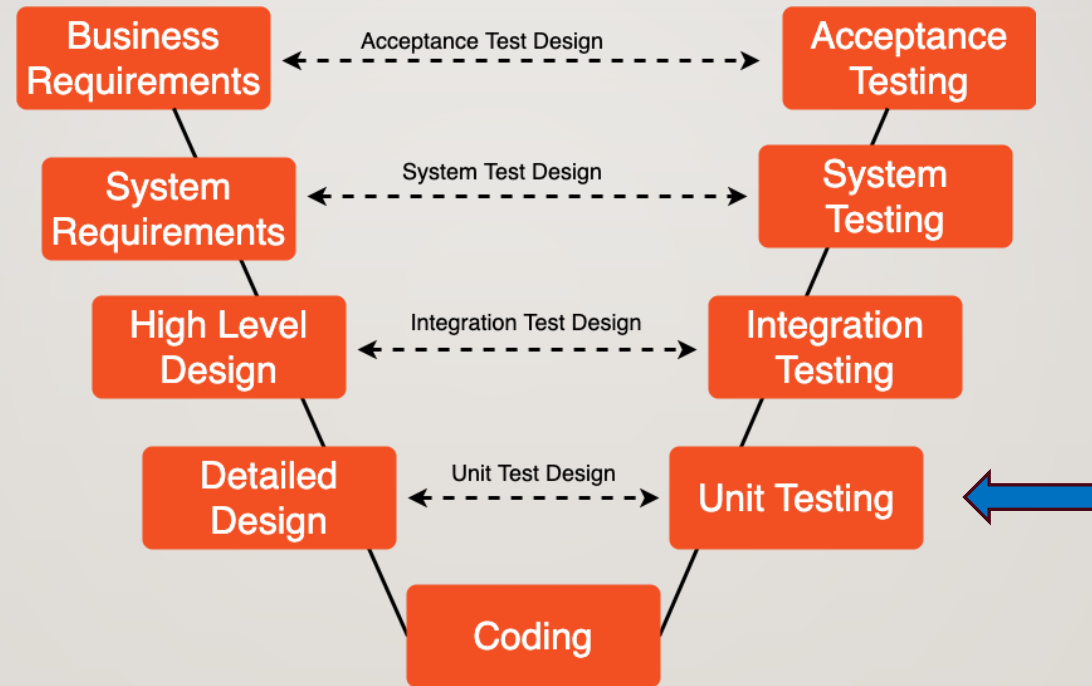
Perform Detail Design of Sprint I using Process Flow Diagram

SPRINT I



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SPRINT I



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TEAM EXERCISE 13

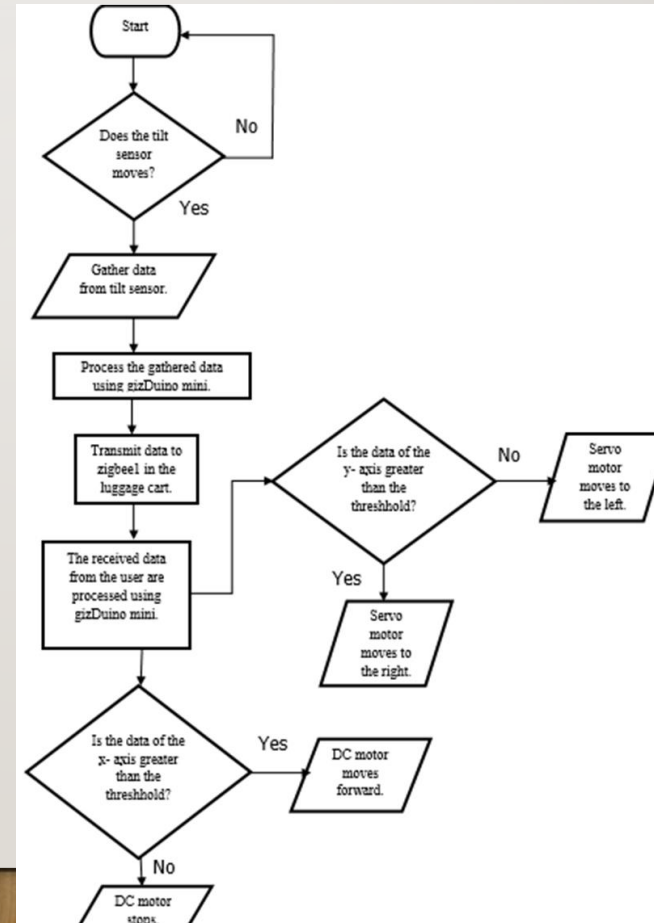
Perform coding and testing of Sprint 1 Module

(평가 2) DESIGN/CODE/TEST REVIEW BY EACH TEAM

Show actual results against the expected results and explain the code written

WHAT TO DO IN CODE REVIEW

- Explain
 - Design



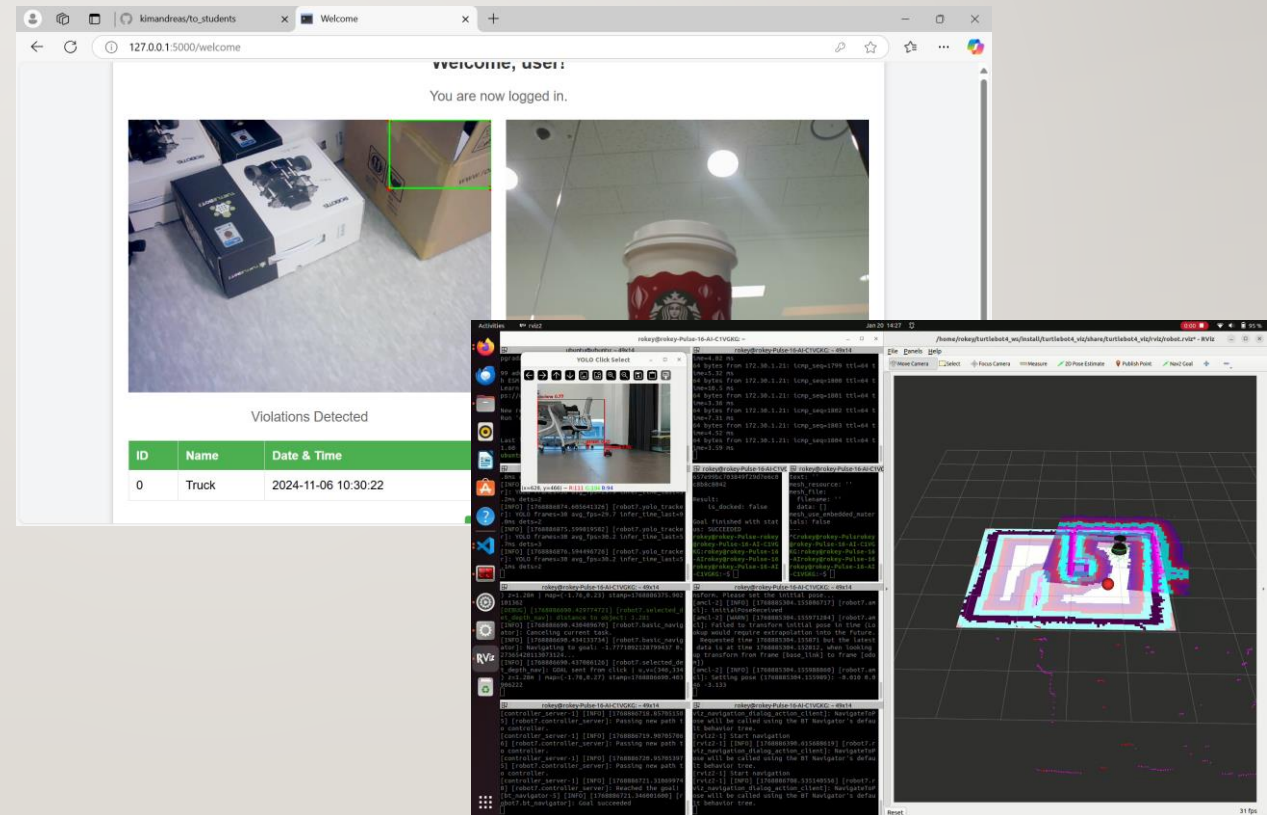
WHAT TO DO IN CODE REVIEW

- Explain
 - Design
 - Code

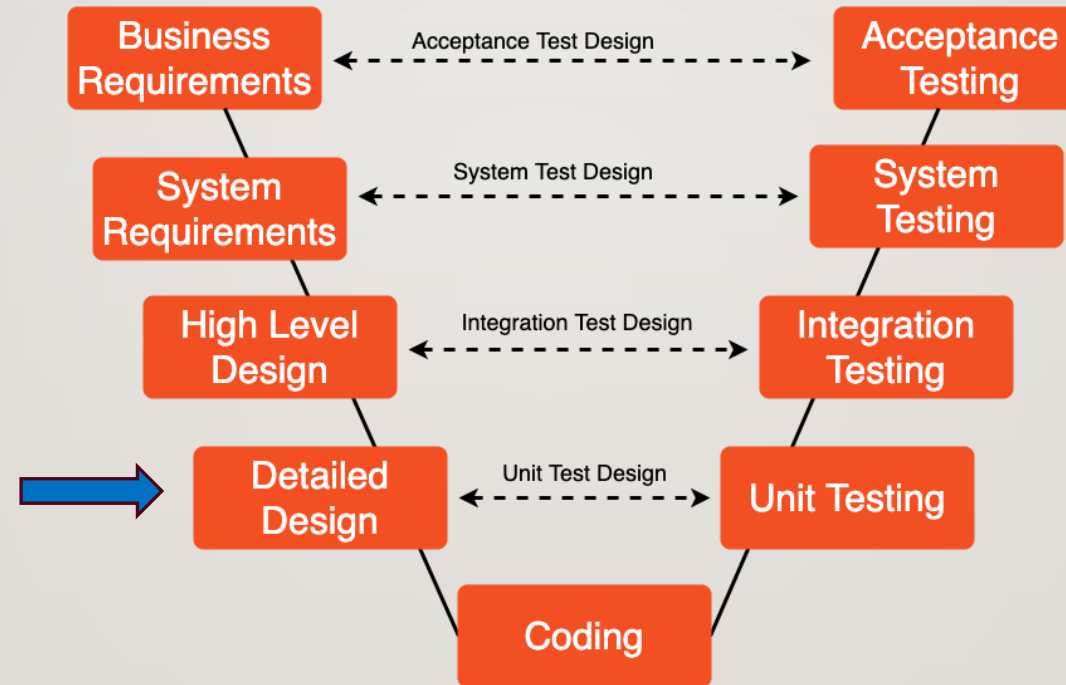
```
103 def decode_compressed_depth_16uc1(msg: CompressedImage) -> Tuple[Optional[np.ndarray], str]:
128     depth = cv2.imdecode(png, cv2.IMREAD_UNCHANGED)
129
130     if depth is None:
131         return None, f"cv2.imdecode failed (png_offset={i} len={len(buf)} format='{msg.format}')"
132
133     # Normalize shape: want HxW
134     if depth.ndim == 3:
135         depth = depth[:, :, 0]
136
137     if depth.dtype not in (np.uint16, np.float32):
138         return None, f"decoded dtype={depth.dtype} (expected uint16 or float32) png_offset={i}"
139
140     return depth, f"ok png_offset={i} shape={depth.shape} dtype={depth.dtype}"
141
142
143 class SelectedDetDepthNav(Node):
144     """Time-sync selected detections with depth, then send Nav2 goals + marker."""
145
146     def __init__(self):
147         super().__init__("selected_det_depth_nav")
148
149         # -----
150         # Topic setup (namespace-aware)
151         # -----
152         # detection topic is relative so it follows __ns
153         self.det_topic = "selected_detection"
154
155         ns = self.get_namespace().rstrip("/")
156         self.depth_topic = f"{ns}/oakd/stereo/image_raw/compressedDepth"
157         self.info_topic = f"{ns}/oakd/rgb/camera_info"
158
159         self.get_logger().info(f"Detection topic : {self.resolve_topic_name(self.det_topic)}")
160         self.get_logger().info(f"Depth topic : {self.depth_topic}")
```


WHAT TO DO IN CODE REVIEW

- Explain
 - Design
 - Code
 - Test/Validation
 - Test Code
 - Log Output
 - Screenshot/video
 - Photo/Video
 -



SPRINT 2

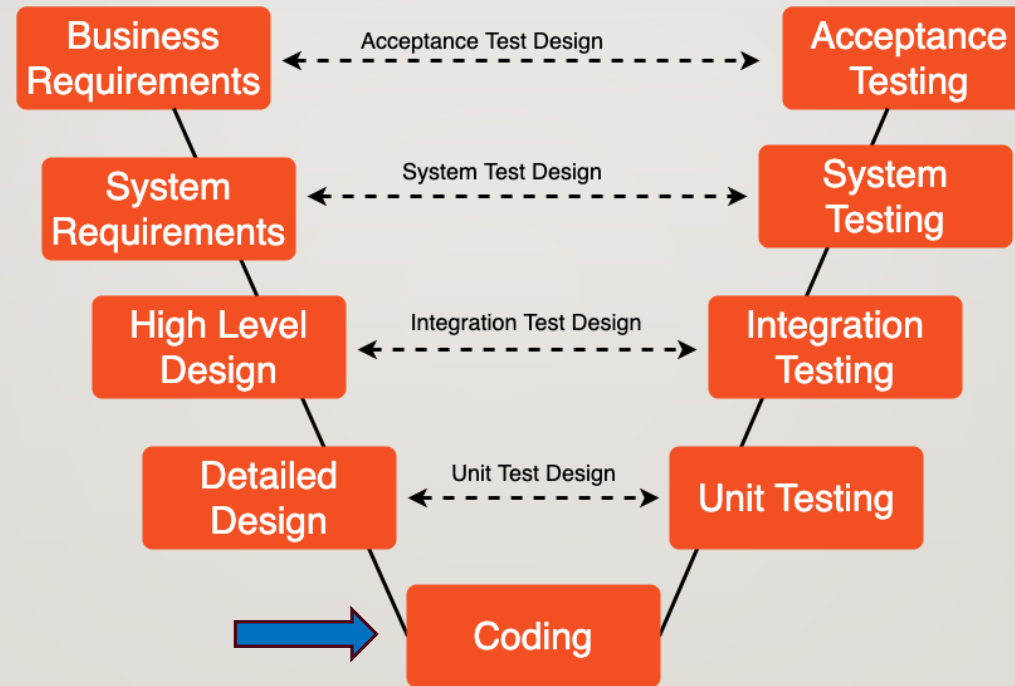


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TEAM EXERCISE 14

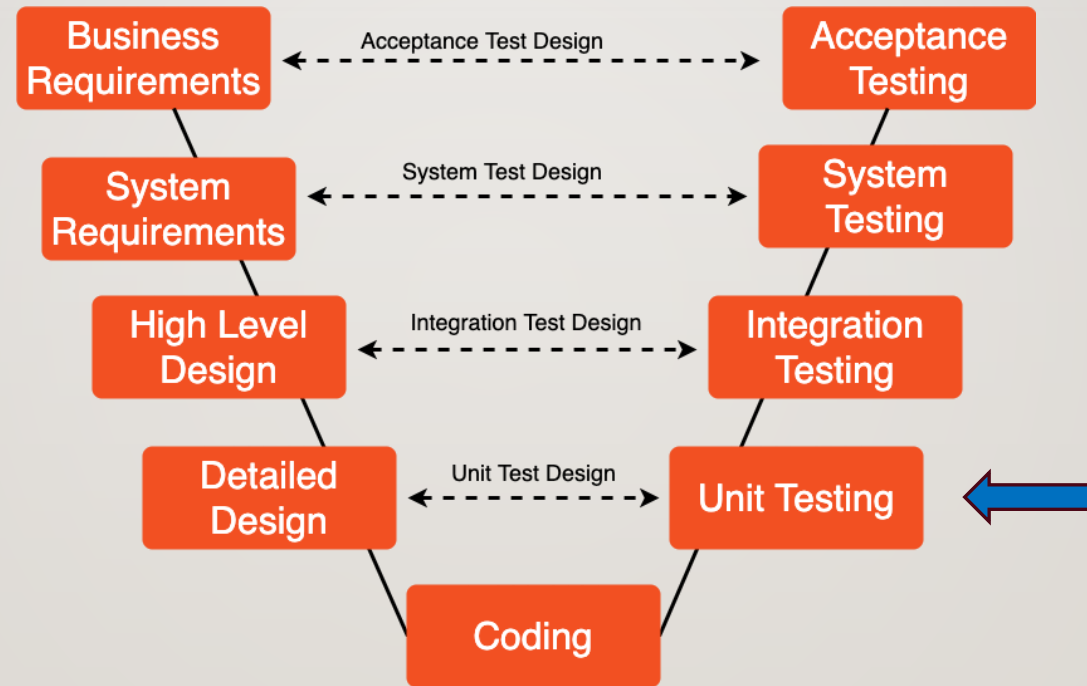
Perform Detail Design of Sprint 2 using Process Flow Diagram

SPRINT 2



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SPRINT 2



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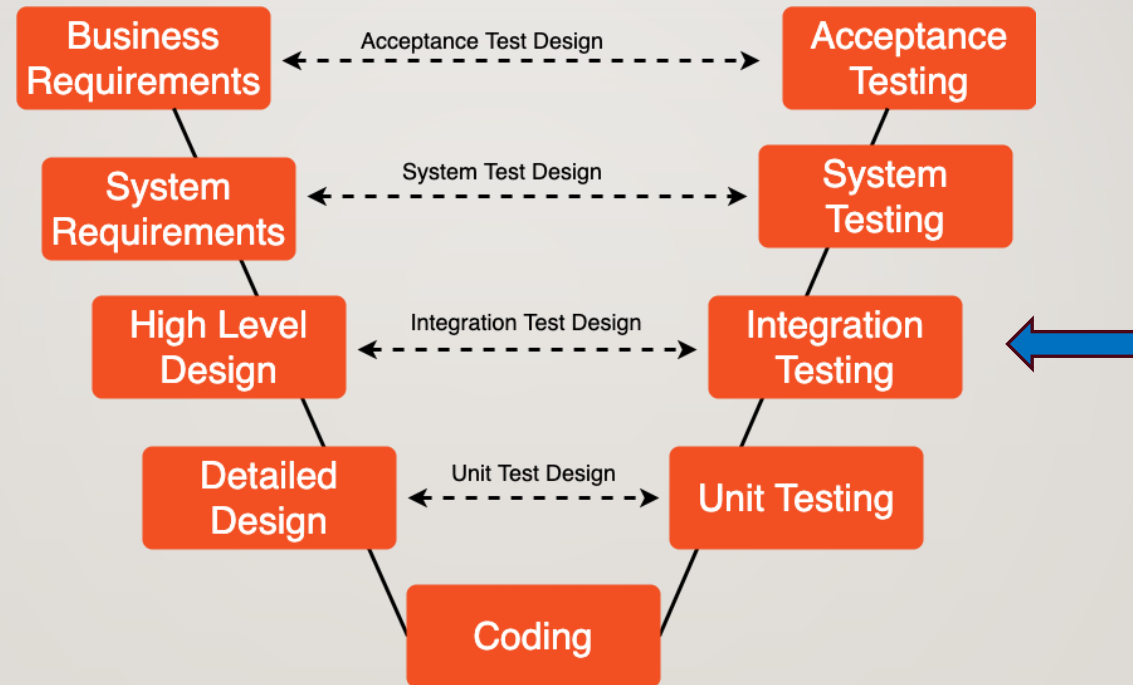
TEAM EXERCISE 15

Perform coding and testing of Sprint 2 Module

(평가 3) DESIGN/CODE/TEST REVIEW BY EACH TEAM

Show actual results against the expected results and explain the code written

SPRINT 1&2 – INTEGRATION & TEST



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TEAM EXERCISE 16

Perform integrate and test of Sprint 1&2 Modules

SETTING SOLUTION NETWORK

DAY 5 - System Monitor & Multi Robot

Aa 이름

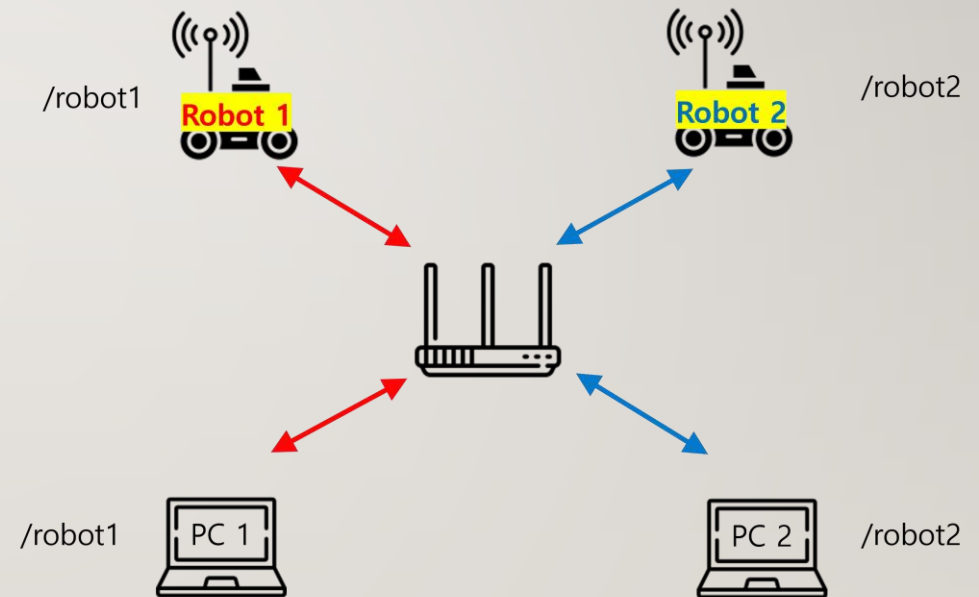
☀ 상태

● Multi Robot Standard Setup

● 시작 전

● Multi Robot Custom Discovery Setup

● 시작 전



프로젝트 RULE NUMBER ONE!!!

Are we having
Fun???

